COMPULSORY INTERVENTIONS IN PSYCHIATRY: AN OVERVIEW ON THE CURRENT SITUATION AND RECOMMENDATIONS FOR PREVENTION AND ADEQUATE USE

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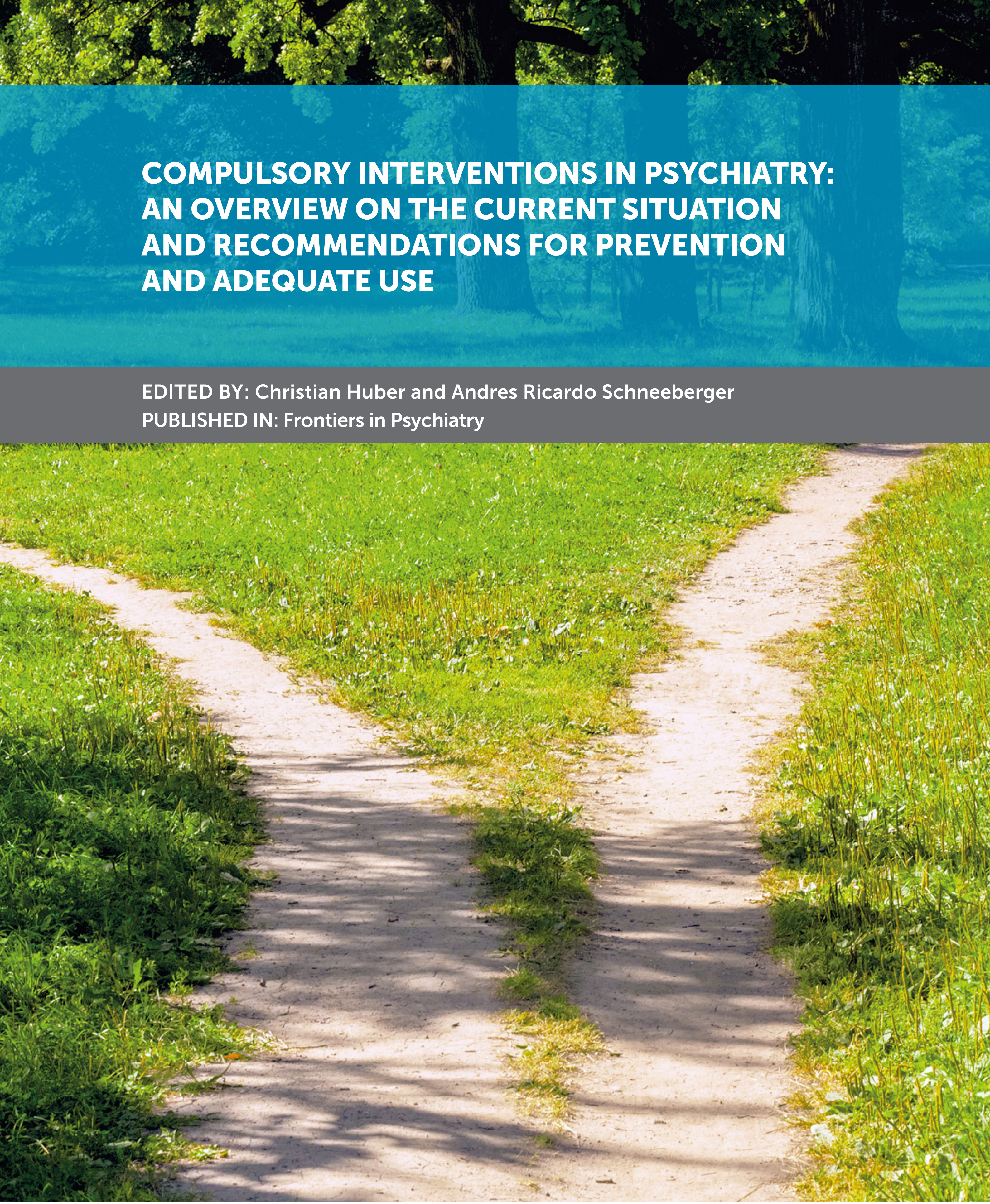

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COMPULSORY INTERVENTIONS IN PSYCHIATRY: AN OVERVIEW ON THE CURRENT SITUATION AND RECOMMENDATIONS FOR PREVENTION AND ADEQUATE USE

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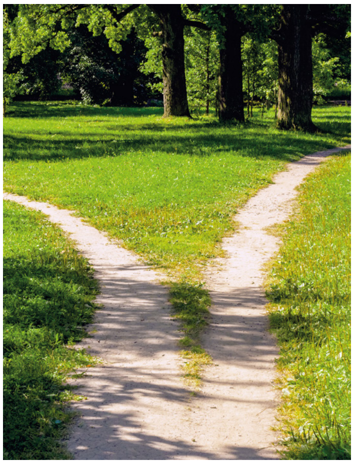

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Table of Contents

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EDITORIAL
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Editorial: Compulsory Interventions in Psychiatry: An Overview on the Current Situation and Recommendations for Prevention and Adequate Use

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Keywords: coercion, autonomy, involuntary treatment, seclusion, restraint, involuntary admission, community treatment order

Editorial on the Research Topic

Compulsory Interventions in Psychiatry: An Overview on the Current Situation and Recommendations for Prevention and Adequate Use

State-of-the-art clinical psychiatry seeks to provide successful treatment of persons with mental illness in a comprehensive approach integrating biological, psychological, social, and spiritual aspects (1). The focus on empowerment- and recovery-oriented strategies allows clinicians and people with mental illness to interact at the same level (2). However, illness symptoms sometimes prevent patients from fully understanding the potential benefits of treatment (3, 4). Aggression, violence, and self-endangering behavior in psychiatric patients are often used as justification for more restrictive policies in mental health care (4–7). Yet, current studies have shown that restrictive settings do not necessarily prevent self-harm and suicide (8, 9) and do not reduce all sorts of violence and aggression (10). Locked doors lead to a worse climate on the wards, directly affecting the therapeutic milieu and the treatment alliances (11, 12). In addition, patients who were mandated to psychiatric treatment might be more reluctant to receive treatment in the future [(3); Hachtel et al.]. While studies have shown that mandated treatments do also positively impact the outcome of illness, this is often mediated by an increase in services rendered rather than the direct effects of coercion (13).

Compulsory interventions aiming at patient and staff safety, as well as mandatory treatment may be necessary to ensure treatment for those who do not want to be treated (4). The goal is to protect mentally ill persons from self-harm, suicide, and detrimental consequences of untreated illness, and to protect relatives, healthcare professionals, and the general public from preventable aggression and violence (14). This gives rise to serious ethical problems and clinical challenges.

In the current Research Topic, Hoff elaborates on these ethical challenges. He discusses that coercive interventions have to be considered exceptional measures and may only be used under well-defined ethical and juridical conditions. Although guidelines should be adhered to, they cannot substitute individual case-based decisions. Furthermore, he recommends taking on the debate on autonomy in psychiatry, as facing this challenge might prove beneficial for psychiatry and its patients. Also focusing on patient autonomy, Scholten et al. discuss how different interpretations of psychiatric advance directives (PAD) may be useful for patients in future crises. They critically

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discuss interpretations of PAD promoting and undermining autonomy and propose that using supported decision-making and competence assessment may help to employ PAD successfully. As—like Hoff states—guidelines can only give general recommendations, Montaguti et al. discuss how clinical ethics consultation can be helpful to inform case-based decisions on coercive measures.

Following up to these ethical considerations, Oliva et al. discuss the legal preconditions for coercive measures. They explore if the judicial basis and the actual reasons for compulsory admission to psychiatric treatment in Turin (Italy) are mutually compatible and the authors critically discuss if changes in legislation are necessary. Becker and Forman bring up the point that psychiatric emergencies often occur in emergency rooms and outside of specific psychiatric settings. They discuss the role of implied consent in these emergency settings and explore the legal and ethical basis for acting in emergencies. Finally, Hachtel et al. discuss how the legal basis of mandated treatment influences psychiatric therapy and treatment outcome. They distinguish between the concepts of formal vs. perceived coercion and examine how psychiatry could fulfill a dual mandate of control and therapy and how it can be helpful even in the context of formal coercion. McMillan et al. also explore the issue of building a positive therapeutic alliance in the context of coercion. Using qualitative analysis of interviews with persons subjected to community treatment orders (CTO) and mental health professionals, they debate the role of trust and mistrust for the success and failure of reaching recovery in the frame of a CTO.

The legal framework regulating compulsory interventions has a direct impact on psychiatric practice. Radisic and Kolla focus on the situation in Ontario (Canada), where psychiatric inpatients who appeal to the Consent and Capacity Board (CCB) have the right to refuse medication until the CCB has come to a decision. They examine the frequency of seclusion and restraint in civil and forensic inpatients during this time and discuss how improving legislation and time to CCB decision could be beneficial for these patients. Mahler et al. take a look at the interplay of legal procedures and structural factors in their influence on the use of coercive measures in Germany. Arnold et al. examine the situation in Basel (Switzerland) and evaluate factors associated with compulsory admissions to psychiatric wards and with appeals against these admissions. Finally, Buadze et al. explore the position of defense lawyers in Switzerland on the availability of opioid agonist treatment vs. forced discontinuation in pre-trial detention and prisons. In these settings, availability of a specific treatment is partly controlled and moderated by custodians and legal professionals. Thus, there is a risk that this patient population does not receive interventions according to psychiatric state-of-the-art guidelines.

Addressing issues from social psychiatry and mental health services research, the original papers in the current Research Topic employ a broad set of qualitative and quantitative methods. Data for many of the publications in this Research Topic stem from clinical routine documentation. In this context, Fröhlich et al. examine the reliability of paper-based routine documentation in psychiatric inpatient care and find acceptable reliability, depending on the chosen documentation categories and variables. Together with the published literature, this indicates that both electronic and paper-based routine documentation can be used for health services research, but that their limitations have to be kept in mind.

Several publications focus on the frequency of coercive measures. In an effort to improve an overview on the use and effects of compulsory measures in psychiatry, de Bruijn et al. present a protocol for a systematic review on physical and pharmacological restraints. Saya et al. provide a narrative review on criteria, procedures, and future prospects of involuntary treatment in psychiatry around the world. Legal and ethical views and mental health services structures and traditions vary depending on country and sometimes region where patients are treated—and they have a considerable impact on practices regarding compulsory interventions. Thus, information on the situation in different countries provides important information and the basis for a discussion how the different settings should be developed.

Concerning the effects of coercive measures, Chieze et al. present a systematic review on the effects of seclusion and restraint in adult psychiatry. They conclude that, although the heterogeneity of the included studies limits interpretation, the overall results show negative effects of seclusion and restraint, and that more research is needed. Kersting et al. summarize the current literature on physical harm and death in the context of coercive measures in psychiatry in a systematic review, taking a look at a highly relevant but currently underresearched aspect of coercion in psychiatry.

As compulsory measures can often be avoided if a critical situation can be identified and successfully addressed early enough, research on the prediction of coercion is highly needed. To enhance our knowledge on the predictors of compulsory admission to treatment, Marty et al. study the characteristics of psychiatric emergency situations and the decision-making process leading to involuntary admission, and Lay et al. analyze the predictors of compulsory re-admission to psychiatric inpatient care. Günther et al. use machine learning to identify direct coercion in a high-risk subgroup of forensic patients with schizophrenia. And Hazewinkel et al. and Stepanow et al. explore the possibility of predicting seclusion by analyzing text entries from routine documentation in electronic medical records.

Several papers in the current Research Topic examine approaches to prevent or reduce compulsory interventions in psychiatry. Zinkler and Brophy et al. discuss the possibility to use supported decision making in the prevention of compulsory interventions and of community treatment orders in mental health care. Baumgardt et al. (a) study the effects of the introduction of the Safewards model on the use of coercive measures on two locked wards in Germany [please note that this paper has been updated according to the corrigendum in Baumgardt et al. (b)]. Schöttle et al. report that the introduction of an integrated care model in Hamburg (Germany) is connected with a reduction of involuntary admissions in patients with severe psychotic disorders. As Rabenschlag et al. discuss from a nursing perspective, de-escalation strategies can be useful for preventing and reducing coercion in psychiatry—including

TABLE 1 | Overview on the papers published within the scope of the Research Topic.

Topic/Authors	Title	Article type
Legal and ethical aspects		
Hoff	Compulsory interventions are challenging the identity of psychiatry	Perspective
Scholten et al.	Psychiatric advance directives under the convention on the rights of persons with disabilities: why advance instructions should be able to override current preferences	Policy and Practice Reviews
Montaguti et al.	Reflecting on the reasons pros and cons coercive measures for patients in psychiatric and somatic care: the role of clinical ethics consultation. A pilot study	Original Research
Oliva et al.	Compulsory psychiatric admissions in an italian urban setting: are they actually compliant to the need for treatment criteria or arranged for dangerous not clinical condition?	Original Research
Becker and Forman	Implied consent in treating psychiatric emergencies	Opinion
Hachtel et al.	Mandated treatment and its impact on therapeutic process and outcome factors	Review
McMillan et al.	Trust and community treatment orders	Original Research
Radisic and Kolla	Right to appeal, non-treatment, and violence among forensic and civil inpatients awaiting incapacity appeal decisions in Ontario	Original Research
Arnold et al.	Compulsory admission to psychiatric wards–who is admitted, and who appeals against admission?	Original Research
Mahler et al.	Same, same but different: how the interplay of legal procedures and structural factors can influence the use of coercion	Opinion
Buadze et al.	The accessibility of opioid agonist treatment and its forced discontinuation in swiss prisons—attitudes, perceptions and experiences of defense lawyers in dealing with detained persons using opioids	Original Research
Use of routine data		
Fröhlich et al.	Reliability of paper-based routine documentation in psychiatric inpatient care and recommendations for further improvement	Original Research
Frequency of coercive measures		
de Bruijn et al.	Physical and pharmacological restraints in hospital care: protocol for a systematic review	Clinical Study Protocol
Saya et al.	Criteria, procedures, and future prospects of involuntary treatment in psychiatry around the world: a narrative review	Review
Effects of coercion		
Chieze et al.	Effects of seclusion and restraint in adult psychiatry: a systematic review	Systematic Review
Kersting et al.	Physical harm and death in the context of coercive measures in psychiatric patients: a systematic review	Systematic Review
Prediction of coercion		
Marty et al.	Characteristics of psychiatric emergency situations and the decision-making process leading to involuntary admission	Original Research
Lay et al.	Predictors of compulsory re-admission to psychiatric inpatient care	Original Research
Günther et al.	Identifying direct coercion in a high risk subgroup of offender patients with schizophrenia via machine learning algorithms	Original Research
Hazewinkel et al.	Text analysis of electronic medical records to predict seclusion in psychiatric wards: proof of concept	Original Research
Stepanow et al.	Narrative case notes have the potential to predict seclusion 3 days in advance: a mixed-method analysis	Original Research
Prevention and reduction of coercion		
Zinkler	Supported decision making in the prevention of compulsory interventions in mental health care	Opinion
Brophy et al.	Community treatment orders and supported decision-making	Original Research
Baumgardt et al. (a)	Preventing and reducing coercive measures—an evaluation of the implementation of the safewards model in two locked wards in Germany	Original Research
Schöttle et al.	Reduction of involuntary admissions in patients with severe psychotic disorders treated in the ACCESS integrated care model including therapeutic assertive community treatment	Original Research
Rabenschlag et al.	Nursing perspectives: reflecting history and informal coercion in de-escalation strategies	Perspective
Widmayer et al.	Could animal-assisted therapy help to reduce coercive treatment in psychiatry?	Mini Review

(Continued)

TABLE 1 | Continued

Topic/Authors	Title	Article type
Staff and consumer perspectives		
Sampogna et al.	Perceived coercion among patients admitted in psychiatric wards: Italian results of the EUNOMIA study	Original Research
Efkemann et al.	Ward atmosphere and patient satisfaction in psychiatric hospitals with different ward settings and door policies. results from a mixed methods study	Original Research
Fletcher, Hamilton et al.	Safewards impact in inpatient mental health units in Victoria, Australia: staff perspectives	Original Research
Fletcher, Buchanan-Hagen et al.	Consumer perspectives of safewards impact in acute inpatient mental health wards in Victoria, Australia	Original Research
Franke et al.	Perceived institutional restraint is associated with psychological distress in forensic psychiatric inpatients	Original Research
Steinauer et al.	Opening the doors of a substance use disorder ward—benefits and challenges from a consumer perspective	Perspective
Reisch et al.	Comparing attitudes to containment measures of patients, health care professionals and next of kin	Original Research
Jaeger et al.	Refusing medication therapy in involuntary inpatient treatment—a multiperspective qualitative study	Original Research
Soares and Pinto da Costa	Experiences and perceptions of police officers concerning their interactions with people with serious mental disorders for compulsory treatment	Original Research

informal coercion, which is otherwise often overlooked. The authors highlight the importance of the attitudes and values of the person perceiving aggression for their response to this behavior and advise that health care personnel should develop a critical awareness toward the use of coercive measures. Finally, Widmayer et al. pose the question if animal-assisted therapy could help to reduce coercive treatment in psychiatry and, based on positive findings in the current literature supporting this possibility, encourage future research on this topic.

Lastly, a number of papers assess staff and consumer perspectives on compulsory interventions in psychiatry. Sampogna et al. examine perceived coercion among inpatients of five psychiatric wards in Italy and its associations with treatment satisfaction. Efkemann et al. analyze ward atmosphere and patient satisfaction in locked, facultative locked and open door settings. Fletcher, Hamilton et al. explore the impact of the introduction of the Safewards model in inpatient mental health units in Victoria (Australia) on healthcare professionals and assess consumer perspectives in their second paper (Fletcher, Buchanan-Hagen et al.). Franke et al. address forensic psychiatric inpatient settings and examine perceived institutional restraint and psychological distress. Focusing specifically at substance use disorder wards, Steinauer et al. report healthcare personnel and consumer perspectives on the benefits and drawbacks of introducing an open door policy.

Concerning specific interventions and populations, Reisch et al. examine attitudes to containment measures of patients, next of kin, and health care professionals. Jaeger et al. conducted a qualitative study assessing the opinions of inpatients, their relatives, and healthcare professionals on not performing compulsory medication during involuntary inpatient treatment. Lastly, Soares and Pinto da Costa examined the experiences and perceptions of police officers concerning their interactions with people with serious mental disorders for compulsory treatment.

Table 1 gives an overview on the papers published within the scope of the current Research Topic.

The primary focus of this Research Topic was to provide an overview on the current situation in clinical psychiatry and in psychiatric research, to collect scientific evidence on the prevention and adequate use of compulsory interventions, its effects and consequences. Now when finished, it also gives recommendations for mental health care professionals on the prevention of aggression and violence, the use of coercive measures and possible treatment alternatives to reduce forced interventions. In addition, it outlines future research strategies to advance the field and to ultimately approach the goal of optimal and safe treatment of this vulnerable population.

Of course, the number and distribution of submissions to a Research Topic cannot be considered representative for a research field. However, the considerable number of papers together with the current scientific literature show that research on compulsory interventions is a broad and active field in psychiatry. This mirrors a rising awareness of this issue in academic and clinical psychiatry. Ethical and legal aspects of coercion, the prediction, prevention and reduction of coercion, and consumer perspectives on coercion where the most prominent focus of submissions to this Research Topic. This shows that professionals within the field of psychiatry are critically evaluating in which situations and under which preconditions compulsory measures should be used and how they can be avoided. It acknowledges the importance of the field for healthcare professionals, patients, their relatives and the population, and shows that there is a willingness to strife for a minimal restrictive environment for the patients. From our view, this is a very positive development and fosters hope that we can successfully improve the situation for our patients and psychiatry now and in the future.

AUTHOR CONTRIBUTIONS

CH wrote the first draft of the manuscript. AS critically revised the manuscript and provided important intellectual contributions. All authors have read and approved the final version.

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ORIGINAL RESEARCH
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Comparing Attitudes to Containment Measures of Patients, Health Care Professionals and Next of Kin

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Background: In clinical psychiatric practice, health care professionals (HCP) must decide in exceptional circumstances after the weighing of interests, which, if any, containment measures including coercion are to be used. Here, the risk for patients, staff, and third parties, in addition to therapeutic considerations, factor into the decision. Patients' preference and the inclusion of relatives in these decisions are important; therefore, an understanding of how patients and next of kin (NOK) experience different coercive measures is crucial for clinical decision making. The aim of this study is to compare how patients, HCP, and NOK assess commonly used coercive measures.

Methods: A sample of 435 patients, 372 HCP, and 230 NOK completed the Attitudes to Containment Measures Questionnaire (ACMQ). This standardized self-rating questionnaire assessed the degree of acceptance or rejection of 11 coercive measures.

Results: In general, HCPs rated the coercive measures as more acceptable than did NOK and patients. The largest discrepancy in the ratings was found in regard to the application of coercive intramuscular injection of medication (effect size: 1.0 HCP vs. patients). However, the ratings by NOK were significantly closer to the patients' ratings compared to patients and HCP. The only exception was the acceptance of treatment in a closed acute psychiatric ward, which was deemed significantly more acceptable by NOK than by patients. Also, patients who had experienced coercive measures themselves more strongly refused other measures.

Conclusion: Patients most firmly rejected intramuscular injections, and the authors agree that these should only be used with reservation considering a high threshold. This knowledge about the discrepancy of the ratings should therefore be incorporated into professional training of HCP.

Keywords: containment measures, coercive measures, coercion, fixation, intramuscular injection, mechanical restraint, physical

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INTRODUCTION

The implementation of coercive measures presents a major challenge for health care professionals (HCP). HCP face the dilemma of being responsible for safety while at the same time being obligated to promote therapy and take into account the self-determination and free will of the patient (1). Conversely, patients experience coercive measures as a "distinct negative incident" (2) and frequently as a traumatizing one (3). Coercive measures are usually applied to avert destructive actions against oneself, other patients, or staff. Aggression, especially assault of third persons, disorganization, and agitation, are common catalysts for coercive measures (4–7). Moreover, HCP often see the therapeutic effects of coercive measures (2, 8). Overall, the literature shows that some HCP see coercive measures as a necessary "emergency break" (9). However, several studies have demonstrated the negative effects of coercive measures, which have an unfavorable impact on the therapeutic relationship (10–13). In general, coercive measures lead to lower treatment satisfaction (14), reduce the effectiveness of the therapy (15), and prolong the duration of inpatient treatment (16). Still, it must be assumed that this is at least partly due to the fact that patients, especially those who experience coercive measures, often suffer from serious mental illness (17).

Coercive measures are exercised on a significant number of patients with strong differences between and within countries (18–20). In many countries, coercive measures are applied to 10–20% of all psychiatric inpatients (21–23). Significantly higher rates are reported in samples from other countries (19). In China, for example, 51.3% of all inpatients experienced coercive measures during their treatment; however, it must be noted that these international differences are related to variance in national legislation (20). Nonetheless, culture-specific attitudes and therapeutic approaches may also play a role in these major differences. In addition to differences in the absolute frequency of implementation between countries, the type of coercive measure applied also varies (23, 24). For example, in Germany, patients are more likely to be subject to mechanical restraint (23), a measure that is rarely used in English-speaking countries (25). In these countries, it is more common to physically restrain patients (26). Some countries, such as Switzerland (27) or the Netherlands (23), have high rates of seclusion.

Generally, a differentiation can be made between more and less invasive coercive measures. Measures, such as PRN (*pro re nata*) medication, observation, and time-out, are considered less invasive and are therefore preferable to the more invasive measures (28–30). However, particularly with violent patients, measures that more strongly limit personal freedom, including physical restraints, seclusion, and forced medication, may become inevitable (31).

Yet, the decision as to which of these more invasive measures is used is not rationally derivable but subject to the traditions of psychiatric clinics as well as legislation (22, 32). Researchers have pointed out that the patient's preference, often dependent on their previous experience with coercive measures, should be considered (33). Perceived coercion is an important mediating factor in the acceptance of coercive measures and is therefore, indirectly, responsible for the treatment outcome (34). When a higher level of coercion is perceived, patients feel powerless and inferior, and HCP suffer more guilt (35). These diverse perspectives provide context as to why the individual measures are perceived differently in various groups. Different perceptions of patients and HCP have been described in studies, especially in regard to forced intramuscular medication. While HCP were found to be more in favor of this measure, patients strongly rejected it (33, 36). Thus, it could be shown that patients who have experienced forced medication (orally or intramuscularly administered) also evaluated the treatment negatively 3 months later (disapproval of treatment) (37). A greater frequency of using forced medication also correlated with an increased negative evaluation of coercive measures (38). Differing ratings are also a factor in other forms of coercive measures. For example, patients have a significantly more negative assessment of the closed door of psychiatric wards than do HCP (39).

The involvement of NOK concerning the decision for coercive measures is considered standard today (40) (SAMW guideline). Research on ratings of coercive measures, however, is nearly non-existent. Ranieri et al. (41) showed that involuntary admission is perceived as less restrictive by NOK than by patients. This suggests that differences between NOK and patients in the ratings of specific coercive measures are to be expected.

In summary, there are varying perspectives, roles, and emotions of patients, HCP, and NOK regarding containment, especially coercive measures (2, 42–44). The acknowledgment of these differing attitudes is important for the therapeutic relationship and thus the treatment. The aim of this study is to highlight this very area of conflict, and the knowledge gained will be used to develop a better understanding to improve dialogue with patients (45, 46) and the training of HCP (44). Over time, such improvements could help reduce the stigma of psychiatry (10) and psychiatric clinics as safeguarding institutions (47).

Based on the cited literature and the previously mentioned considerations, we expect that HCP will generally show a higher acceptance of all coercive measures. Patients, however, will be more likely to reject coercive measures. We also expect that NOK will reject coercive measures less often than patients but more often than the HCP. In addition, we expect that the 3 samples will differ widely in their attitudes toward forced medication in particular. Patients who have experienced such a measure should, according to Dack, Ross, and Bowers (38), also evaluate other highly coercive measures more negatively.

METHOD

Data Collection, In- and Exclusion Criteria, Ethics, and Anonymization

The study was conducted with 3 samples (patients, HCP, NOK) at 3 Swiss sites, i.e., the University Hospital of Psychiatry Zurich (Canton of Zurich), the Psychiatric Hospital Malévoz (Monthey, Canton of Valais), and the Hospital of Psychiatry Münsingen (Canton of Bern). The study included all patients with sufficient verbal communication necessary to understand the questionnaire and give informed consent.

A study nurse instructed the patients how to complete the questionnaire. The anonymization of the patient questionnaires took place after entering the data. HCP (mental health nurses, physicians, and psychologists) completed the questionnaire anonymously during working hours. NOK were contacted by mail, or directly if one of their relatives was hospitalized in one of the 3 clinics during the study period. The NOK questionnaire was sent to NOK and additionally asked for age and relationship to the treated relative. Due to the anonymization, a direct connection of NOK questionnaires to patient questionnaires was not possible.

The cantonal Ethics Commission Bern (Ref.-nr. KEK-BE: 2015-00074) reviewed and approved the study. This approval was binding for all survey sites.

Sample

The study was carried out among patients, NOK, and HCP on psychiatric acute wards of the 3 psychiatric hospitals mentioned above using unselected samples. Overall, data from 1,037 study participants was included. A minority of the participating patients was compulsory admits (20.6%).

Of the NOK, 38.2% were parents of the patients ($N = 84$), 9.5% were children of the patients ($N = 21$), 13.2% were siblings ($N = 29$), 22.3% partners ($N = 49$), 16.8% other related persons ($N = 37$), and 10 were missing this specification. The HCP group consisted of 66.4% nurses ($N = 243$), 25.1% physicians ($N = 92$), and 8.5% psychologists ($N = 31$). There were 6 HCP responses that lacked specific occupational data. For more details, see **Table 1**.

ACMQ

The Attitudes to Containment Measures Questionnaire (ACMQ) is a self-rating paper-and-pencil questionnaire that has been validated (38) and used in several publications from different countries, and thus from different cultures (24, 25, 28, 30, 39, 48–55). One disadvantage of the ACMQ is that it also collects data on coercive measures that are uncommon or not used at all in Switzerland, such as the net bed.

The 11 main items of the ACMQ have a uniform structure. The specific coercive measure is briefly described and illustrated by a picture, then the participant of the study is asked how acceptable the measure is on a 5-point Likert scale [strongly agree (0) to strongly disagree (5)]. A high value means a high rejection or, respectively, a low acceptance. For each item, the patients were also asked whether they had already experienced this measure. HCP study participants were asked if they had already executed the specific containment measure. In NOK, we inquired as to whether this measure had been administered to their kin. The ACMQ encompasses the following coercive measures: PRN medication, physical restraint, intermittent observation, seclusion, time-out, compulsory intramuscular medication, psychiatric intensive care, mechanical restraint, constant observation, net bed, and open area seclusion.

Statistical Analyses

The statistical analysis was done using SPSS Version 24. Statistical analyses were carried out using standard procedures. Arithmetic means of items were compared using *t*-test for independent samples. The test results were checked for multiple testing by Bonferroni corrections, and the quantification of the differences was determined by effect sizes. In this connection, the pooled standard deviations of the respective group results were taken into account. Due to missing data, there were minor deviations of the number of questionnaires in individual analyses.

Regarding patients, it was distinguished whether they had experienced a coercive measure themselves. Furthermore, the results of compulsory admitted patients were compared to patients treated on a voluntary basis. Whether a patient had never experienced or had experienced at least one of the highly restrictive coercive measures in the past would cause differences in their rating of the measures.

RESULTS

Comparing the Results of Patients, HCP and NOK

The group analysis showed a notable trend. The degree of rejection of all measures was higher among patients than NOK, and higher among NOK than HCP. The general pattern of which coercive measure was rejected the most did not differ between the three groups. All groups rejected the net bed the most, all groups ranked mechanical restraints as the second most unfavorable measure, with seclusion as the third. The biggest difference with respect to the ranking was seen in regards to compulsory intramuscular medication. While it was ranked as the fourth most unfavorable measure by patients and NOK, it was ranked eighth by HCP.

This result was confirmed by analysis of the quantitative differences in the assessments of the individual measures between the groups. Compulsory intramuscular medication produced the largest effect size and thus the largest differences in direct comparison between HCP and patients and between HCP and NOK. The comparison between NOK and HCP also shows that seclusion and mechanical restraint are rated differently. Acceptance of treatment on a locked acute ward is the only measure that shows no significant difference between HCP and NOK. The differences between NOK and patients are small on average: A medium effect size was found only for treatment on

TABLE 1 | Sample.

	N (total)	*N* (Mu)	*N* (Mo)	*N* (Zu)	Age (ys)	SD	Female (%)
Patients	435	97	236	102	40.7	13.3	46.1
HCP	372	146	114	112	37.6	11.7	60.4
NOK	230	99	63	68	49.3	16.1	58.4
Total	1,037	342	413	282	42.0	14.1	53.9

Mu, Psychiatric Hospital of Muensingen; Mo, Psychiatric Hospital of Monthey; Zu, University Hospital of Psychiatry Zurich; HCP, health care professionals; NOK, next of kin.

an acute closed ward, as NOK rated this measure as significantly more acceptable (see **Table 2**; **Figure 1**).

Subanalyses of the Patient Sample

Patients admitted on a compulsory basis tended to rate coercive measures as less acceptable than voluntarily hospitalized patients. The strongest effect sizes were found for physical restraint and compulsory intramuscular medication (see **Table 3**).

Patients who experienced at least one strongly restricting coercive measure (physical restraint, seclusion, compulsory intramuscular medication or mechanical restraint; $N = 38$, 34.7%) rated the coercive measures as less acceptable compared to patients who had not experienced coercion ($t = 3.15$, $p = 0.002$). The effect size (ES) of this difference was 0.33. Significantly higher rejections were found for PRN medication ($t = 2.29$, $p = 0.023$, ES 0.26.), physical restraint ($t = 3.14$, $p = 0.002$, ES 0.32), compulsory intramuscular medication ($t = 2.89$, $p = 0.004$, E. 0.31), mechanical restraint ($t = 2.10$, $p = 0.037$, ES 0.22) and the network bed ($t = 2.36$, $p = 0.019$, ES = 0.25). After the Bonferroni correction, only physical restraint and coercive medication were statistically significant. If this analysis is limited in line with Dack et al. (2) to patients who had experienced a compulsory intramuscular medication, a virtually identical result is obtained (mean value of all measures $t = 2.98$, $p = 0.003$, ES = 0.35).

TABLE 2 | Attitudes toward containment measures: mean ratings of patients, health care professionals, and next of kin.

	Patient (N = 435)		Health care professionals (N = 372)		Next of kin (N = 230)		Patients vs. health care professionals		Patients vs. next of kin		Health care professionals vs. next of kin	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**	***t***	***p*-corr**	***t***	***p*-corr**	***t***	***p*-corr**
Pro re nata medication	1.81	0.99	1.30	0.52	1.91	0.89	9.31	< 0.001	−1.32	n.s.	−9.46	< 0.001
Physical restraint	2.74	1.27	2.12	0.90	2.65	1.03	8.05	< 0.001	1.02	n.s.	−6.35	< 0.001
Intermittent observation	2.04	0.99	1.36	0.60	1.76	0.65	11.78	< 0.001	4.33	< 0.001	−7.63	< 0.001
Seclusion	3.08	1.31	2.49	1.16	3.05	1.09	6.74	< 0.001	0.35	n.s.	−5.83	< 0.001
Time-out	2.36	1.14	1.66	0.77	2.10	0.84	10.37	< 0.001	3.33	0.011	−6.59	< 0.001
Compulsive intramuscular sedation	3.07	1.34	2.03	0.76	2.72	1.08	13.70	< 0.001	3.55	0.005	−8.52	< 0.001
Psychiatric interinsic care	2.69	1.21	2.29	1.14	2.24	1.10	4.75	< 0.001	4.82	< 0.001	0.57	n.s.
Mechanical restraint	3.51	1.27	3.13	1.18	3.65	1.14	4.34	< 0.001	−1.42	n.s.	−5.26	< 0.001
Constant observation	2.40	1.08	1.72	0.80	2.04	0.85	10.17	< 0.001	4.70	< 0.001	−4.60	< 0.001
Net bed	4.10	1.11	4.22	0.94	3.94	1.00	−1.71	n.s.	1.87	n.s.	3.51	0.006
Open area seclusion	2.54	1.10	2.47	1.12	2.21	0.85	0.87	n.s.	4.28	< 0.001	3.23	0.016
Mean (all items)	2.76	0.75	2.26	0.48	2.57	0.57	11.51	< 0.001	3.66	0.003	−7.00	< 0.001

n.s., not significant; p-corr, p-values are Bonferroni corrected.

DISCUSSION

According to our hypothesis, patients and NOK consistently rejected all coercive measures more strongly than HCP. The latter presumably consider the potential benefits of these measures more often and feel responsible for preventing harm to other patients and themselves. The low values for HCP may also be seen as a justification for their own behavior.

When viewing the ranking of the ratings over the absolute assessment values of the measures, all three study groups show an identical ranking order for the three items with the highest rating. In line with several publications (29, 30, 54), Swiss patients, NOK, and HCP most clearly rejected the net bed. This measure is not applied in Switzerland and is likely, as in Finland, perceived as "inhumane and cruel" (28). Mechanical restraints and seclusion were rejected second- and third-most by all groups. In contrast to the net bed, these measures are widely used in German-speaking countries. Patients preferred pro re nata medication, physical restraint, psychiatric intensive care and constant observation to compulsive intramuscular injection. In some situations, intramuscular medication may be difficult to avoid. However, in respect to the results of our study, clinicians should evaluate whether less aversive measures, such as pro re nata medication, psychiatric intensive care and constant observation can be used in its place. In other cases, injection might be prevented by steps, such as changing the culture or atmosphere of the ward. Notably, compulsive intramuscular injection was preferred by the patients to mechanical restraint. These two measures are often combined in clinical practice. Clinicians should in these cases also evaluate whether mechanical

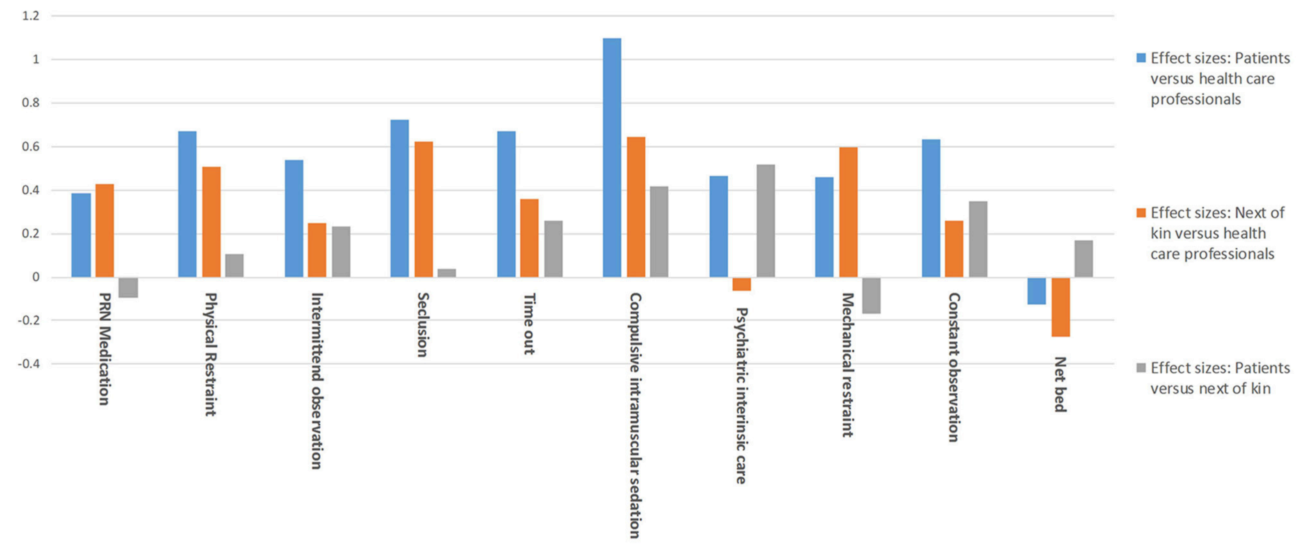

FIGURE 1 | Effect sizes: comparing ratings of patients, health care professionals, and next of kin.

TABLE 3 | Comparing ACMQ ratings of voluntary vs. compulsorily admitted patients.

	Voluntary admitted (*N* = 352, 81.1%)		**Complusorily admitted (*N* = 82, 18.9%)**		**Statistics**			
	Mean	**SD**	**Mean**	**SD**	***t***	***p***	***p*-corr**	**ES**
Pro re nata medication	1.74	0.94	2.14	1.12	−2.97	0.004	0.044	0.39
Physical restraint	2.61	1.21	3.32	1.38	−4.28	<0.001	<0.001	0.55
Intermittent observation	1.99	0.95	2.25	1.15	−1.89	n.s.	n.s.	0.25
Seclusion	3.07	1.31	3.15	1.33	−0.50	n.s.	n.s.	0.06
Time-out	2.31	1.11	2.59	1.24	−1.97	0.049	n.s.	0.23
Compulsive intramuscular sedation	2.95	1.31	3.57	1.35	−3.77	<0.001	0.002	0.46
Psychiatric interinsic care	2.67	1.18	2.78	1.29	−0.70	n.s.	n.s.	0.08
Mechanical restraint	3.43	1.27	3.86	1.20	−2.79	0.006	n.s.	0.35
Constant observation	2.34	1.02	2.68	1.26	−2.23	0.028	n.s.	0.29
Net bed	4.04	1.14	4.34	0.98	−2.20	0.028	n.s.	0.28
Open area seclusion	2.45	1.03	2.90	1.27	−2.99	0.003	0.042	0.39
Mean (all items)	2.69	0.73	3.06	0.78	−4.08	<0.001	0.001	0.49

ACMQ, Attitudes to Containment Measures Questionnaire; n.s., not significant; p-corr, p-values are Bonferroni corrected.

restraint can be at least avoided by applying compulsory injection only.

The largest rating differences between HCP and patients surround compulsory intramuscular injection of medication. With an effect size >1, this difference may be related to the conviction of HCP that intramuscular injection of medication is therapeutically necessary (5). The focus of HCP on applying treatment interventions rather than mere security measures explains these beliefs. Still, there is a risk that HCP use these measures with a relatively low threshold and thus insufficiently consider their negative effects, namely the deterioration of the therapeutic relationship due to disapproval of coercion by patients (37). Additionally, the therapeutic effect of a compulsory medication could not be verified by evidence (26), and that medication is frequently used for temporary control of behavior (3).

In accordance with Dack et al. (38), we observed that patients who were medicated against their will had more negative attitudes toward all coercive measures. The differing ratings of the patients, as well as the ratings of all measures taken together, show that such an act has high costs. Therefore, HCP must avoid this intervention whenever possible.

More than a third of all coercive measures are triggered by a HCP-patient interaction (47). Consequently, the use of compulsory medication is preventable in advance. Solutions may include greater sensitivity to the use of informal coercion, which may represent a precursor of coercive measures and lead to disruptions in the therapeutic relationship (56). Reducing the consequences of coercive measures could include debriefing of events, which in Switzerland is considered standard (40) (SAMW guideline). Clinicians should actively seek patient perspectives on compulsory medication retroactively to minimize secondary negative impact. The reduction of perceived coercion should always be an objective while administering coercive measures to reduce negative effects within the therapeutic relationship. Clinicians can achieve this through transparent communication, choices concerning coercive measures, sound justification for these measures, and respect for the patients' perspectives (31, 57).

Patients who were admitted compulsorily were more likely to show a negative attitude toward coercive measures, which concurs with numerous publications (5, 12). The main reason for these negative attitudes may be the acute illness of compulsory patients at the beginning of their treatment (19). Unfortunately, our results could not differentiate whether patients had a negative attitude before beginning their treatment, if a negative stance to psychiatric treatment causes their negative attitude, or if they acquired their attitude after experiencing involuntary admission.

In general, NOK reject coercive measures significantly less strongly than do patients. This result is consistent with Ranieri et al. (41). This likely stems from NOK approval toward coercive treatment conducted for the wellbeing of their relatives. They often find themselves caught in an ambivalent position, as they simultaneously want to avoid patient suffering from restricted autonomy and freedom of movement. In absolute terms, however, NOK displayed ratings much closer to those of patients. It is noteworthy that the treatment on the locked acute ward is the only item that did not differ between NOK and HCP while also showing a significant difference between NOK and patients. Taken together, although in favor of treatment on the acute ward, NOK are critical of the concrete measures. In other words, they agree that their relatives must be treated, but not on the methods of treatment. Considering the essential role of NOK in patient care, especially of seriously ill psychiatric patients, it is vital to actively include NOK after administering coercive measures (58).

In summary, we can conclude that our study has several limitations and strengths. One such shortcoming is the relatively low participation rates of NOK and patients. In particular, patients treated with coercive measures often refused participation in the study. Further, data collection was done after stabilization; however, it did occur during treatment on acute wards. It is possible that residual symptoms and the patient's own experiences influenced the results. The main strength of our study is, according to our literature review, that it is the first to examine ratings of containment measures by NOK, HCP, and patients comparatively. In addition, the large sample allows for high statistical power and the detection of medium effects.

AUTHOR CONTRIBUTIONS

PM: translation, editing, and writing; SB: research, data collection, and writing; TR and MJ: research design, data analysis, and writing; GK and PP: data collection, writing, and analysis; EB and FH: data collection and analysis.

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Compulsory Psychiatric Admissions in an Italian Urban Setting: Are They Actually Compliant to the Need for Treatment Criteria or Arranged for Dangerous Not Clinical Condition?

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Background: Italy was one of the first European countries adopting the need for treatment criteria for compulsory admission (CA). The aim of the present study was to confirm whether CA in an urban setting in Italy was compliant with the requested clinical criteria.

Methods: In this retrospective observational study, we retrieved all collected information regarding CA in Turin (Italy) from January 2006 to December 2013. All content and data reported in the CA forms, including diagnosis and clinical details, were gathered and analyzed. Comparisons between CA with and without a diagnosis of DSM-IV psychiatric disorders and between different diagnoses were performed using either parametric or non-parametric tests, depending on variable distribution.

Results: Three hundred and two (10.5%) of 2,870 consecutive CAs made in Turin during a lag time of 8 years were due to unknown psychiatric diagnoses (113; 3.9%) or to psychomotor agitation (189; 6.6%). The most prevalent psychiatric disorders leading to CA were schizophrenia (729; 25.4%), brief psychotic disorder (627; 21.8%), bipolar disorder episode (396; 13.8%), delusional disorder (292; 10.2%), and personality disorder (237; 8.3%). The CAs due to psychiatric disorder were longer ($U = 328,875.0$; $p < 0.001$) and involved patients who were more likely to be compulsorily admitted during the study period ($U = 357,012.5$; $p = 0.003$), to have had prior contact with a psychiatrist [$\chi^2_{(2)} = 28.34$; $p < 0.001$], to have had previous admissions to a psychiatric ward [$\chi^2_{(2)} = 33.06$; $p < 0.001$], to be under the care of psychiatric services [$\chi^2_{(3)} = 87.01$; $p < 0.001$], and not to have concurrent alcohol [$\chi^2_{(1)} = 23.06$; $p < 0.001$] and/or drug use [$\chi^2_{(1)} = 12.97$; $p < 0.001$] than those due to psychomotor agitation/unspecified diagnoses.

Conclusion: Despite a history of 35 years of CA made according to a strict need for treatment criteria, the evaluation of CA records shows that a certain proportion of

CAs appears to have been due to brief, not psychiatric, alcohol/drug related behavioral conditions. Further studies should confirm the need for law reform leading to the integration between the need for treatment and the danger criteria for CAs.

Keywords: involuntary hospitalization, compulsory admission, social control, need for treatment, mental health, legislation, Italy

INTRODUCTION

In Europe, Italy is one of the few countries, together with Spain, Sweden and Switzerland, in which compulsory psychiatric admission (CA) can be arranged only when the need for treatment criteria are met (1–6). Most other countries also consider certain danger criteria, with a considerable variability, from potential danger to oneself and others (e.g., France, Germany, Austria, and the Netherlands) to unacceptability for the community (Ireland and Cyprus) (1–6). As argued previously (1), the introduction of the need for treatment criteria for CA aimed to improve the psychiatrist–patient relationship with respect to community health, declining the concept of legal obligation to punish individual behavior and to protect society. According to the still-valid Italian mental health reform (Law no. 180) passed in 1978 (7), psychiatric patients have the right to be treated as well as patients with any other disorder; thus, in daily psychiatric practice, their illness should be managed using only voluntary treatments. However, in the case of particular clinical urgency, hospitalization may be implemented in a compulsory manner in order to improve treatment outcome and functional recovery. To defend, as much as possible, the need for treatment criteria, the law of establishment of the Italian National Health Service (Law no. 833) (8) imposed that a CA in Italy needs an initial clinical assessment by any medical doctor, and subsequently by a medical doctor of the Italian National Health Service, who must confirm the presence of all three of the following criteria: (a) the patient shows mental changes requiring an urgent therapeutic intervention; (b) the patient does not accept the treatment; (c) there are no conditions enabling doctors to take other timely and adequate therapeutic measures outside those achieved in a hospital. Moreover, the CA must be formally authorized by the mayor of the municipality where the patient lives and can only be undertaken in acute psychiatric wards located in public general hospitals. The maximum duration of initial involuntary placement in Italy is 7 days, one of the shortest among European countries (that ranges from a 3-day treatment period in a state of Switzerland to a 9-month one in Finland) (1–4), which can be subsequently reconfirmed for a further 7 days and so on while the criteria persist (8, 9). Lastly, it should be taken into account that CA criteria were included in the Law no. 833 in the section and clauses dedicated to the mental health (Articles 33, 34, and 35) (8). Thus, CA criteria were designed to manage only psychiatric conditions so much so that local health authorities subsequently released CA forms including a diagnosis field in order to specify the psychiatric clinical condition requiring the urgent therapeutic intervention.

Therefore, we can deduce that involuntary psychiatric admission in Italy should be related to a clinical condition that should be explicitly stated as a psychiatric diagnosis, and cannot be the consequence of behavioral manifestations that are unacceptable for the community (e.g., aggressive or hostile behavior, risk to self or others, or other dangerous behaviors).

Such early introduction and close attention to need for treatment criteria for CA in Italian mental health legislation, suggest a unique opportunity to evaluate the outcome of this health-oriented approach in patients affected by mental disorders.

The present study aimed to evaluate whether data collected during CA were informative for the actual clinical condition, according to the requested criteria provided by Italian law. As a secondary purpose, we aimed to compare patients who underwent CA due to psychiatric clinical disorders or due to other conditions, in terms of gender, age, state of birth, length of stay, comorbid alcohol/substance use disorder, previous CAs, and previous contact with mental health services.

MATERIALS AND METHODS

In this retrospective observational study, we retrieved all collected information regarding CA in Turin, Italy, from January 2006 to December 2013, by consulting the registry of the *ufficio TSO* [compulsory treatment office] of Turin, Italy. Consistent with the original CA forms, the registry record provided patient sociodemographic data (i.e., name, surname, date of birth, residence address, and responsible service) and CA details (i.e., start and end date, requested criteria, place of admission, diagnosis, and clinical observation). All data were managed in an anonymous manner, according to Local Ethical Committee compliance (notification no. 3/2016; protocol no. 001804).

To test the compliance with the Italian law concerning CA, diagnosis according to DSM-IV-TR codification was determined by searching for specific disorder keywords in the proper field of the registry record, which in turn corresponds to the same field of the CA form filled in by medical doctors during the clinical examination. The results of this search were collected according to DSM-IV-TR codification main categories (e.g., 295.xx for schizophrenia, 296.xx for bipolar disorder, etc.). To address the occurrence of a dual diagnosis, psychiatric disorders took priority over alcohol/drug use disorders in the diagnosis field, but the possible co-occurring alcohol and/or drug use were collected as two separate and dichotomous (yes/no) variables. Diagnoses that were not compliant with the DSM-IV-TR classification were collected as they were written in the diagnosis field of the original admission form.

The length of CA was calculated using start and end dates.

Statistical Analysis

All data collections and calculations were performed using the IBM SPSS Statistics for MACOS package (Version 22.0, IBM Corporation, Armonk, NY, USA).

The annual rate of CA is expressed as the number of CAs per year per 100,000 inhabitants, using Turin population data provided by the Municipality of Turin City.

Comparison between CAs due to any DSM-IV-TR psychiatric disorder and those due to other conditions (i.e., psychomotor agitation or unspecified diagnoses) for categorical variables was performed using Pearson's χ^2 or Fisher's exact tests, depending on the expected frequencies in each group. The adjusted residuals were calculated to allow the *post-hoc* analysis of 2 × N crosstabs. Continuous variables were evaluated using either an unpaired t-test or a Mann–Whitney non-parametric U-test, depending on whether the distribution of variables was normal or non-normal, as determined by the Shapiro–Wilk test.

Association between categorical data and each DMS-IV-TR psychiatric diagnosis was tested using Pearson's χ^2 or Fisher's exact tests, depending on the expected frequencies in each group.

Probability tests were considered bilateral, with a type I error set at 5% ($p = 0.05$). p-values resulting from multiple comparisons were adjusted according to Bonferroni's correction, in order to control family error rate.

RESULTS

Data from 2,870 records, corresponding to the same amount of CAs, were collected. The mean number of CAs per year per 100,000 inhabitants was 39.8 ($SD = 3.03$; **Figure 1**).

According to the diagnosis field content, 2568 (89.5%) CAs were due to psychiatric conditions described in the DSM-IV-TR, 189 (6.6%) were due to psychomotor agitation, and 113 (3.9%) had an empty diagnosis field, and thus were considered unspecified diagnoses.

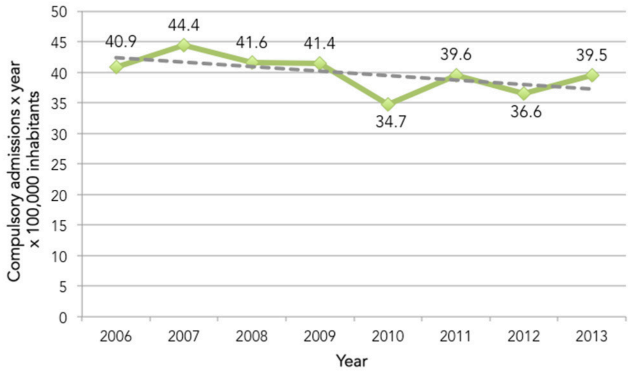

FIGURE 1 | Number of compulsory admissions per year per 100,000 inhabitants in Turin.

The most prevalent DSM-IV-TR psychiatric diagnoses were schizophrenia, brief psychotic disorder, bipolar disorder, delusional disorder, and personality disorder (**Figure 2**). These diagnoses were followed by psychomotor agitation and unspecified diagnoses, which reached a higher prevalence than the remaining DSM-IV-TR psychiatric disorders (i.e., major depressive disorder, alcohol use disorder, mental retardation, delirium, drug use disorder, vascular dementia, and anorexia nervosa).

With respect to addictive disorders, 70 (2.4%) and 17 (0.6%) were due to alcohol and drug use disorder, respectively. However, concurrent use of alcohol or drug was found in, respectively, 232 (8.1%) and 233 (8.1%) CAs.

Results of the comparison between CAs due to any DSM-IV-TR psychiatric disorder and those due to psychomotor agitation or unspecified diagnoses are reported in **Table 1**. CAs due to a psychiatric disorder were longer than those due to psychomotor agitation/unspecified diagnoses. Patients compulsorily admitted for psychiatric disorders were more likely to have had previous admissions to a psychiatric ward, to be compulsorily admitted during the study period, to have had prior contact with a psychiatrist, to be under the care of psychiatric services, and not to have concurrent alcohol and/or drug use than those admitted for psychomotor agitation or unspecified diagnoses.

The comparison between different diagnoses for all data collected is reported in **Supplementary Table 1**. CAs due to schizophrenia, bipolar disorder, and personality disorder were strongly associated with previous contact with a psychiatrist [schizophrenia, $\chi^2_{(2)} = 65.13$, $p < 0.001$; bipolar disorder, $\chi^2_{(2)} = 16.17$, $p < 0.001$, and personality disorder, $\chi^2_{(2)} = 19.13$, $p < 0.001$], prior admission to a psychiatric ward [schizophrenia, $\chi^2_{(2)} = 28.57$, $p < 0.001$; bipolar disorder, $\chi^2_{(2)} = 8.50$, $p = 0.014$, and personality disorder, $\chi^2_{(2)} = 11.05$, $p = 0.004$], and being under the care of psychiatric services [schizophrenia, $\chi^2_{(3)} = 153.71$, $p < 0.001$; bipolar disorder, $\chi^2_{(3)} = 9.02$, $p = 0.020$, and personality disorder, $\chi^2_{(3)} = 9.25$, $p = 0.031$]. However, only the CAs due to personality disorder were associated with alcohol [$\chi^2_{(2)} = 52.56$, $p < 0.001$] and substance use [$\chi^2_{(2)} = 76.38$, $p < 0.001$]; whereas those due to schizophrenia and bipolar disorder were significantly related to the absence of these two conditions [alcohol use: schizophrenia, $\chi^2_{(1)} = 40.57$, $p < 0.001$; bipolar disorder, $\chi^2_{(2)} = 5.77$, $p = 0.016$ and substance use: schizophrenia, $\chi^2_{(2)} = 14.59$, $p < 0.001$; bipolar disorder, $\chi^2_{(2)} = 8.97$, $p = 0.003$].

Both CAs due to delirium and mental retardation were more likely to lack information regarding previous contact with a psychiatrist [delirium, $\chi^2_{(2)} = 14.76$, $p = 0.001$ and mental retardation, $\chi^2_{(2)} = 12.20$, $p = 0.005$], but only the former were more likely to be associated with inadequate information concerning previous admission to a psychiatric ward [$\chi^2_{(2)} = 11.95$; $p = 0.002$].

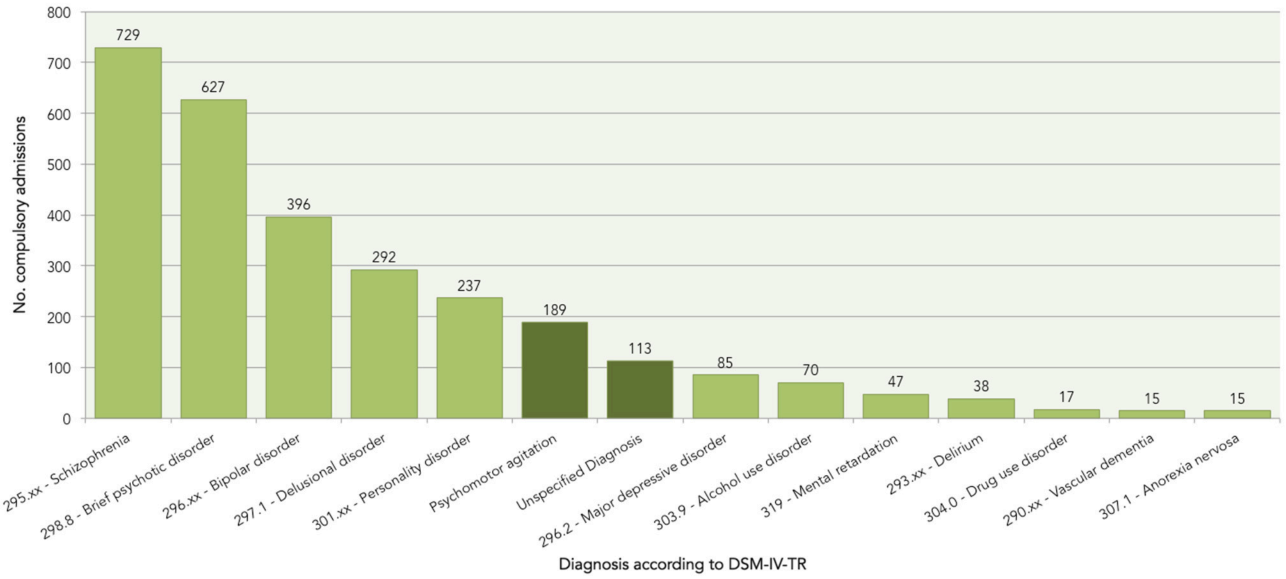

FIGURE 2 | Prevalence of DSM-IV-TR psychiatric disorders and other conditions according to the diagnosis field of the compulsory admission form.

CAs due to major depression disorder were significantly related to not having had previous contact with a psychiatrist [$\chi^2_{(2)} = 21.61$; $p < 0.001$] and not having had prior admission to a psychiatric ward [$\chi^2_{(2)} = 9.53$; $p = 0.009$]; however, these were significantly associated with alcohol use [$\chi^2_{(2)} = 6.61$; $p = 0.010$].

DISCUSSION

According to the present study, CAs arranged in a lag of time of 8 years in the main city of northwest Italy were compliant to the Italian law though they were not always informative for the actual psychiatric condition requiring an urgent therapeutic intervention, inasmuch as more than a tenth of them was arranged for episodes of psychomotor agitation or unspecified disorders.

Contrary to other reports related to shorter and previous period of observation, the present study found a downward trend in the annual rate of CA (10–14). This might be interpreted as a real reduction of the CA rate in the last period but it should be considered with caution taking into account the main limitation of the present study, i.e., the low generalizability of results due to single urban center design.

However, it is noteworthy that a total of 302 (10.5%) CAs appear not to have been due to an actual psychiatric disorder, but likely to any mental change requiring an urgent therapeutic intervention that did not meet the DSM-IV-TR diagnostic criteria for a psychiatric disorder.

Whilst unspecified diagnosis could be explained not only by the actual lack of a psychiatric disorder diagnosis but also by other conditions (e.g., an error filling out the form, dangerous behavior not provided for by law, early stage of unclear psychiatric condition), psychomotor agitation could only be seen as the attempt to code a behavioral condition requiring urgent intervention in absence of actual psychiatric disorder. As a matter of fact, psychomotor agitation is a symptom and it is not necessarily a manifestation of a psychiatric disorder because it could occur in different non-psychiatric conditions (e.g., reactions to life events, drugs side effects, within a septic or other underlying organic disease, etc.) but if the medical doctor had been able to make a psychiatric diagnosis during the assessment he/she would not have indicated the agitation symptom only as a condition requiring urgent treatment. Moreover, as far as we concerned, a mental change requiring urgent hospitalization is likely to be covered by DSM-IV-TR classification.

Therefore, despite a specific law developed to preserve the need for treatment principle for CA including an informative proposal, acknowledged approval, and mayor of municipality authorization, some of these CAs still appear to have been due to a behavioral manifestation that was not properly related to a clinical psychiatric condition. To the best of our knowledge, no similar findings have been previously published.

Comparison of CAs due to any psychiatric disorder with those arranged for psychomotor agitation or unspecified diagnoses revealed that the latter had a higher rate of concurrent alcohol or substance use, lower rates of previous contact with psychiatric services previous admission to a psychiatric ward, and a shorter duration of involuntary hospitalization. Consistently, a recent study by Habermeyer et al. (4) reported that substance use disorder was the second most prevalent diagnosis in involuntary admitted patients in Switzerland. In line with our results, they also found that involuntary admissions due to substance use disorders had a shorter duration of stay and were more likely due to intoxication. Furthermore another study conducted in Norway

TABLE 1 | Comparison of compulsory admissions due to any DSM-IV-TR psychiatric disorder and those due to psychomotor agitation or unspecified diagnoses.

	DSM-IV-TR psychiatric disorder			
	Yes **2,568 (100%), AR**	**No** **302 (100%), AR**	χ^2 **(Df)**	***p***
Gender				
F	1,112 (43.3), 3	128 (42.4), −3	0.93(1)	0.761
M	1,456 (56.7), −3	174 (57.6), 3		
Place of birth				
Italy	2,227 (86.7), 6	258 (85.4), −6	0.39(1)	0.584
Other country	341 (13.3), −6	44 (14.6), 6		
Any previous contact with a psychiatrist				
Yes	1,998 (77.4), 5.3	192 (63.6), −5.3	28.34(2)	<0.001*
No	138 (5.4), −4.5	26 (8.6), 4.5		
NS	442 (17.2), −2.3	84 (27.8), 2.3		
Any previous admission to a psychiatric ward				
Yes	1,240 (48.3), 5.7	94 (31.1), −5.7	33.06(2)	<0.001*
No	129 (5.0), −2	16 (5.3), 2		
NS	1,199 (46.7), −5.6	192 (63.6), 5.6		
Under the care of psychiatric services				
Yes	1,436 (55.9), 6.3	111 (36.8), −6.3	87.01(3)	<0.001*
CNP	11 (0.4), −7.4	14 (4.6), 7.4		
No	188 (7.3), −1.0	27 (8.9), 1.0		
NS	933 (36.3), −4.5	150 (49.7), 4.5		
Alcohol use				
Yes	246 (9.6), −4.8	56 (18.5), 4.8	23.06(1)	<0.001*
No	2,322 (90.4), 4.8	246 (81.5), −4.8		
Substance use				
Yes	207 (8.1), −3.6	43 (14.2), 3.6	12.97(1)	<0.001*
No	2,361 (91.9), 3.6	259 (85.8), −3.6		
	Mdn (IQ)	**Mdn (IQ)**	**U**	***p***
Age at admission	41.9 (18.8)	39.8 (19.9)	351471.0	0.008
Number of compulsory admissions during the study	1(1)	1 (0)	357012.5	0.003*
Length of compulsory admission	5(4)	5(4)	328875.0	< 0.001*

*NS, Not specified; CNP, Child neuropsychiatry; AR, Adjusted residuals. *Statistically significant after Bonferroni correction (p < 0.004).*

by Hustoft et al. (15) recognized greater alcohol abuse and less severe psychiatric symptoms as the most important factors predicting a brief conversion from involuntary to voluntary hospitalization.

Taken together, our findings suggest that transient non-clinical conditions, often related to drug or alcohol use, may require (not necessarily) compulsory psychiatric intervention; therefore, a dedicated procedure to deal with these particular behavioral conditions should be provided in addition to compulsory psychiatric admission.

Bringing this into the need for treatment/danger criteria debate (1, 3, 16), it could be suggested that despite the extreme need for treatment orientation of the Italian psychiatric legislation (focused on psychiatrist–patient relationship and aimed at preserving the patient's state of health), certain dangerous conditions resulting from behavioral manifestation unrelated to psychiatric disorders (i.e., threat to self or others requiring an initial intervention by the law enforcement and not by the doctor) appear to require a specific intervention to be managed. This could be explained by the discrepancy between the strict need for treatment principle inspiring the early psychiatric reform proposed by Law no. 180 and the wider criteria provided by the subsequent executive Law no. 833, according to which patients with any mental change requiring urgent therapeutic intervention not applicable outside the hospital could be compulsory admitted.

Thus, the present findings highlight the need for a more comprehensive approach, similar to that adopted by the UK, Denmark, and Ireland (1–3), including the need for treatment criteria covering the more-frequent psychiatric clinical conditions and danger criteria that could be used during less-frequent but severe and dangerous behavioral manifestation, which also need to be addressed by both law enforcement and clinical intervention. Such a differentiation within the CA legislation could prevent the expected rise of patient stigmatization related to the danger criteria (17). Even more than, as recently confirmed (10), the adoption of danger criteria does not necessarily increase the rate of CA.

As regards secondary noteworthy findings, CAs due to severe psychiatric disorders such as schizophrenia, bipolar disorders and personality disorders seemed to have a higher burden on psychiatric services as patients diagnosed with these disorders had more prior hospitalizations, were more often under the care of psychiatric services and have had more previous contact with them. On the other hand, among these, personality disorders only seemed to be compulsory admitted with a concurrent use of alcohol and substances consistently with previous reports on co-occurrence between these two conditions(18, 19).

To the best of our knowledge, the present study is the first reporting that CAs due to major depressive disorder were significantly related to not having had previous contact with a psychiatrist and not having had prior admission to a psychiatric ward, suggesting that patients with this disorder are more likely to be involuntary hospitalized on the first episode. Future studies should be focused on details and conditions in which CAs due to major depressive disorder occur, taking into account also the specific severity indexes (e.g., suicidal tendencies or attempts).

Our findings are far from conclusive, especially when taking into account certain important methodological limitations. All data were concerned with the CAs of a single urban center; thus, are not representative of the entire Italian population. Moreover, these data were collected from a CA database that was not expressively designed for explicit research purposes. On the other hand, the particular context in which they come out (i.e., CA regulated by a so old and pioneering CA reform and long period of observation in a urban setting) makes them also relevant in contributing to depict the extremely heterogeneous framework of psychiatric involuntary treatment and thus in looking ahead to the drafting of a common procedure for CA able to protect right and health of both patient and community.

Therefore, our suggestion should be confirmed by further prospective observational multi-centric studies focused on CAs due to acute, non-psychiatric, alcohol-/drug-related dangerous conditions.

AUTHOR CONTRIBUTIONS

FO conceived and drafted the manuscript. AP collected the data. FO and EV performed the statistical analysis. RP, LO, SC, and PF participated in the design and coordination of the study. All authors read and approved the final manuscript.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyt.2018.00740/full#supplementary-material

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Characteristics of Psychiatric Emergency Situations and the Decision-Making Process Leading to Involuntary Admission

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Introduction: Involuntary admissions to psychiatric hospitals, regardless of their beneficial effects, violate the patients' autonomy. To keep such measures at a minimum and develop less restricting and coercive alternatives, a better understanding of the psychiatric emergency situations which end up in involuntary admissions is needed. This descriptive and exploratory study investigates the consultations leading to involuntary admission and the decision-making process of the referring physicians.

Methods: We developed an online questionnaire to collect data on the characteristics of the consultation leading to an involuntary admission, including influencing factors from the referring physicians‘ perspective, as well as their professional background. We included 107 physicians who completed the questionnaire after they had referred patients for involuntary admission to one major psychiatric hospital in Switzerland.

Results: The referring physicians were heterogeneous regarding their medical background and experience with psychiatric emergency situations. The consultations were time consuming and took place in various locations. Clinical findings, third-party anamnesis and a known psychiatric diagnosis contributed strongest to the decision to admit involuntarily. "Protection from danger to self" was named most frequently as purpose of the admission.

Discussion: This study emphasizes the variety of psychiatric emergency situations leading to involuntary admissions. In most cases, several parties are involved and influence the decision together with medical and social factors. To reduce the number of involuntary admissions, alternatives for patients with a high symptom load and at risk of harming themselves are needed. Possible approaches to achieve that reduction and recommendations for further research are provided.

Keywords: involuntary admission, psychiatric emergency situation, coercion, decision-making, referring physician

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INTRODUCTION

Coercive measures such as involuntary admission (IA) to a psychiatric hospital are commonly used in psychiatric emergency situations (PES) when treatment for a refusing patient seems to be necessary, usually due to a potential danger to the patient or to others in combination with an underlying psychiatric disorder (1, 2). Legal, ethical and medical factors are relevant in the implementation and regulation of such measures. Despite these regulations, IAs violate the patients' rights of freedom and self-determination. Therefore, perceived coercion among patients can be high (3, 4). Some may experience feelings of humiliation and, compared to voluntarily admitted patients, many are less satisfied with the received treatment (5–7). Even retrospectively, a substantial percentage of involuntary admitted patients do not consider their admission as justified (8–10). Therefore, coercive measures have been under discussion in psychiatry for centuries (11, 12). However, among mental healthcare professionals it is widely accepted that IA can be beneficial under certain circumstances (13, 14), and studies have shown little to no differences regarding clinical outcome domains and treatment adherence compared to voluntarily admitted patients (4, 5, 15, 16).

The cross-national variations in this highly sensitive and controversial area are remarkable, with rates of involuntary admission differing enormously across the world (1, 2, 17, 18). Even among different regions within the same country or state (and consequently comparable legal regulations), rather impressive differences exist (19, 20). Considering this background, it seems plausible that other factors than the legal prerequisites—such as mental health service structure, local traditions and policies—play an important role as well (21–24). Therefore, an effort has been put into stimulating and harmonizing research and legal prerequisites in different European countries as well as worldwide in order to develop common guidelines or standards of good practice—with the aim of keeping coercive measures at a minimum (25).

In most countries, a physician is legally enabled to mandate an IA of a patient (17, 26). As the gatekeeper to IA, the physician has a crucial role in implementing legal regulations (27) and weighing risks and benefits of involuntary care for the individual patient (28, 29). Studies indicate that the referring physician's experience or competence with psychiatric emergency situations may be associated with disallowance rate and time to discharge (30–32). It has been shown that referring general practitioners find it difficult to apply the legal criteria and assess the necessity for involuntary care (33, 34). In an Australian study (35), patients detained to an emergency department by decision of ambulance officers had 3 times lower odds of a subsequent involuntary admission to a mental health clinic compared to those detained by physicians. Also, differences regarding the compliance rate with legal requirements and the quality of the commitment certificates among various groups of referring physicians have been shown (36–38).

In Switzerland, a federal republic with 26 cantons (states), IA is regulated both on a national and cantonal level. Criteria for IA are defined in the Swiss Civil Code [Art. 426 (39)], whereas different cantonal laws assign the responsible agents. In the canton of Zurich, every physician can admit a patient involuntarily, while in other cantons that decision is assigned only to a selected group of physicians.

There is limited literature describing the course of the PES and the decision-making process leading to IA from the referring physicians' perspectives. Some studies analyzed who initiated the IA (40, 41). Others investigated reasons for the IA and found that patient's aggressiveness, risk of harm to self or others, discontinuation/reinstatement of medical treatment and various other reasons were named with different frequency and importance depending on the setting of the PES and the referring agent (40–43). However, little is known about factors influencing the decision and the course of the processes, and, to our knowledge, no study analyzed in detail the consultation which led to the consequent IA.

This descriptive and exploratory study intended to investigate the process which leads to IA in the canton of Zurich. We aimed to (1) collect data on the referring physicians‘ professional background, (2) describe the characteristics of the PES leading to IA, and (3) shed light on the process of decision-making and factors influencing it.

MATERIALS AND METHODS

Sample

The University Hospital of Psychiatry Zurich (PUK) with its 320 beds constitutes one of the largest hospitals for adult psychiatry within the region and in all of Switzerland. Its catchment area of about 500,000 residents contains both urban and rather rural regions. To investigate the above-mentioned aspects of IA, the structure of the mental health care system in and around Zurich provides a suitable setting because of its various groups of mental health care providers with their diverse backgrounds.

We invited all physicians who had referred patients involuntarily to the PUK within a period of 12 months (October 2016–September 2017) to participate in this study. Of the 1,242 records, 682 were repetitions—the same physician referred multiple patients during the period. As shown in **Figure 1**, 196 records could not be used for other reasons, namely because of missing or unclear contact information, job changes (physicians were not tracked down if they no longer worked at the institution from where the patient was referred), exclusion due to admissions from another canton of Switzerland, or in some cases because the physicians refused to participate. The remaining 364 physicians were contacted by email and invited to answer the questionnaire. Of 109 participants who followed the invitation and completed the questionnaire, two participants had to be excluded due to missing values >50%. Thus, analyses were conducted with 107 (29%) participants.

Questionnaire

For this study, a structured online questionnaire was developed. The first part of the questionnaire consisted of questions about the physicians' professional background and their experience with PES. In the second part of the questionnaire, we asked physicians some questions on their last PES that led to an IA. This part assessed characteristics of that PES as well as the corresponding decision-making process. The questionnaire was reviewed and discussed by physicians experienced in PES and the referral via IA.

Subgroups

To compare statements on questions about consultations with colleagues and the use of risk assessment tools we built three

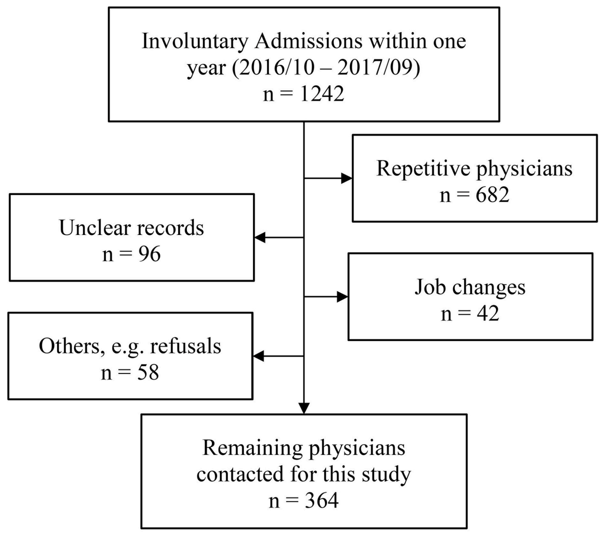

FIGURE 1 | Selection of referring physicians.

subgroups of participants by level of training and medical specialty: (1) Psychiatrist (including child and adolescent psychiatry), (2) Senior doctors who have completed their training with a degree in any other medical specialty, and (3) Residents of any other specialty who have not yet completed their training. The group of referring psychiatrists contained only 5 residents whereof only 1 had <6 years of working experience. Therefore, we decided not to split up that group in seniors and residents for analysis.

Statistical Analysis

We performed statistical analysis using IBM SPSS Statistics 25 (IBM Corp. Released 2017. IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp.) and chose a significance level of 0.05. Along with descriptive statistics, we used cross-tables and Chi-Square tests. For Chi-square tests, we reported Fisher's exact test when cell counts <5 were expected. We reported standardized residuals in cross-tables for variables with more than 2 categories.

Ethics

This study is not subject to the Swiss Human Research Act (Humanforschungsgesetz); therefore, approval from the Cantonal Committee for Ethics was not required. We identified the contacted physicians without collecting any information that would allow conclusions on patients. Furthermore, all data resulting from the online questionnaire have been collected completely anonymously and do not allow to identify neither patient nor referring physician.

RESULTS

Participants

Table 1 shows the participants' socio-demographic data as well as data on their professional background and their experiences with PES within the last 12 months. The participants had a mean age of 46.2 years and a mean professional experience of 17.5 years. Nearly half of the participants were psychiatrists working in their own office or in an institution. For 96 (90%) participants, the last time they mandated an IA was no longer than 6 months ago. While mandating the IA, 49 (46%) participants were working in some form of emergency service, whereas the others were working in their regular shifts.

Characteristics of PES Leading to IA

Table 2 shows different characteristics of the PES leading to IA. The great majority (72%) of the consultations took more than 1 h. Most of the consultations took place in a medical environment, followed by the patient's home, the police station and others. Employees of the healthcare system initiated the consultation in most cases, followed by the police, the next of kin and the patients themselves. In about half of the consultations, the police or a security service was involved. In 46%, this involvement was initiated by the referring physicians. Only 3 participants were either alone with the patient or did not answer the question if other people were involved. The use of informal coercion was reported in 54 (50%) cases. Amongst those who had used informal coercion, 42 reported to have done so knowingly, whereas 9 did so unknowingly, and 3 did not answer the question. The use of formal coercion other than IA was less frequent with 27 (25%) reporting the use of some kind of formal coercion.

The Process of Decision-Making

When asked about the purpose of the IA, 92 of 106 participants chose multiple options resulting in a total of 366 answers shown in **Table 3**. "Protection from danger to self" was chosen most frequently (89% of the participants), followed by "solve the current emergency situation" and "treatment of the psychiatric disorder." In about half of the PES, a patient's next of kin was actively involved in the process of decision-making. Thirty participants (30%) had contact with the patient's outpatient therapist before, during or after the PES. Of those who did not, 43 (61%) stated that the patient had no outpatient therapist or that she/he was not available, 6 (8%) were the outpatient therapists themselves, and 22 (31%) had other reasons or did not answer the question. Only 23 (21%) participants knew the patient from a present or a past treatment, 5 (5%) did so for other reasons, whereas, 79 (74%) did not know the patient prior to the consultation.

Whether participants consulted with a colleague differed significantly among the subgroups of referring physicians [$\chi^2_{(4,n=105)} = 21.06, p < 0.001$], as indicated in **Table 4**. Most of the non-psychiatric residents consulted with a colleague. Those who did not, felt that there was no need. Overall, about half of each subgroup felt no need for such a consultation. Nevertheless, almost 10% of both, psychiatrists and non-psychiatric senior doctors reported that a consultation would have been helpful. The use of a risk assessment tool was equally rare among all three subgroups of referring physicians. However, the rating of the potential helpfulness of such a tool differed among the subgroups [$\chi^2_{(4,n=106)} = 16.49, p < 0.001$]. Compared to psychiatrists, both,

TABLE 1 | Participants' socio-demographic data and professional background.

Characteristics	*n* (%)[a]
GENDER[b]	
Female	41 (39)
Male	65 (61)
AGE	
<30 years	11 (10)
30–39 years	24 (22)
40–49 years	22 (21)
50–59 years	35 (33)
≥60 years	15 (14)
PROFESSIONAL EXPERIENCE[c]	
0–2 years	9 (9)
3–5 years	17 (16)
6–10 years	8 (8)
11–20 years	24 (23)
>20 years	47 (45)
MAIN FIELD OF WORK	
Outpatient psychiatric office	33 (31)
Psychiatric institution	11 (10)
General practitioner	12 (11)
Outpatient emergency doctor	11 (10)
Hospital–EU	15 (14)
Hospital–not EU	17 (16)
Other	8 (7)
MEDICAL SPECIALTY	
Resident psychiatry	5 (5)
Senior doctor psychiatry	42 (39)
Resident internal medicine	21 (20)
Senior doctor internal medicine	29 (27)
Resident other specialty	5 (5)
Senior doctor other specialty	5 (5)
IAS WITHIN LAST 12 MONTHS	
1 IA	15 (14)
2–5 IAs	47 (44)
6–10 IAs	29 (27)
>10 IAs	16 (15)

EU, emergency unit, IA, involuntary admission.

[a] *107 participants, single choice.*

[b] *1 missing*

[c] *2 missing.*

TABLE 2 | Characteristics of PES.

Characteristics	*n* (%)
DURATION OF CONSULTATION[a]	
<15 min	1 (1)
15–30 min	5 (5)
31–60 min	24 (22)
61–120 min	54 (50)
>120 min	23 (21)
LOCATION OF CONSULTATION[a]	
Patient's home	27 (25)
Hospital–EU	24 (22)
Hospital–inpatient wards	13 (12)
Police station	11 (10)
Doctor's office	10 (9)
Nursing home	6 (6)
Public space	4 (4)
Other locations	12 (11)
INITIATING PARTY[b]	
Police	35 (33)
Patient's next of kin / friends	32 (30)
Participant (physician) themself	28 (26)
Nurse	18 (17)
Patient themself	14 (13)
Treating physician	13 (12)
Others	22 (21)
INVOLVED PARTIES[c]	
Police or security service	53 (50)
Patient's next of kin / friends	50 (47)
Medical rescue service	31 (29)
Nurse	30 (28)
Other physicians	11 (10)
Caregiver sheltered housing	7 (7)
Others	17 (16)
USE OF INFORMAL COERCION[d]	
None	51 (49)
Persuasion	36 (34)
Negotiation	36 (34)
Pressure	12 (11)
Inducement	10 (10)
Threat	1 (1)
USE OF FORMAL COERCION[e]	
None	79 (75)
Physical restraint	13 (12)
Police escort	8 (8)
Coercive medication	3 (3)
Others	7 (7)

PES, psychiatric emergency situation, EU, emergency unit.

[a] *107 participants, single choice.*

[b] *107 participants, 31 chose multiple options.*

[c] *107 participants, 56 chose multiple options and 3 chose none.*

[d] *105 participants, 30 chose multiple options.*

[e] *106 participants, 4 chose multiple options.*

non-psychiatric residents and senior physicians reported more frequently that the use of such a tool would have been helpful.

Most participants reported that clinical findings had contributed strongly to the decision for an IA; followed by third-party anamnesis. Other aspects contributed to a lesser extent. Details are shown in **Table 5**.

DISCUSSION

In this study, we found that the group of physicians who mandate IAs in the canton of Zurich is very heterogenous regarding the physicians' medical specialty, level of education and experience. The consultations leading to IA took place in different locations and various parties were involved. The decision to refer patients against their will was mainly driven by clinical findings, third-party anamnesis and a known psychiatric diagnosis and served several purposes at the same time, with the protection from danger to self being named most frequently.

TABLE 3 | Features of the decision-making process.

Variables	*n* (%)
PURPOSE OF IA[a]	
Protection from danger to self	94 (89)
Solve current emergency situation	62 (58)
Treat psychiatric disorder	58 (55)
Protection from danger to others	50 (47)
Relief of social environment	33 (31)
Improve social/housing condition	26 (25)
Taking care of the patient	20 (19)
Resolve an unclear diagnosis	13 (12)
Compulsory drug treatment	4 (4)
Others	6 (6)
THERAPEUTIC ATTITUDES[b]	
Supportive	55 (51)
Directive	53 (50)
Clarifying	52 (49)
Confronting	28 (26)
Validating	24 (22)
Other or don't know	6 (6)
ACTIVE INVOLVEMENT NEXT OF KIN[c]	
Yes	54 (51)
No	51 (49)
CONTACT OUTPATIENT THERAPIST[d]	
Yes	30 (30)
No	71 (70)
PRIOR KNOWLEDGE OF PATIENT[e]	
Yes	28 (26)
No	79 (74)

IA, involuntary admission.

[a] *106 participants, 92 chose multiple options.*

[b] *107 participants, 72 chose multiple options.*

[c] *105 participants, single choice.*

[d] *101 participants, single choice.*

[e] *107 participants, single choice.*

The key medical specialists involved in IA were psychiatrists and specialists for internal medicine. Less than 10% of participants were otherwise specialized. The internists made up for the biggest group of participants in our study, followed by psychiatrists. Looking at professional experience, more than a quarter of the participants were still residents, whereas almost half of them had more than two decades of clinical experience. The proportion of residents among psychiatric participants was much smaller and the few psychiatric residents had much more clinical experience (in years) compared to non-psychiatric participants. Clinical routine experience with IA has been discussed to elevate process quality, and the need for more specific training in the field of IA has been mentioned (30, 32, 37). Our findings suggest that training for residents working in internal medicine is likely to have a big impact on the process quality of IA in the canton of Zurich. It is reassuring that in this study a substantial part of participants has referred several patients for IA within the last 12 months. This indicates that the suggested training might find repeated opportunities for practical implementation in many cases.

We aimed at describing the PES leading to IA and found that the consultations and conducts of IAs were time-consuming, taking between 1 and 2 h in most cases. Furthermore, only about a quarter of participants had known the patient before the PES, and about half of the consultations took place in a non-medical environment, such as the patient's home or the police station. Further research is needed to find whether referring physicians can invest the time needed for IA in their clinical routine, and to what extent cutbacks in the referring process are made due to time-constraints. Prior knowledge of the patient and their medical history could shorten the referring process and has been suggested to elevate assessment quality and lengthen time of hospitalization (30). However, as the majority of the referring physicians do not know the patient from previous contacts, it was discussed that training in the handling of PES and availability of alternatives to IA should be emphasized (32). Further research is needed to better define the influence of prior knowledge and tools like psychiatric advance directives with information about the patients‘ preferences in the case of a relapse (44). Moreover, the location of the consultation may be of relevance. For instance, it was found that patients were referred for IA 3 times more often when they were assessed in a hospital emergency department or police station compared with other community locations (45), and that patients seen on a mobile crisis unit were more likely to be detained than those seen in the emergency service (29). As most studies in the field focus on a single location, limited data on how the location affects the decision to mandate IA is available. On one hand, it seems plausible that the referring physician's available options to solve a current crisis and resources to implement alternatives to IA differ according to the location of the consultation. On the other hand, it could also be that patients with a high symptom-load are more likely to be evaluated in certain locations and the named differences are hence based on patient characteristics. Given the frequency of out-of-hospital locations described in this study, future research should aim to find out what role the location plays in the process of IA. The prevalence of additional formal coercion (besides the IA itself) and the usage of informal coercion during the admission process have, to our knowledge, not been described yet. The use of informal coercion, reported in about half of cases in this study, is within the range of the prevalence in psychiatry described in a systematic review (46). The use of any form of formal coercion was reported in 25% of cases in this study. In the canton of Zurich, 6–11% of all inpatients (regardless of admission status) were found to be exposed to some form of coercion (20), and, in a recent study, it was shown that 28% of involuntary hospitalized patients experienced at least one coercive measure during the course of hospitalization (47). In conclusion, we can state that rates of coercive measures during both admission and hospitalization are comparable in the canton of Zurich. Further research has to show whether the same subgroup of patients is target to these measures in both settings.

Examining the course of the PES and the process of decision-making, we found several indications that the decision to mandate an IA of a patient might be influenced by third parties.

TABLE 4 | Consultation with a colleague and use of risk assessment tool.

Variables	Psychiatrist		OS senior		OS resident		Total	Chi-square
	n (%)	sr	*n* (%)	sr	*n* (%)	sr	*n* (%)	
CONSULTATION WITH A COLLEAGUE[a]								
Took place	14 (33)	−1.2	12 (32)	−1.2	22 (85)	2.9	48 (46)	15.82**
Would have been helpful	4 (10)	0.7	3 (8)	0.3	0 (0)	−1.3	7 (7)	4.81
There was no need	24 (57)	0.9	22 (59)	1.0	4 (15)	−2.4	50 (48)	11.36*
RISK ASSESSMENT TOOL[b]								
Used	2 (5)	0.7	1 (3)	0.0	0 (0)	−0.9	3 (3)	3.12
Would have been helpful	4 (9)	−2.1	9 (24)	−0.1	14 (54)	2.9	27 (25)	17.17**
There was no need	37 (86)	1.1	27 (73)	0.1	12 (46)	−1.5	76 (72)	6.50

OS, other specialty; sr, standardized residual.

[a] *105 participants, single choice.*

[b] *106 participants, single choice.*

* *$p < 0.05$; ** $p < 0.01$.*

TABLE 5 | Contribution of different aspects to the decision for IA.

Aspect	Participants[a] having chosen each category [*n* (%)]				
	Not	Little	Int.med.	Strongly	Not app.
Clinical findings	4 (4)	4 (4)	9 (8)	88 (83)	1 (1)
Third-party anamnesis	5 (5)	10 (9)	31 (29)	58 (54)	3 (3)
Known psychiatric diagnosis	6 (6)	16 (15)	38 (36)	37 (35)	8 (8)
Past admission(s) to psychiatric hospital	20 (19)	22 (21)	21 (20)	23 (22)	19 (18)
Past involuntary admission(s)	29 (28)	20 (19)	13 (13)	15 (15)	26 (25)
Intoxication (alcohol, drugs, medication)	29 (28)	9 (9)	12 (12)	25 (24)	29 (28)
Patient had no psychiatric outpatient treatment	29 (28)	18 (17)	11 (11)	9 (9)	37 (36)
Patient did not take prescribed medication	23 (22)	11 (11)	19 (18)	20 (19)	31 (30)

Int.med., intermediately; Not app., not applicable.

[a] *107 participants, missing values of all variables are 4 (4%) or below.*

Thus, about half of the participants actively involved a patient's next of kin in the decision-making process, whereas legally it is only requested to inform them about the decision to mandate an IA [Art. 430 Swiss Civil Code (39)]. Furthermore, most participants had contact with the outpatient therapist given there was one available and many consulted with a colleague. Also, the third-party anamnesis contributed importantly to the decision to admit the patient involuntarily. Therefore, even though a single person signs responsible for the IA, it seems to be the result of a process of integrating different views on the patient. Looking closer, we found that all participating residents either consulted with a colleague, probably their supervising physician, or felt that there was no need. This finding might be interpreted as a sign of good supervision and training, as none of the residents felt a need for a consultation but did not have the opportunity to do so. Nevertheless, almost a tenth of psychiatrists and senior doctors would have found a consultation with a colleague helpful, but for some reasons this was not possible. Our data do not give information about the reasons that forbid a consultation in these cases. Future studies should aim to evaluate if the availability of a consultation with an expert (four-eyes principle) could lower the course of a PES. The risk-assessment of danger to self or others is a crucial part in any PES. Although the use of a structured risk assessment tool was rare. This is in line with existing literature for general practitioners (42). It has been proposed that experienced physicians intuitively use similar criteria compared to such tools when assessing the risk of violence (48). Accordingly, in our study, most non-psychiatric residents, probably the group with the least experience in PES, stated that a risk assessment tool would have been helpful, whereas especially psychiatrists felt that there was no need for such a tool.

Looking at the reasons for IA, we found that almost 90% of referring physicians named protection from danger to self. This is a high proportion, compared with existing literature (42, 45, 49–51). A possible explanation might be that in Switzerland, IA is legally only possible "if the required treatment or care cannot be provided otherwise" [Art. 426 Swiss Civil Code (39)]. We can thus assume that the referring physicians find sufficient possibilities to provide treatment without IA for patients who are not at risk of harming themselves. In addition, clinical findings contributed strongest to the decision to mandate an IA, followed by third party anamnesis. This is in line with previous studies that have described the severity of symptoms and certain diagnoses as predictors for hospitalization (23, 49, 52). It is also in line with the Swiss legislation, highlighting that the clinical examination of the patient prior to an IA is obligatory and has to be conducted by the referring physicians themselves [Art. 430 Swiss Civil Code (39)]. The patient's psychiatric history, especially a known psychiatric diagnosis and, in a minority of cases, also past hospitalizations (involuntary or voluntary), contributed substantially to the decision to refer for IA. Hence on one hand, a known psychiatric diagnosis or past hospitalization could be reassuring (exert influence on..) for the referring physician, In that sense, further research should aim to gain a better understanding of the underlying grounds behind the findings that past (voluntary and/or involuntary) hospitalizations are a risk-factor for IA (53, 54). The contribution of an intoxication to the decision to refer for IA shows an interesting bimodal distribution, either contributing strongly or not at all. This could indicate that in some cases the need for IA is certain and regardless of a current intoxication, whereas in other cases only the combination of symptoms of a disorder and the intoxication leads to a condition demanding IA. One interpretation could be, that the second group of patients, in which the intoxication contributes strongly, is disallowed shortly after termination of the intoxication-symptoms. Therefore, for this subgroup of patients, another form of treatment might be more suitable than IA to a psychiatric hospital (55). Furthermore, a weak medication adherence contributed substantially to the decision to mandate an IA in about a third of cases. Discontinuation of medication has been described as a main reason to refer for IA in different countries (41, 43, 50), and a Norwegian study found treatment with neuroleptics to be the most frequently named expectation of general practitioners who referred for IA (40). Nevertheless, a meta-analysis showed that measures to enhance adherence did not significantly reduce the number of IA (56). Further research should focus on the perspective of patients who discontinued their medication and the contrasting perceived importance of medication in referring physicians.

Strengths and Limitations

In this study we systematically collected data on three important aspects of IA: (1) the referring physician, (2) the consultations leading to IA (participants, location, duration etc.), and (3) the reasons for IA. Therefore, it gives—on a descriptive level—a broader view than studies focusing on one of these aspects (32, 38, 51). We were able to cover referrals from many different clinics and various outpatient physicians in the canton of Zurich, leading to a diverse collective of patients and referring agents. However, as we did not interview other involved parties, the view on the PES is limited to the referring physicians' perspective. Moreover, the referring physicians were invited to participate on a voluntary basis what may have biased our sample of participants. Still, comparing data on the referring physician's background in this study with data collected in another study (38) conducted in the same hospital, we can assume that our sample of participants contains no larger representation bias for the different groups of referring physicians. Data were collected only for one major university hospital in the canton of Zurich. Therefore, comparability with other regions and their respective health care structures might be limited. Due to the descriptive nature of the study, it is difficult to draw concise conclusions. Nevertheless, we think that the data can provide interesting insights and give important impulses to further research in the field.

CONCLUSIONS

We can conclude that PES leading to IA are very heterogenous ranging from a consultative psychiatric examination on a well-equipped emergency unit of a greater hospital to a physician on his own visiting a patient in his home. Available treatment options and measures to solve a current crisis as well as patients' symptomology may vary a lot between different locations. Considering that diversity, profound training in the handling of PES seems to be indispensable to cope with the challenges that may arise during the referring process. Our data shows that especially training for residents in internal medicine could have an impact on the process of IA. Furthermore, IA has been shown to be a very time-consuming process. Further research should investigate to what extent cutbacks in the referring process are made due to time-constraints and how that affects the decision for IA. To reduce rates of IA, alternatives for patients with a high symptom load and especially for those at risk of harm to themselves are needed. Most likely, no single measure will be able to address the needs in the diverse scenarios outlined in this study.

DATA AVAILABILITY STATEMENT

The dataset generated and analyzed for this study also contains data that has not yet been analyzed and published. Therefore, the dataset is not publicly available for now. For accessibility of data, interested researchers are welcome to directly contact the authors at a later time.

AUTHOR CONTRIBUTIONS

SMa, MJ, and FH contributed conception and design of the study along with development of the online questionnaire. SMa acquired data, SMa and SMo performed statistical analysis and SMa wrote draft of the manuscript in close collaboration with FH. SMa, MJ, SMo, AT, ES, and FH contributed to manuscript revision, read and approved the submitted version.

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frontiers in Psychiatry

ORIGINAL RESEARCH
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Narrative Case Notes Have the Potential to Predict Seclusion 3 Days in Advance: A Mixed-Method Analysis

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Objectives: Current risk assessment tools can predict problematic behavior and the need for coercive measures, but only with a moderate level of accuracy. The aim of this study was to assess antecedents and triggers of seclusion.

Methods: Narrative notes of health care professionals on psychiatric inpatients were analyzed daily starting 3 days prior to seclusion in the case group ($n = 26$) and compared to a matched control group without seclusion ($n = 26$) by use of quantitative and qualitative research methods, based on qualitative content analysis.

Results: Quantitative measures showed more aggression in the case group with highly significant differences between the groups ($p < 0.001$) at all measurement times. Seclusion was significantly associated with the total word count of the narrative notes. Subjective emotional expressions by staff were more apparent before seclusion ($p = 0.003$). Most frequently, subjective expressions regarding "arduous/provocative" ($p < 0.001$) and "anxious" ($p = 0.010$) sentiments could be identified in the case group. Description of patients' behavior in the case group included more negatively assessed terms ($p = 0.001$). Moreover, sleep loss, refusing medication, high contact frequency, demanding behavior and denied requests were present in a significantly higher frequency before seclusion. Expressions like "threatening" ($p = 0.001$) were found only before seclusion and appeared to have the function of personal risk assessment. The expression "manageable" ($p = 0.035$) appeared often in difficult situations that could still be handled.

Conclusion: Several factors preceding seclusion could be identified. Narrative notes of staff already showed differences 3 days before the escalation. Particularly the word count, the analysis of terms describing patients' behavior, subjective expressions of staff, and terms used as a function of personal risk assessment could help to provide better predictions of aggressive incidents and to prevent coercive measures.

Keywords: aggression, coercion, emotional involvement, mixed-methods, narrative notes, risk assessment, word count, subjectivity

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INTRODUCTION

Violence and aggression in mental health care units represent an imminent danger for patients and health care professionals (HCP). In high-income countries, almost one in five acutely admitted psychiatric inpatients commit an act of physical violence (1). Aggression defined as verbal or physical abuse and intimidation (2) should be identified early to prevent further escalation and coercion, which may cause severe psychological distress and is potentially traumatic for both patients (3–5) and staff (6–8).

A number of risk assessment tools to predict violence and reduce severe incidents or the need for coercion are available, but only reach a moderate level of predictive accuracy (9). Correspondingly, a variety of antecedents associated with aggressive behavior have been found in previous investigations (10), encompassing patient symptoms, behavioral and emotional cues, interactional factors (patient-patient or patient-staff interaction), external issues, and structural issues (e.g., environmental factors within wards). In a systematic review and meta-analysis, Dack et al. (11) summarized that the following patient related clinical factors were known to be associated with aggressive behavior: psychiatric in-patients being male, of young age, not married, involuntarily admitted, diagnosed with schizophrenia, having a greater number of previous admissions, a history of violence, self-destruction, and substance abuse. However, patient factors do not entirely explain the variation in the occurrence of dangerous behavior and its management, and a multifactorial cause should be considered instead, also—within others—including staff related factors (11, 12).

Indeed, staff-patient interactions can constitute an important precursor of aggressive incidents (13–15). Perceptions, attitudes, and emotional reactions of staff and patients are considered to affect interactional behavior preceding aggressive incidents (15–19). An example for problematic behavior given by Bowers et al. (20) describes health care professional frustration due to repetitive requests at inappropriate times concerning a trivial item. The type of management that is used to deal with problematic patient behavior influences the interactional response and may lead to an escalation (8, 21–23). Escalation can, e.g., be triggered by a controlling (15, 24, 25), over-confident, and punitive management approach by staff (26–29). In addition, restrictive regiments like limiting patients' freedom or denying patients' requests appear to be an essential antecedent of aggressive behavior (10, 14, 20, 30, 31).

Further, healthcare professionals' emotions and subjective perceptions can contribute to de-escalation and escalation of problematic behavior and could potentially be used to improve risk assessment and prediction. For example, emotions and exposure to patient aggression have been investigated in a cross-sectional questionnaire survey of nurses by Jalil et al. (32), who revealed a positive relationship between nurse-reported anger and exposure to—mostly verbal—patient aggression as well as endorsement of coercive violence interventions. Greater work experience was associated with more tolerance toward aggressive behavior (13), probably due to a better in-depth understanding (20, 33). Furthermore, a less tolerant attitude was related to a higher state of burnout traits like emotional exhaustion, depersonalization and personal accomplishment and an inappropriate management of aggressive incidents (13, 34). In contrast, staff on acute inpatient ward is frequently confronted with challenging patient behavior, which may among others result in a higher tolerance for mild-to-moderate aggression with the possible consequence of missing early warning signs. This might be accompanied by the tendency for underreporting of aggressive incidents (35). In summary, there is evidence for a possible role of staff emotions and subjective experience in the causation and prediction of problematic behavior and coercive measures, but this topic is currently under-researched.

The current study differs from preexisting studies by investigating precursors of seclusion in narrative case notes. Narrative notes contain a wide range of information and were used in previous studies as a source to capture specific information not otherwise available, e.g., patients' problem behavior (12, 19, 20, 36). Natural language processing has the potential power of identifying meaningful predictors in narrative notes (37, 38). In fact, there is evidence supporting this approach for the prediction of suicide from a comprehensive study by McCoy et al. (39). Using computerized natural language processing, the authors were able to investigate 845,417 discharges in a retrospective investigation and could show that cases with the expression of positive sentiments in discharge notes were less likely to attempt suicide.

The aim of the present study was to determine antecedents of seclusion by analyzing narrative notes of HCP in a group of patients with seclusion in comparison to a control group without seclusion in a quantitative and qualitative mixed-methods retrospective case-control study, examining the course of inpatient treatment and staff-patient interaction on a daily basis starting from 3 days prior to seclusion.

METHODS

Inclusion and Exclusion Criteria

All inpatient cases admitted to the Department of Adult Psychiatry of the Psychiatric University Hospital Basel, Switzerland (Universitäre Psychiatrische Kliniken Basel (UPK), Klinik für Erwachsene, Universität Basel, Switzerland) between October 2014 and May 2016 were eligible for entry in the current study. To be included in the case group, persons had to have undergone seclusion during their inpatient treatment. Cases with <3 days of inpatient treatment prior to seclusion, or without documentation on one or more of the 3 days prior to seclusion (e.g., because of absconding during this period) were excluded. For patients with repeated hospitalizations with seclusions during the observation period, only the first hospitalization with seclusion compatible with in- and exclusion criteria was entered. During the 20-months observation period, 26 inpatient cases were available for analysis.

For inclusion in the control group, 26 inpatient cases hospitalized during the observation period matched for approximate age (±6 years), gender, and main diagnosis according to ICD-10 chapter V main group were randomly selected. In total, 570 case notes from the documentation of 52 patients were included, $M = 10.96$, $Min = 4$, $Max = 17$, $SD = 2.4$.

Data Collection and Analysis

The following sociodemographic and clinical data of patients were collected from electronic health records (EHR): gender, age, nationality, main diagnosis according to ICD-10, comorbid substance use disorder (SUD), type of admission (compulsory or voluntary), number of previous hospitalizations, duration of inpatient treatment, marital status, highest educational attainment, and current employment status.

Narrative notes of staff consisting of nursing staff, physicians, psychologists, and other HCP were extracted from the EHR on a daily basis starting from 3 days prior to seclusion (day −3, day −2, and day −1) and at the day of seclusion before escalation (day 0). A day was defined as starting with the first entry of the staff morning shift and ending with the last entry from staff night shift. In cases with insomnia where escalation and seclusion occurred during the early morning hours of day 0, the night prior to seclusion was treated as beginning of day 0. For the control group, the treatment day on which seclusion was performed for the case was chosen as day 0 for the control. For example, if the case was subjected to seclusion on the seventh day of inpatient treatment (day 0 for the case), seventh day of the control was defined as day 0 for the control, and narrative notes of 4 days (days −3 to 0) were extracted. In cases where EHR notes were missing during this episode (e.g., because the patient had absconded), the closest possible day toward day 0 in the case group was chosen with a maximum tolerance of ±3 days.

Whole-text-analysis of narrative notes was repeated several times and performed systematically via qualitative content analysis according to Mayring (40) using a structural method approach and frequency analysis. Categories and codes were defined inductively and deductively applying the qualitative data analysis software MAXQDA12 (VERBI Software GmbH, Berlin, Germany). Qualitative coding methods as described by Saldaña (41) contributed to define categories and codes (e.g., magnitude coding, simultaneous coding, structural coding, descriptive coding, *in-vivo* coding, process coding, concept coding, emotion coding, evaluation coding, hypothesis coding, causation coding, values coding, pattern coding, theme coding). CS performed initial data analysis. A second experienced reviewer (physician), HCP of inpatient wards consisting of nurses, a psychologist, a physician of a psychiatric intensive care unit, and another health care professional experienced in qualitative research supplemented the coding process: comments were applied, codes and themes were discussed, and decision-making was made by consensus. Furthermore, CS and JS rated a subset of 30 narrative notes independently regarding the categories "staff subjectivity," "sleep behavior," "demanding behavior," "compliance," and "high contact frequency," since these categories entail a higher risk for rater subjectivity. The average kappa corresponded to 0.86 ranging from substantial to almost perfect interrater reliability ($\kappa = 0.63$–1.00) (42) with 23/33 (70%) items having a Kappa > 0.80.

Quantitative Instruments

In addition to qualitative content analysis, the total number of words in staff documentation and the number of individual notes was calculated on a daily basis for days −3, −2, and −1. Word count and number of notes for day 0 were not assessed as seclusion occurred at different times, and thus the time period and amount of documentation on day 0 prior to seclusion showed considerable variation depending mainly on the time of seclusion, but not necessarily on differences in staff documentation. Moreover, the most frequently used terms were analyzed regarding the number of patients with at least one occurrence of the term and the number of days with at least one occurrence.

Furthermore, the following quantitative instruments were rated for each observed day: The Modified Overt Aggression Scale (MOAS) (43) comprising the four dimensions *verbal aggression*, *aggression against property*, *auto-aggression,* and *physical aggression* with five items per dimension; the Positive and Negative Syndrome Scale–Excited Component (PANSS-EC) (44) with the five items *poor impulse control, tension, hostility, uncooperativeness,* and *excitement,* rated on a 7-point Likert scale; and the Clinical Global Impressions–Severity of Aggression scale (CGI-A) (45–47), a rating for the global assessment of a patient's aggressiveness, ranging from *no aggressive behavior, slight aggressive behavior, moderate aggressive behavior, and severe aggressive behavior* to *aggressive behavior present*. Both the OAS (48) and the PANSS-EC have been validated for retrospective use (45). Concerning the psychometric properties of the instruments used in this study, an acceptable to good internal consistency could be achieved. In this study, ratings using the MOAS reached a Cronbach's alpha of 0.759 at Day −3, of 0.786 at Day −2, and of 0.801 at Day −1. Cronbach's alpha of the PANSS-EC reached 0.821 at Day −3, 0.822 at Day −2, and was 0.831 at Day −1.Cronbach's alpha was not determined for the CGI-A, as it is a single-item rating instrument.

Statistical Analysis

Descriptive statistics were performed for sociodemographic and clinical characteristics, quantitative measures of patient aggression, staff documentation word count, and frequently used terms. Shapiro-Wilk tests were used to test normality. χ^2-tests were applied to test group differences for categorical data, *t*-tests were used for normally distributed continuous data differences, and Mann-Whitney-*U*-test was performed for not normally distributed continuous data.

In addition, logistic regression was performed to examine the predictive power of the variables "word count," "positive subjectivity," "unpredictable," "sleep irregularities," and "manageable" on membership in the case group. $p < 0.05$ was considered significant, and only two-tailed tests were used. Pearson's r was calculated as a measure of effect size according to Cohen (49). All calculations were performed using the software IBM SPSS Statistics version 24 (IBM Corporation, Armonk, NY, USA).

TABLE 1 | Clinical and sociodemographic characteristics.

	Case group ($n = 26$)		**Control group ($n = 26$)**		**Total sample ($n = 52$)**		***p*-value**
GENDER							1.000[b]
Female	9	(34.6%)	9	(34.6%)	18	(34.6%)	
Male	17	(65.4%)	17	(65.4%)	34	(65.4%)	
Age (M ± SD)	39.7 ± 11.6		41.2 ± 10.9		40.4 ± 11.2		0.652[a]
NATIONALITY							0.458[b]
Switzerland	15	(57.7%)	18	(69.2%)	33	(63.5%)	
Other European countries	9	(34.6%)	6	(23.1%)	15	(28.8%)	
African countries	2	(7.7%)	2	(7.7%)	4	(7.7%)	
MAIN DIAGNOSIS (ICD-10)							0.613[b]
F0.x	2	(7.7%)	2	(7.7%)	4	(7.7%)	
F1.x	1	(3.8%)	1	(3.8%)	2	(3.8%)	
F2.x	19	(73.1%)	19	(73.1%)	38	(73.2%)	
F3.x	2	(7.7%)	2	(7.7%)	4	(7.7%)	
F4.x	1	(3.8%)	1	(3.8%)	2	(3.8%)	
F6.x	1	(3.8%)	1	(3.8%)	2	(3.8%)	
COMORBID SUBSTANCE USE DISORDER							0.491[b]
Current addiction	11	(42.3%)	7	(26.9%)	18	(34.6%)	
Substance abuse	2	(7.7%)	2	(7.7%)	4	(7.7%)	
None	13	(50.0%)	17	(65.4%)	30	(57.7%)	
Type of admission							0.012[b]
Compulsory	16	(61.5%)	7	(26.9%)	23	(44.2%)	
Voluntary	10	(38.5%)	19	(73.1%)	29	(55.8%)	
Number of previous hospitalizations (M ± SD)	11.9 ± 10.7		8.6 ± 9.8		10.3 ± 10.3		0.289[a]
Duration of inpatient treatment (M ± SD)	63.0 ± 59.0		61.4 ± 38.5		62.2 ± 49.4		0.398[a]
MARITAL STATUS							0.375[b]
Single	14	(53.8%)	18	(69.2%)	32	(61.5%)	
Married/cohabitating	2	(7.7%)	2	(7.7%)	4	(7.7%)	
Married/living separately	3	(11.5%)	0	(0%)	3	(5.8%)	
Divorced	1	(3.8%)	2	(7.7%)	3	(5.8%)	
Unknown	6	(23.1%)	4	(15.4%)	10	(19.2%)	
HIGHEST EDUCATIONAL ATTAINMENT							0.149[b]
Incomplete education	0	(0%)	1	(3.8%)	1	(1.9%)	
Obligatory primary school	11	(42.3%)	4	(15.4%)	15	(28.8%)	
Grammar school	2	(7.7%)	3	(11.5%)	5	(9.6%)	
Apprenticeship	2	(7.7%)	8	(30.8%)	10	(19.2%)	
University/College	2	(7.7%)	2	(7.7%)	4	(7.7%)	
Unknown	9	(34.6%)	8	(30.8%)	17	(32.7%)	
EMPLOYMENT							0.530[b]
Unemployed	3	(11.5%)	7	(26.9%)	10	(19.2%)	
Protected employment	5	(19.2%)	2	(7.7%)	7	(13.5%)	
Invalidity/retirement	10	(38.5%)	9	(34.6%)	19	(36.5%)	
In training	2	(7.7%)	3	(11.5%)	5	(9.6%)	
Full time job	1	(3.8%)	0	(0%)	1	(1.9%)	

Values are given in absolute numbers and percentage or in mean (M) and standard deviation (SD). ICD-10, International Statistical Classification of Diseases and Related Health Problems, 10th revision.

[a] *t-test.*

[b] *χ^2-test.*

RESULTS

Sample Description

Sociodemographic and clinical characteristics of the case group, the control group, and the total sample are listed in **Table 1**.

Concerning the criteria used for matching cases and controls, included patients had a mean age of 39.7 (range: 19–64) years, 65.4% (34/52) of the patients were male, and 73.2% (38/52) had a main diagnosis of schizophrenia-spectrum disorder.

In the case group, compulsory admission was more frequent (61.5 vs. 26.9%, $p = 0.012$). Concerning comorbid SUD, more patients with a current addictive disorder (42.3 vs. 26.9%) and fewer patients without SUD (50.0 vs. 65.4%) were present in the case group, but these differences were not statistically

TABLE 2 | Quantitative measures of aggression in the case and control groups over the course of the observation period (days −3 to day 0).

Group	Day	MOAS total score M ± SD	PANSS-EC total score M ± SD	CGI-A score M ± SD
Case group (*n* = 26)	Day −3	0.7 ± 1.1	13.9 ± 7.3	1.9 ± 1.3
	Day −2	1.2 ± 1.7	16.7 ± 7.5	2.5 ± 1.7
	Day −1	1.4 ± 1.9	19.4 ± 7.9	2.7 ± 1.6
	Day 0	1.9 ± 2.5	23.7 ± 8.8	3.0 ± 1.7
Control group (*n* = 26)	Day −3	0.0 ± 0.0	6.0 ± 2.0	1.0 ± 0.0
	Day −2	0.0 ± 0.0	7.2 ± 2.7	1.0 ± 0.0
	Day −1	0.0 ± 0.0	6.5 ± 3.2	1.1 ± 0.4
	Day 0	0.0 ± 0.2	7.2 ± 3.9	1.1 ± 0.6

Total scores of the Modified Overt Aggression Scale (MOAS), Positive and Negative Symptom Scale for Schizophrenia—Excited Component (PANSS-EC), and the Clinical Global Impressions–Aggression Scale (CGI-A) are given as mean (M) and standard deviation (SD). Explorative comparisons between the case and the control group were performed using Mann-Whitney U-tests and total scores in the case group were significantly higher than in the control group for all scales and time points ($p \leq 0.001$; effect size $r = 0.45–0.75$).

TABLE 3 | Example quotes.

STAFF SUBJECTIVITY	
Provoked or arduous	"He wasn't sleeping this night, standing in the corridor, walking back and forth. Persecuting and observing us provocatively. Refusing his medication, when not, he secretly disposes of it. Patient seems very amused by that." (Case 10, Day −3)
Anxious	"He was running back and forth the corridor, we felt threatened and were worried he could become physically violent." (Case 8, Day 0)
Pejorative	Coded mostly by use of expressions like, he came up with the idea to have every reason to get money from us" (Case 15, Day 0) or pejorative terms in a less compassionate context, like "snappish" or "hysterical"
Enthusiastic	"The patient is doing some team sport after being asked, he is doing his own program, stays until the end (of the lesson) and was complimented on being calm." (Case 21, Day −1)
Compassionate	"Visible and perceptible considerable psychological strain" (Case 20, Day 0)
QUOTATIONS OF DIRECT SPEECH	
	"Watch out, you won't have any rights then too!" (Case 3, Day 0)
	"Leave me alone, I am not having any discussion with you!" (Case 9, Day −2)
	"Psychopharmaceuticals are bullshit!" (Case 25, Day −2)
	"Curious smell" (Case 14, Day −3)
SLEEP BEHAVIOR	
Insomnia	"…patient stayed up all night long…" (Case 13, Day 0)
Sleeps late	"…was able to sleep after 2 a.m." (Case 8, Day −2)
Early awakening	"…went to bed at about 11 p.m. He came at about 3.40 a.m., made a tea and tried to occupy himself" (Case 23, Day −1)
Sleep discontinuity	"…went to bed at 10 p.m., slept with one interruption" (Case 2, Day −1)
DEMANDING BEHAVIOR	
	"Patient shows no frustration tolerance, whenever he is not getting what he wants he is running around the ward and shouting loudly."(Case 6, Day −3)
	"Has difficulties with the rules on the ward: different requests like bread and milk in the middle of the night, modifications of the menu, new shoes etc. Gets tensed and uncalm and starts to smash doors, kicking the bin and furniture around–appears very aggressive and threatening." (Case 22, Day −1)
	"Patient comes to health care personnel every half hour and demands different things." (Case 15, Day −1)
	"Needs a lot of attention and assistance." (Case 7, Day −2)
Non-compliance	"…the patient is still refusing his medication…" (Case 19, Day −3)
High contact frequency	"getting in contact frequently every half an hour with different demands" (Case 15, Day −1)

significant. In addition, no significant differences emerged concerning the nationality, duration of inpatient treatment, marital status, number of previous hospitalizations, highest educational attainment, and current employment previous to hospitalization.

Measures of Aggressive Behavior

Patients in the case group showed more aggressive behavior than patients in the control group as assessed with the MOAS, PANSS-EC and CGI-A (cf. **Table 2**). Between-group differences were highly statistically significant ($p < 0.001$) for each observation day beginning from day −3, with an effect size of $r = 0.4–0.75$ (medium to high effect size). Furthermore, an increase of aggression scores from day −3 to day 0 became evident for the case group for all quantitative measurements.

Qualitative and Quantitative Analysis of Narrative Notes

Qualitative analysis revealed 112 variables per observational day, and 400 variables in total. According to the topics covered by the extracted variables, the main focus of the analysis was placed on expressions of "staff subjectivity," "terms describing patients' behavior," terms associated with "risk assessment" and "sleep behavior," "demanding behavior," "requests," "high contact frequency," and "non-compliance." Example quotes can be found in **Table 3**.

Staff Subjectivity

Documentation of patients contains primarily descriptions of their behavior, but subjective statements by staff related to their own perception of patient behavior were also discernible. Staff statements that were accompanied with staff emotional involvement became apparent in narrative notes due to distinct subjective expressions and style of phrasing. Subjectivity was grouped into statements with positive valence containing "enthusiastic" and "compassionate" sentiments, or with negative valence containing "provoked/arduous," "anxious," and "pejorative" sentiments (cf. **Table 4**).

In total, subjective statements were three times more apparent in the case than in the control group, M (case group) $= 1.8$, $SD = 1.6$; M (control group) $= 0.6$, $SD = 0.9$; $U_{(52)} = 182.5$, $p = 0.003$. Negative valence statements were only apparent in the case group, M (case group) $= 1.3$, $SD = 1.5$; M (control group) $= 0$, $SD = 0$; $U_{(52)} = 130.0$, $p < 0.001$, but there were no significant differences concerning the frequency of positive valence statements that were present in both groups, M (case group) $= 0.6$, $SD = 0.8$; M (control group) $= 0.6$, $SD = 0.9$; $U_{(52)} = -0.162$, $p = 0.850$.

Specifically, statements regarding "provoked/arduous" sentiments, M (case group) $= 0.8$, $SD = 1.1$; M (control group) $= 0$, $SD = 0$; $U = 182.0$, $p < 0.001$, and "anxious" sentiments, M (case group) $= 0.3$, $SD = 0.6$; M (control group) $= 0$, $SD = 0$; $U_{(52)} = 260.0$, $p = 0.010$, were significantly more present in the case group. "Compassionate," M (case group) $= 0.5$, $SD = 0.7$; M (control group) $= 0.5$, $SD = 0.8$; $U_{(52)} = 312.0$, $p = 0.564$, "pejorative," M (case group) $= 0.2$, $SD = 0.5$, M (control group) $= 0$, $SD = 0$; $U_{(52)} = 242$, $p = 0.057$, and "enthusiastic" sentiments, M (case group) $= 0.1$, $SD = 0.3$; M (control group) $= 0.2$, $SD = 0.5$; $U_{(52)} = 269.0$, $p = 0.506$, were documented in both groups with no significant differences in frequency.

Terms Describing Patients' Behavior

In both groups, staff used distinctive terms to describe a patient's current behavior. In total, 26 terms could be identified that appeared at least 8 times during the observation period. Behavioral terms were analyzed by their emotional value (positive, negative, or other) and assessed regarding their potential association with problematic behavior leading to escalation and ultimately seclusion as estimated by the context of their use (cf. **Table 5**).

Staff described patients with behavioral terms significantly more often in the case group than in the control group, M (case group) $= 13.8$, $SD = 6.7$; M (control group) $= 8.2$, $SD = 4.3$; $t_{(52)} = -3.5$, $p = 0.001$. The description of patients' behavior in the case group included significantly more terms with negative valence, and these terms were potentially related to problematic behavior, M (case group) $= 9.2$, $SD = 6.5$; M (control group) $= 1.5$, $SD = 2.4$; $U_{(52)} = 80.0$, $p < 0.001$.

More precisely, terms like "agitated," "irritable," "loud/screaming," "obtrusive," "restless," "threatening," "dysphoric," "insulting/cursing," "aggressive," "bizarre/foolish," and "provocative" emerged with a significantly higher frequency in the case group. The most frequently represented behavioral term in the case group was "agitated."

Patients in the control group were significantly more often perceived to be "adequate," "organized" and "unchanged," but were described as "psychotic," "volatile," "distracted," "reclusive," and "sad" in their behavior in equal frequency as in the case group. Positively assessed terms like "friendly," "calm," "relaxed," "reachable," "good mood," and "cooperative" appeared frequently in both groups. However, in total, terms with positive sentiments appeared significantly more often in the control group, M (case group) $= 3.3$, $SD = 2.2$; M (control group) $= 5.0$, $SD = 3.4$; $t_{(52)} = 2.1$, $p = 0.039$. The term "friendly" was the most common behavioral term in the control group, but was not present with a significantly higher frequency compared to the case group.

Risk Assessment

Expressions like "threatening," M (case group) $= 0.5$, $SD = 0.7$; M (control group) $= 0$, $SD = 0$; $U_{(52)} = 208.0$, $p = 0.001$, or "unpredictable," M (case group) $= 0.1$, $SD = 0.3$; M (control group) $= 0$, $SD = 0$; $U_{(52)} = 299.0$, $p = 0.077$, were used more often before an aggressive event or escalation in the case group. They appeared to function as a surrogate of personal risk assessment, and can be considered as a personal assessment if seclusion will become necessary. The term "threatening" shows an increased use in the time preceding seclusion. These expressions were not used by staff documenting the course of treatment in the control group.

The term "manageable," M (case group) $= 0.8$, $SD = 1.1$; M (control group) $= 0.3$, $SD = 0.5$; $U_{(52)} = 240.0$, $p = 0.035$, shows a similar pattern; it is used more often in the case group, particularly in the context of problematic behavior that could still be handled.

Sleep Behavior

Sleep behavior was coded as sleep irregularities including "insomnia" defined as total loss of sleep, "late onset of sleep" if patients fell asleep later than 24:00, "early awakening" if patients awoke before 5:00, "sleep discontinuity," and "no irregularities" (cf. **Table 6**). In the days before seclusion, patients in the case group showed significantly more sleep irregularities, M (case group) $= 0.8$, $SD = 1.0$; M (control group) $= 0.3$, $SD = 0.5$; $U_{(52)} = 240.5$, $p = 0.036$. Moreover, insomnia increased in the case group toward the day of seclusion and was the type of sleep irregularity with the highest frequency in the case group, M (case group) $= 0.9$, $SD = 1.0$; M (control group) $= 0.2$, $SD = 0.5$; $U_{(52)} = 194.0$, $p = 0.004$. In addition, greater latency to sleep onset, M (case group) $= 0.7$, $SD = 0.7$; M (control group) $= 0.1$, $SD = 0.3$; $U_{(52)} = 164.5$, $p < 0.001$, and early awakening were observed and documented more often in the case group, M (case group) $= 0.5$, $SD = 0.7$; M (control group) $= 0.2$, $SD = 0.4$; $U_{(52)} = 254.0$, $p = 0.047$.

Sleep discontinuity showed the highest frequency within the control group, but no significant differences in frequency could be observed between the case and the control groups, M (case group) $= 0.8$, $SD = 0.8$; M (control group) $= 0.9$, $SD = 1.2$; $U_{(52)} = 319.0$, $p = 0.707$.

Other Behavioral Precursors

High contact frequency of patients with staff was observed and documented more often in the case group, M (case group) $= 2.0$, $SD = 1.7$; M (control group) $= 0.3$, $SD = 0.7$; $U_{(52)} = 152.0$, $p < 0.001$. Furthermore, patients were described as more demanding M (case group) $= 1.5$, $SD = 1.1$; M (control group) $= 0.6$, $SD = 0.9$; $U_{(52)} = 174.5$, $p = 0.002$, e.g., by asking repeatedly for something like being allowed to temporarily leave the ward,

TABLE 4 | Staff subjectivity.

	Case group ($n = 26$)			Control group ($n = 26$)			*p-value*
	n	*Frq*	*M ± SD*	*n*	*Frq*	*M ± SD*	
SUBJECTIVITY WITH NEGATIVE VALENCE							
Provoked/arduous	12	20	0.8 ± 1.1	0	0	0	<0.001[a]
Anxious	6	8	0.3 ± 0.6	0	0	0	0.010[a]
Pejorative	4	5	0.2 ± 0.5	0	0	0	0.057[a]
Total subjectivity with negative valence			1.3 ± 1.5			0	<0.001[a]
SUBJECTIVITY WITH POSITIVE VALENCE							
Enthusiastic	2	2	0.1 ± 0.3	3	4	0.2 ± 0.5	0.506[a]
Compassionate	10	13	0.5 ± 0.7	8	12	0.5 ± 0.8	0.564[a]
Total subjectivity with positive valence			0.6 ± 0.8			0.6 ± 0.9	0.850[a]
Total sum			**1.8 ± 1.6**			**0.6 ± 0.9**	**0.003[a]**

Valences are presented as dichotomous variables (sentiment occurs/does not occur), n indicating the number of patients where a specific sentiment occurs at least once during the observed days (days −3 to 0), Frq indicating number of days with at least one occurrence (days −3 to 0) summed up over all patients in the group, and M ± SD representing mean Frq per group (mean number of days where the sentiment occurred at least once for the group).

[a] *Mann-Whitney U-test.*

receiving cigarettes or food at inappropriate times, inappropriate request like being supplied with alcohol or cannabis, or by ringing the bell repeatedly) and refusing medication more often, *M* (case group) = 1.7, *SD* = 1.3; *M* (control group) = 0.1, *SD* = 0.4; $U_{(52)} = 96.0$, $p < 0.001$. Requests were denied more often in the case group, *M* (case group) = 1.1, *SD* = 1.1; *M* (control group) = 0.3, *SD* = 0.6; $U_{(52)} = 178.5$, $p = 0.001$, but there were no significant differences regarding the frequency of requests that were fulfilled between both groups, *M* (case group) = 0.2, *SD* = 0.4; *M* (control group) = 0.3, *SD* = 0.7; $U_{(52)} = 333.0$, $p = 0.894$.

Text Characteristics

The extracted narrative notes for the total sample of 52 patients had a mean total word count of 529.7 (*SD* = 296.6) words. Furthermore, narrative notes of the case group contained more words per treatment day than the control group, *M* (case group) = 639.8; *SD* = 322.5; *M* (control group) = 419.6; *SD* = 224.1; $U_{(52)} = 193.5$, $p = 0.008$.

The mean number of individual entries of notes per day over all 52 patients was 11.0 (*SD* = 2.4) with no significant differences between the groups, *M* (case group) = 10.4, *SD* = 2.5; *M* (control group) = 11.6, *SD* = 2.2; $U_{(52)} = 241.5$, $p = 0.074$.

Moreover, patients in the case group were cited more often via direct speech, *M* (case group) = 1.0, *SD* = 1.0; *M* (control group) = 0.3, *SD* = 0.7; $U_{(52)} = 198.5$, $p = 0.003$, most commonly to document patient quotes deemed important as exactly as possible (for examples cf. **Table 3**).

Prediction of Seclusion

Logistic regression was performed with word count, positive subjectivity, "unpredictable," sleep irregularities, and "manageable" as potential predictors of seclusion, yielding a highly significant model, $\chi^2(5) = 18.340$, $p = 0.003$, $n = 52$. Patients with a higher word count were at a 43.2% higher risk to get secluded, OR 1.432 per 100 words, $p = 0.018$, Nagelkerke $R^2 = 0.396$ (corresponding to a medium to high effect size). None of the other included variables emerged as significant predictors of seclusion in this multivariate analysis.

DISCUSSION

The current case-control study used a mixed methodological approach in order to examine whether precursors of seclusion can be identified in the narrative notes about acutely ill psychiatric inpatients as written by HCP, particularly with regard to subjectivity and emotional involvement. Various significant differences in staff documentation were identified between the groups. Thus, the current study found evidence supporting the hypothesis that an upcoming escalation is preceded by specific characteristics of staff narrative notes in the days before seclusion.

First, seclusion was significantly associated with higher word count in the current study. Notes in the case group were longer and more substantial, while the frequency of staff documentation entries per day showed no significant difference. In particular, a greater extent of behavioral terms and the use of direct speech were prominent in the staff notes describing patients before seclusion. It seems that staff describes problematic behavior more extensively and with different terms, potentially to improve information transfer between staff members working different shifts, to improve justification for upcoming coercive measures, and to ensure legal protection.

Secondly, seclusion was observed to be associated strongly with staff emotional involvement as measured by use of subjective expressions. Results also indicate that emotional involvement in the shape of "provocative/arduous" and "anxious" terms precede impending seclusion. This is remarkable, as staff documentation tends to minimize emotional content to enhance standardization, objectivity, professionalism, and appropriateness for use in potential lawsuits (50). Thus, it can be assumed that only a fraction of what an individual staff member was actually feeling or intending is documented in the their notes. Nevertheless, relevant differences concerning emotional involvement and subjective expressions remain in

TABLE 5 | Most frequently used behavioral terms.

	Case group ($n = 26$)			**Control group ($n = 26$)**			***p-value***
	n	***Frq***	***M ± SD***	***n***	***Frq***	***M ± SD***	
NEGATIVE VALENCE TERMS							
Agitated	16	41	1.6 ± 1.5	7	11	0.4 ± 0.8	0.003[b]
Irritable	16	25	1.0 ± 1.0	4	4	0.2 ± 0.6	0.001[b]
Loud/screaming	14	22	0.9 ± 1.0	2	3	0.1 ± 0.4	<0.001[b]
Obtrusive/pushy	13	20	0.9 ± 1.1	0	0	0	<0.001[b]
Restless	11	19	0.8 ± 1.1	6	8	0.3 ± 0.5	0.083[b]
Threatening	10	15	0.5 ± 0.7	0	0	0	0.001[b]
Dysphoric	10	15	0.7 ± 1.1	0	0	0	0.001[b]
Insulting/cursing	9	17	0.6 ± 1.0	1	2	0.0 ± 0.2	0.005[b]
Aggressive	7	11	0.4 ± 0.8	0	0	0	0.005[b]
Psychotic	7	11	0.5 ± 0.9	3	5	0.2 ± 0.6	0.162[b]
Bizarre/foolish	7	10	0.4 ± 0.7	0	0	0	0.005[b]
Provocative	8	10	0.4 ± 0.8	1	1	0.0 ± 0.2	0.010[b]
Volatile	6	9	0.4 ± 0.7	2	2	0.1 ± 0.3	0.115[b]
Distracted	5	8	0.3 ± 0.7	2	3	0.1 ± 0.3	0.205[b]
Total terms with negative valence			9.2 ± 6.5			1.5 ± 2.4	<0.001[b]
POSITIVE VALENCE TERMS							
Friendly	19	32	1.4 ± 1.1	20	41	1.5 ± 1.2	0.940[b]
Calm	14	21	1.0 ± 1.0	19	32	1.2 ± 1.0	0.310[b]
Relaxed	7	10	0.4 ± 0.7	11	13	0.5 ± 0.7	0.376[b]
Reachable	5	4	0.2 ± 0.5	9	12	0.5 ± 0.8	0.176[b]
Adequate	1	3	0.1 ± 0.4	9	11	0.5 ± 0.8	0.007[b]
Good mood	3	3	0.1 ± 0.3	6	9	0.3 ± 0.6	0.242[b]
Cooperative	2	3	0.1 ± 0.3	5	9	0.2 ± 0.5	0.654[b]
Organized	0	0	0	4	8	0.3 ± 0.7	0.039[b]
Total terms with positive valence			3.3 ± 2.2			5.0 ± 3.4	0.039[a]
OTHER TERMS[c]							
Manageable	13	21	0.8 ± 1.1	6	7	0.3 ± 0.5	0.035[b]
Unchanged	0	0	0	10	11	0.4 ± 0.5	<0.001[b]
Reclusive	6	8	0.3 ± 0.6	12	19	0.8 ± 1.0	0.054[b]
Sad	1	3	0.1 ± 0.4	4	8	0.3 ± 0.7	0.168[b]
Unpredictable[d]	3	3	0.1 ± 0.3	0	0	0	0.077[b]
Total terms with other valence			1.3 ± 1.2			1.7 ± 1.6	0.292[a]
Total sum			**13.8 ± 6.7**			**8.2 ± 4.3**	**0.001[a]**

Terms are presented as dichotomous variables (term occurs/does not occur), n indicating the number of patients where a specific term occurs at least once during the observed days (days −3 to 0), Frq indicating number of days with at least one occurrence (days −3 to 0) summed up over all patients in the group, and M ± SD representing mean Frq per group (mean number of days where the term occurred at least once for the group). Only terms with Frq ≥ 8 for at least one patient groups are presented.

[a] *t-Test.*

[b] *Mann-Whitney U-test.*

[c] *Terms that could not be classified as "negative" or "positive" valence.*

[d] *"Unpredictable" occurred <8 times, but appeared often in context of risk assessment before seclusion.*

the documentation on psychiatric intensive care units. It remains unclear if emotional involvement is only associated with problematic behavior or if it also contributes an escalation process leading to seclusion. Although there is a variety of possible underlying causes and triggers, there is evidence that staff emotions may contribute to seclusion. DeBenedictis et al. (51), e.g., identified a negative working climate, and especially anger and aggression among staff members, as resulting in a higher use of seclusion and restraint. In addition, the question rises if staff with a higher susceptibility for provocation or anxiety may be more likely to apply coercive measures. In-line with these considerations, paying greater attention to staff-patient interactions could help increasing awareness for unconscious and emotional processes (16) involved in escalation processes. Staff training in noticing their emotional state early and emphasizing patients' perception might constitute an important part of de-escalation trainings and help prevent coercive measures like seclusion (6, 14). In any case, emotional involvement in

TABLE 6 | Sleep behavior, high contact frequency, demanding behavior, requests, and non-compliance.

	Case group ($n = 26$)			Control group ($n = 26$)			*p-value*
	n	*Frq*	*M ± SD*	*n*	*Frq*	*M ± SD*	
Sleep behavior							
Insomnia	14	23	0.9 ± 1.0	4	5	0.2 ± 0.5	0.004[a]
Late Onset of sleep after 12 p.m.	16	19	0.7 ± 0.7	3	3	0.1 ± 0.3	<0.001[a]
Early awakening before 5 a.m.	10	13	0.5 ± 0.7	4	4	0.2 ± 0.4	0.047[a]
Sleep discontinuity	15	20	0.8 ± 0.8	12	22	0.9 ± 1.2	0.707[a]
Total sleep irregularities during 4 nights (yes/no)	**55**	**75**	**0.8 ± 1.0**	**23**	**34**	**0.3 ± 0.5**	**0.036**[a]
High contact frequency	17	52	2.0 ± 1.7	5	8	0.3 ± 0.7	<0.001[a]
Demanding behavior	22	40	1.5 ± 1.1	11	16	0.6 ± 0.9	0.002[a]
Met requests	5	5	0.2 ± 0.4	5	8	0.3 ± 0.7	0.894[a]
Denied requests	17	28	1.1 ± 1.1	5	7	0.3 ± 0.6	0.001[a]
Non-compliance	26	45	1.7 ± 1.3	11	16	0.1 ± 0.4	<0.001[a]

Dichotomous variables are presented (term occurs/does not occur), n indicating the number of patients where a specific term occurs at least once during the observed days (days −3 to 0), Frq indicating number of days with at least one occurrence (days −3 to 0) summed up over all patients in the group, and M ± SD representing mean Frq per group (mean number of days where the term occurred at least once for the group).

[a] *Mann-Whitney U-test.*

narrative case notes could serve as an early warning sign of an impending seclusion.

Altogether, subjective expressions were less prominent in narrative notes than expected. The style of describing patients was widely consistent and personal stylistic features in documentation were rarely notable. Based on our experience, attempts to be as objective as possible and to use a pragmatic language are widespread in hospital routine documentation in German speaking European countries. Sentiments and emotions are normally omitted when standardized documentation is disseminated due to legal and time management reasons. Hamilton et al. (50) described a patient's file as a "domain of management," where HCP "experience some compelling pressure to adopt, audit and report on their risk management strategies" (p. 90). The presented data raise the question if—in contrary to the current standards—there should be a regular place for subjectivity in psychiatric routine documentation, as it may represent an essential contribution to clinical assessment and may be helpful for the early detection of seclusion.

Third, as assumed, patient behavior preceding seclusion is significantly more often associated with negatively assessed terms like "agitated," "irritable," and "loud/screaming." Similar findings could be shown in a large study by Cullen et al. (36) were "restraint" and "shouting" showed the strongest likelihood of seclusion among all behavioral keywords. Although patients of the present study were equally perceived as "friendly" in both groups, there were—overall—more positively assessed terms in the control group. Patients in the control group were more often described as being "adequate" and "organized," and their behavioral amplitude was perceived to be less dynamic, described by the term "unchanged."

Fourth, patients before seclusion had a considerably higher frequency of insomnia. Sleep irregularities are a well-known comorbidity of patients with psychiatric diagnoses and amongst others associated with worsening of symptom severity in schizophrenia (52–54) and an increase in mania symptoms (55, 56). Consistent with previous studies, there is evidence for an association of poor sleep and aggressive behavior in psychiatric patients (57, 58). Despite this evidence for an association between sleep irregularities and coercive measures, which is corroborated by the current study's results, sleep disturbance has received little attention in previous studies analyzing antecedents of seclusion. In addition, patients in the case group were observed as more demanding and refused medication more often compared to patients in the control group. Staff denying patients' requests was present more often before seclusion, which is consistent with previous studies describing restrictions as a frequent antecedent of aggressive incidents (10, 20).

Fifth, specific terms appeared to serve as a personal evaluation of critical situations and personal risk assessment. "Manageable" appeared significantly more often in the case group, which may seem counterintuitive at first. However, "manageable" was applied in the context of problematic behavior that could still be handled, denoting that despite problematic behavior, staff did not deem coercive measures necessary at this time. Terms like "threatening" were exclusively used in the case group and in the context of seclusion. This is in line with the literature. In a study by Foster et al. (8), the main consequence of aggressive incidents was that staff members were feeling threatened. While not necessarily being subjected to actual threatening behavior, they seemed to feel a "threat of what might happen" (8).

The current study stands out due to the combination of quantitative and qualitative methods (59, 60). One of the strengths of a qualitative approach was the opportunity to determine unknown factors preceding seclusion. By including narrative notes not only of nursing staff but of all HCP, generalizability could be enhanced. Validity could be enhanced by independently performing assessments through two researchers with high interrater reliability, comparison with a control group, and inclusion of quantitative assessments. Matching the patients in a case-control study resulted in more homogeneous groups and improved comparability.

However, there are several notable limitations. Although interrater reliability has been assessed, the influence of subjectivity cannot be eliminated in qualitative analysis (61). Since the study evaluated notes written in German, it is unclear if the results can be generalized to settings with other languages or different cultural backgrounds. Furthermore, only patients with a minimum inpatient treatment duration of 3 days prior to seclusion could be considered, although seclusion already can occur in the first days of treatment with one third of aggressive incidents happening in the first seven days of admission (35). In addition, absconded patients could not be included in the analyses, as the study was focused on evaluating narrative notes in the days before seclusion, and assessments could not be performed when text entries were missing. Although the examined patient groups differ with regard to seclusion, they–indeed–also showed a different level of aggression. Therefore, the examined case note characteristics are not attributable to a development leading to seclusion independently of aggression, and the influence of seclusion and aggression cannot be disentangled with the current approach. In- and exclusion criteria therefore introduced a potential selection bias. Furthermore, the study only used retrospectively available data, leading to several limitations, e.g., the underreporting of aggressive events (35) and of subsequent interventions. In addition, although the current study's sample size is adequate for qualitative assessment (62), further replication studies with larger samples are needed.

CONCLUSIONS

Despite professionalism and self-imposed reduction of emotional and subjective content, narrative notes of healthcare professionals still contain normally unused information that is associated with coercive measures like seclusion as early as 3 days before these events. This information might improve risk assessment as well as the early prediction and intervention of aggressive incidents.

Furthermore, the present study indicates that narrative notes should not be completely superseded by fully standardized documentation. Moreover, integrating subjectivity and emotional content in a way compatible with current standards could improve the clinical usability of routine documentation. Integration of a subjective perspective could be technically implemented by introducing an extra text-field dedicated to subjective perception, countertransference, or more subjective personal remarks (e.g., "I was very scared, my colleague hid in the corner of the room.") into routine electronic documentation. This would probably not lead to a relevant increase in documentation efforts, since the writing process is performed intuitively and without being censored. Text-analysis and evaluation of the risk level would be performed automatically after documentation is finalized. This is, e.g., achievable by generating computerized algorithms for subjectivity and using machine learning on the basis of natural language processing. This approach also allows to include data from structured risk-assessment instruments into the analysis. Apart from the acquisition costs of an appropriate software solution, no additional financial burden is to be expected, as narrative notes are immediately available for the software in most current documentation systems.

In the present study, factors not routinely used for risk assessment like subjective statements, sleep disturbance, and narrative note word count were associated with seclusion. If these results can be replicated and remain valid especially in a prospective setting, e.g., word count could become an economical and simple predictor for escalation. The implementation of automated text analysis would enable routine use of narrative notes in the early detection and prevention of violence and coercion, and this has to be examined in future studies.

DATA AVAILABILITY

The raw data supporting the conclusions of this manuscript will be made available by the authors, without undue reservation, to any qualified researcher.

AUTHOR CONTRIBUTIONS

CS and CH designed the study, analyzed, and interpreted the data. CS and JS collected the data. CS wrote the initial draft of the manuscript. CS had full access to all the data in the study and takes responsibility for the integrity of the data, and the accuracy of data analysis. CS, JS, MW, SB, UL, and CH revised the article critically for important intellectual content and approved the final version of the manuscript.

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Predictors of Compulsory Re-admission to Psychiatric Inpatient Care

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Objective: This prospective study addresses risk factors of compulsory re-admission focusing on the role of the patient's subjective symptom distress and perceived social support, based on comprehensive patient and external (clinicians, study staff) assessments.

Methods: Of the baseline sample, 168 (71%) patients with serious mental disorders, who had been compulsorily admitted to psychiatric inpatient care, were followed over 24 months after discharge within the framework of a RCT.

Results: During this time 36% had compulsory re-admissions; risk was highest immediately after discharge. Regression models identified a history of previous compulsory hospitalisations and compulsory admission due to endangerment of others as the predictors most strongly associated with the outcome. Patients diagnosed with a psychotic disorder or an emotionally instable or combined personality disorder were most likely to experience compulsory re-hospitalisation, with poor response to treatment further significantly increasing the risk. The patient ratings of subjective symptom distress or perceived social support had no predictive value for compulsory re-admission, and this study did not provide evidence for a significant prognostic relevance of sociodemographic background factors.

Conclusions: The present findings suggest that within individual-level variables disease-related factors are essentially the strongest predictors, but including the patients' subjective perspective does not enhance the prediction of compulsory re-hospitalisation. The psychiatric treatment of patients with recurrent and often challenging behavioural problems, at the more severe end of the spectrum of mental disorders, deserves closer attention if the use of compulsory hospitalisation is to be reduced.

Keywords: compulsory psychiatric hospitalisation, severe mental disorders, psychotic disorder, personality disorder, risk factors, prospective study

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INTRODUCTION

A substantial number of patients are compulsorily admitted to psychiatric inpatient care throughout Europe (1–7) and many of them experience repeated compulsory admissions. Data of the Federal Office of Statistics suggest that between 15 and 21% of all psychiatric admissions in Switzerland were compulsory (years 2002–2009; Canton of Zurich: between 23 and 29%) (8).

Compulsory hospitalisation affects an individual's personal interests and autonomy profoundly, thus touching basic human rights, and should be considered only as a measure of last resort for persons who cannot be helped by other means in a less restrictive setting. The comparatively high rates observed in some countries underline the need to scrutinise the use of compulsory measures in psychiatry. This is what has been advocated by professionals, politicians, patients' and human rights organisations for years, campaigning to reduce the number of compulsory psychiatric admissions.

On that account it is important to identify risk factors for compulsory hospitalisation, especially factors which could be addressed proactively by preventive measures or treatment. However, our knowledge of the factors determining the clinical need for compulsory treatment, is still limited. Serious endangerment of self or others is the main prerequisite for compulsory admission to psychiatry in all Western countries, as it is in Switzerland, too. Nevertheless, it is difficult to predict in which cases endangerment of self or others will lead to compulsory hospitalisation. Moreover, in acute psychiatry no specific prognostic tools exist that might help guide decisions regarding post-discharge monitoring, treatment or rehabilitation planning to prevent further compulsory re-hospitalisation.

The preconditions for compulsory admission to psychiatric care are multifaceted, comprising not only a person's current violent or suicidal behaviour, but also aspects of their patient history, treatment motivation, and social and other contextual factors (9–11). Among the patient-related factors known to be associated with increased endangerment of self or others is the type of disorder: high rates of compulsory admission have been reported most consistently for psychotic, schizophrenic or delusional, disorders (12–14), but also for persons with a history of substance abuse (15). Regarding sociodemographic background factors, an increased risk has been repeatedly reported for ethnic minorities (16), in particular non-white or Black people (17). Several studies have found that male gender (14–16) and being unmarried or living alone (12–15, 18) are associated with a higher risk of compulsory hospitalisation. But there are also other studies in which these factors were not confirmed or have been attributed to underlying mediators (14–16, 18, 19).

It is obvious that a comparison of findings across different countries and mental health care systems is difficult, considering that inconsistencies also might in part mirror population composition, configurations of mental health services, as well as professionals' ethics and attitudes (20, 21). Beyond this, research on compulsory hospitalisation has some limitations so far:

- To explore risk factors, psychiatry usually has to recourse to non-experimental designs and most research in this field also rests on cross-sectional data. Lessons that may be learned by retrospectively searching for predictors therefore are almost inevitably limited, revealing correlates rather than "true" risk factors. To assess the incidence of compulsory admissions and risk (or protective) factors prospective studies are necessary. However, only few studies have adopted a longitudinal (cohort) perspective (e.g., Amsterdam Study of Acute Psychiatry (22–24).
- Many analyses focused on specific patient groups, as e.g., (first admitted) subjects with psychosis (25, 26), narrow age categories (25, 27) (adolescents; <50 years old), specific service settings, as e.g., compulsory community treatment (28) or selected countries or areas (14, 26, 29).
- Moreover, many studies are based solely on routinely collected hospital data or retrospective chart reviews (12, 27–29), thus restricting the range of potentially important factors, direct risk factors as well as confounders.
- Studies exploring the subjective perspective of psychiatric patients are scarce and if at all, often adopted a narrow focus on the patients' retrospective view on their involuntary hospitalisation (30–32). It is unclear whether the patients' subjective symptom distress or their perceived social support might contribute to the prediction of further severe crises rendering these patients more likely to experience compulsory re-admissions.

In this situation long-term studies closely monitoring the clinical course of mental patients might help define the risk and guide treatment planning so as to prevent further coercive measures.

We therefore re-analysed data from a prospective clinical trial in which a group of patients with serious mental disorder and compulsory hospitalisation(s) in the past were followed over 24 months after discharge. We used a comprehensive multiaxial assessment (clinicians, study staff, patient ratings) at discharge from the hospital to determine predictors of compulsory re-admission.

Specifically, we address the following questions:

- Do patients' ratings reflecting their subjective view on symptom distress and perceived social support predict compulsory re-admission after discharge from psychiatric inpatient care and
- which are the most important predictors within this multiaxial personal (patient) and external (clinicians/study staff) assessment?

Beyond that, we aimed to find out to which extent the patients' self-ratings of their mental health functioning correspond to clinical staff ratings.

MATERIALS AND METHODS

Sample

The sample for this study is drawn from a randomised trial to evaluate an intervention programme targeting the prevention of compulsory admission to psychiatric inpatient care. Participants were recruited from a naturalistic user sample of inpatient mental health care in four psychiatric hospitals mandated to provide psychiatric care to adults in the Canton of Zurich, Switzerland. Patients aged 18–65 years who had been compulsorily admitted to psychiatric inpatient care at least once during the past 24 months were included in this study. Participation was not limited to a specific mental disorder, but patients diagnosed with an organic mental disorder (ICD-10: F0), mental retardation (F7) or a behavioural syndrome associated with physical factors (F5) were not included. Furthermore, individuals who could not be contacted by telephone and those with insufficient language skills were not eligible for inclusion either.

Procedure and Clinical Assessments

After having given informed consent, patients were randomised to the intervention group or a treatment as usual (TAU) comparison group. The intervention programme is described in detail elsewhere (33). In brief, it consisted of: (a) individualised psycho-education focusing on behaviours prior to and during an illness-related crisis, (b) working out a crisis card with the patient and, after discharge from psychiatric inpatient care, (c) a 24-month preventive monitoring based on an individualised checklist. This checklist covered the personal risk factors for relapse (e.g., familial, work or financial problems), personal and social resources as well as information on treatment-related behaviour and use of mental health care services.

Baseline assessment included retrospective data on the patient's history, current psychopathology, individual risk factors and protective factors for further compulsory readmission. Baseline interviews were carried out during a participant's inpatient stay (generally over several sessions), before discharge from the hospital. After discharge from the hospital, mental health care use was assessed in regular telephone contacts. Twelve and 24 months after baseline a comprehensive follow-up assessment was carried out again by means of face-to-face interviews. Interviews were conducted by the members of the study staff, all of them graduated clinical psychologists.

Measures

Clinical diagnoses as well as data on sociodemographic status, occupational and living situation were retrieved from the patients' medical files. Psychiatric diagnoses were made by the hospital physicians in charge at the participating study centres.

Patients' file data on social background and patients' history were supplemented by information obtained from a structured patient interview. We used the German adaptation of the Client Sociodemographic and Service Receipt Inventory CSSRI-EU (34, 35) to assess detailed information about patients' lifetime service utilisation. If a patient's statement conflicted with information in the patient's file ambiguities were clarified during the baseline assessment. In the same way, mental health care use was determined prospectively by retrieving care-related data from the patients' files (review of medical records over the entire study period) and by information from the study participants using the CSSRI-EU. Thus, the frequency and duration of voluntary and compulsory psychiatric inpatient care episodes (and psychiatric outpatient care) were determined.

The Global Assessment of Functioning Scale GAF of the DSM-IV (36) was applied to assess the patient's global level of psychological, social and occupational functioning. The GAF measures how much a person's symptoms affect his or her daily life on a scale ranging from 1 (severely impaired) to 100 (extremely high functioning).

Moreover, the baseline interviews covered specific problem areas which were considered important for the further course of the disorder, as they might relate to symptom aggravation and compulsory admission. These items were rated using all available information from the participant and (responsiveness to treatment) from the medical files. Ratings were dichotomised (1 = severe problems; 0 = no or only minor problems in this area), "severe problem behaviour" being operationalised as follows:

Partner relationship: Unstable, very conflictual relationship (including severe or continued violence); or rapidly changing partnerships; or age > 30 y and no permanent relationship to date.

Working: Severe or continued problems at work; or person (capable of work) refuses to apply for a job; or left employment or was fired within short periods of time. For persons unemployable on the regular labour market, rating was based on sheltered employment, occupational therapy or other respective types of occupation.

Responsiveness to treatment: Lack of response to current or recent treatment (for whatever reason; includes patients who did not accept the recommended treatment measures or dropped out of medical treatment).

To assess the patient's symptomatic distress the Outcome Questionnaire OQ-45 (37) was applied. This self-report questionnaire is widely used in clinical settings to estimate the patient's current mental health functioning and changes over the course of treatment. It comprises 45 items to be rated on a five-point scale (0 = "never"; 1 = "rarely"; 2 = "sometimes"; 3 = "frequently"; 4 = "almost always"). The scale provides an index of mental health functioning (total score) and three subscale scores: symptomatic distress or subjective discomfort (SD), interpersonal relationships with intimate others (IR), and functioning in social roles such as work, homemaking, and leisure activities (SR).

The patients were also asked to rate their perceived social support. The Berlin Social Support Scales BSSS (38), a battery of self-report questionnaires, was applied to measure (1) perceived available support; this scale refers to the anticipated possibility of receiving emotional (4 items) and instrumental support (4 items) in the future; (2) need for support (4 items) and (3) support-seeking (5 items). Patients rate their agreement with the statements on a 4-point scale (1= "strongly disagree" to 4 = "strongly agree").

Statistical Methods

We analysed the time to the first compulsory re-admission after discharge from psychiatric inpatient care as the main outcome measure. Time to compulsory admission was calculated from the retrieved re-admission dates on an exact monthly basis. Observation time was limited to 24 months, after that observations were censored.

The baseline variables specified in **Table 1** were considered as "explanatory" variables. In a first step we examined these variables in a bivariate analysis using Pearson correlations. In order to quantify the impact of clinical and social characteristics of patients on the outcome, we carried out Cox (proportional hazard) regression analyses. To model the relationship with "age" we added a quadratic term to allow for non-linearity. The significance level was fixed at 0.05 (two-tailed) in all tests.

To identify a set of explanatory variables that contribute significantly to the risk of compulsory re-admission we fitted a Cox regression model using backward stepwise variable selection based on likelihood ratio statistics. As candidate variables we considered covariates with coefficient *P*-values of < 0.1 in the bivariate regression analyses. Moreover, we checked whether an

TABLE 1 | Sample characteristics and univariate associations between baseline variables and compulsory re-admission within 24 months (Cox regression analyses; *N* = 168).

	***N* (%) or Mean ± SD**	**HR**	**95% CI**	***P*-value**
Intervention group	75 (44.6)	0.61	0.36−1.03	0.065
TAU group (*reference*)	93 (55.4)			
Socio-demographic data				
Age (years)[a]	44.7 ± 11.5	1.12	0.94−1.32	0.205
Sex: female (*reference*)	96 (57.1)			
Male	72 (42.9)	0.60	0.35−1.03	0.065
Living situation: Alone (*reference*)	82 (48.8)			0.550
With child(ren)	12 (7.1)	1.25	0.48−3.22	0.650
With partner/children	40 (23.8)	0.77	0.39−1.51	0.450
With others/unknown	34 (20.2)	1.32	0.71−2.46	0.387
Occupation: Unemployed/home-maker (*reference*)	107 (63.7)			0.121
Sheltered employment	17 (10.1)	1.33	0.62−2.83	0.462
Regular labour market	44 (26.2)	0.55	0.28−1.07	0.079
Swiss national (*reference*)	143 (85.1)			
Foreign national	25 (14.9)	1.19	0.60−2.34	0.616
Patient history/clinical data				
Duration of illness (years)	17.6 ± 12.7	1.00	0.98−1.02	0.773
First compulsory admission (*reference*)	66 (39.3)			
Compulsory admission(s) in patient history	102 (60.7)	2.81	1.52−5.20	0.001
Compulsory admission due to:				
Danger to self (reference)	121 (72.0)			
Danger to others	47 (28.0)	2.05	1.23−3.43	0.006
Substance use disorder	33 (19.6)	0.67	0.34−1.42	0.319
Schizophrenia, bipolar disorder, mania	70 (41.7)	1.98	1.19 −3.28	0.008
Personality disorder	21 (12.5)	1.73	0.90−3.33	0.099
Other disorders	44 (26.2)	0.30	0.14 −0.67	0.003
Global clinical ratings				
GAF	39.4 ± 10.7	1.00	0.97−1.02	0.750
Relationship-severe problems	20 (12.3)	0.78	0.34−1.81	0.564
Employment-severe problems	70 (42.4)	1.58	0.95−2.63	0.081
Poor response to psychiatric treatment	28 (16.7)	2.07	1.15−3.71	0.015
Patient ratings				
OQ-45 Symptom distress	1.53 ± 0.68	0.75	0.51−1.07	0.137
OQ-45 Interpersonal relations	1.45 ± 0.59	1.15	0.75−1.76	0.525
OQ-45 Social role	1.40 ± 0.64	0.90	0.60−1.35	0.621
OQ-45 Total score	1.46 ± 0.56	0.88	0.56−1.38	0.581
BSSS Perceived support	3.06 ± 0.55	0.76	0.48−1.19	0.230
BSSS Need for support	2.61 ± 0.63	0.86	0.58−1.28	0.466
BSSS Support seeking	2.63 ± 0.57	1.13	0.73−1.76	0.580

TAU, Treatment as usual; SD, Standard deviation; HR, Hazard ratio for being compulsorily re-admitted; CI, confidence interval.

[a] *The age model included a quadratic term to allow for non-linearity.*

extended Cox-model including a time-dependent intervention effect fitted the data. Since the effect of this time-varying covariate was statistically not significant, it was not further considered in our regression models.

To compare the frequency distribution of the "explanatory" variables included in the Cox regression models (**Table 3**) between the two treatment groups in the follow-up sample ($n = 168$) we performed Chi-square tests using exact significance levels.

We computed Kaplan-Meier product limit estimates of survival to illustrate the effects of particular significant predictors. The survival curves displaying the estimated survival probabilities (estimated percentages of subjects not compulsorily re-admitted after discharge from psychiatric inpatient care) thus are compared for subjects with vs. those without compulsory admissions in their patient history (**Figure 1**) and for different diagnostic groups (**Figure 2**). Statistical analyses were carried out using SPSS 25.

RESULTS

Sample Characteristics

Of the 238 participants included in this study, 168 (70.6% of the baseline sample) remained in the study up to the 24 month follow-up. **Table 1** provides the baseline sample characteristics of the 168 participants with follow-up assessments over 24 months. The participants suffered from a broad range of mental diseases, of which psychotic disorders were most prevalent: 46 were diagnosed with a schizophrenic disorder (ICD-10: F2), 24 with a mania or bipolar disorder (F30; F31). Across all diagnostic groups psychiatric comorbidity was common and most of the participants showed serious and /or persistent behaviour problems. For the majority of this sample (60.7%) it was not the first compulsory admission, and roughly one in three participant (54; 32.1%) had already experienced four or more compulsory admissions to psychiatric inpatient care in the past.

Regarding their sociodemographic background the sample (mean age: 45 years; 56.0% between 35 and 55 years) is characterised by a high rate of participants living alone and not employed on the regular labour market.

Corresponding to the severity of the disorders, the level of functional impairments was high: according to the Global Assessment of Functioning (staff ratings) the patients showed major impairment in several areas, such as work or school, family relations, judgment, thinking, or mood (mean GAF score: 39.4 ± 10.7).

OQ-45 mean scale scores (patient ratings) ranged between 1 and 2 in all domains. This suggests that the patients themselves described their current mental health functioning at discharge as "rarely" or "sometimes" experiencing symptomatic distress, or distress with respect to interpersonal relationships or social roles.

According to the Berlin Social Support Scale "perceived support" they perceived some degree of social support (mean score 3.1; equal to "somewhat agree"). Regarding the aspects "need for support" and "support-seeking" (with average scale values of 2.6) the patients' ratings are in the middle of the scale, ranging between "disagree" and "agree."

Relationship Between Baseline Measures

Pearson's correlation coefficients indicate high correlations between all OQ-45 measures (subscale scores SD, IR, SR, and OQ-total) and moderate to high correlations between the BSSS subscale scores (**Table 2**). Likewise, the (staff) Global Assessment of Functioning was consistent with the staff ratings of specific problem areas (significant negative correlations). Low level of functioning (GAF), e.g., was significantly associated in particular with severe or continued problems at work, but also with inadequate response to treatment.

Between staff ratings and patients' self-report ratings, however, only limited correspondences were found. The GAF level of functioning showed a significant negative correlation with (OQ-) symptom distress and the OQ-total score, but no significant association was apparent with regard to the other OQ domains (interpersonal relations; social role functioning) or the BSSS ratings ("perceived support"; "need for support"; "support-seeking").

Remarkably, we found no evidence of a significant correlation between the duration of the illness and the patients' perceived mental health functioning (OQ-45 subscales) or perceived social support (BSSS subscales).

Likewise, there was no indication of sex-specific differences in the perception of social support (BSSS subscale means: no significant differences). There were slight (statistically significant) differences, however, depending on the patients' living situation: the 40 patients who were "living together in a family or with a partner" reported the lowest support-seeking scores (BSSS subscale "support-seeking": mean 2.44 ± 0.53), whereas the highest scores were found in the single-parent group (mean 2.83 $\pm$ 0.65; Living situation: $F = 3.303$; 3 df; $p = 0.022$).

Compulsory Re-admissions Over 24 Months

During the 24 month follow-up period after discharge from psychiatric inpatient care, 61 of the 168 participants were compulsorily re-admitted to psychiatry: 21 from the intervention group and 40 from the TAU group. A detailed analysis of intervention effects which is not the subject of the present paper is given in Lay et al. (39). In individual cases up to 5 compulsory re-admissions were registered during the 24-month follow-up period.

At 9 compulsory re-admissions within the first month, the number peaked immediately after discharge from psychiatric inpatient care; the likelihood of a first compulsory re-admission then gradually declined over time. The Kaplan-Meier survival curves given in **Figures 1**, **2** clearly show this risk curve.

Predicting Compulsory Re-admission

(1) The results of univariate Cox regression analyses revealed that a series of patient characteristics are related to the risk of compulsory re-admission (**Table 1**). The factors increasing the risk most strongly originated in the patients' history and psychopathology: in particular subjects already with compulsory admissions in their patient history (HR 1.78), with compulsory admissions

TABLE 2 | Relationship between ratings by patients, ratings by study staff and patient characteristics at baseline.

		Age	Duration of illness	OQ SD	OQ IR	OQ SR	OQ total	BSSS PS	BSSS NS	BSSS SS	GAF	Relation-ships problems	Employ-ment problems	Response to treatment
Age	*r*	1	0.382	−0.106	−0.031	−0.086	−0.086	−0.095	−0.161	−0.179	0.083	−0.039	−0.041	−0.006
	P		0.000	0.173	0.693	0.272	0.270	0.226	0.038	0.021	0.283	0.623	0.600	0.935
Duration of illness	*r*		1	0.106	0.182	0.108	0.148	−0.040	−0.047	−0.027	−0.220	−0.012	0.078	−0.075
	P			0.177	0.020	0.172	0.060	0.615	0.551	0.731	0.005	0.882	0.325	0.338
OQ SD	*r*			1	0.670	0.713	0.908	−0.284	0.267	−0.122	−0.217	0.175	0.182	0.168
	P				0.000	0.000	0.000	0.000	0.001	0.119	0.005	0.026	0.020	0.031
OQ IR	*r*				1	0.617	0.855	−0.414	0.082	−0.219	−0.067	0.134	0.132	0.165
	P					0.000	0.000	0.000	0.295	0.005	0.390	0.090	0.094	0.034
OQ SR	*r*					1	0.883	−0.238	0.195	−0.054	−0.149	0.117	0.206	0.138
	P						0.000	0.002	0.012	0.489	0.056	0.140	0.008	0.076
OQ total	*r*						1	−0.349	0.210	−0.146	−0.167	0.162	0.198	0.178
	P							0.000	0.007	0.062	0.031	0.040	0.011	0.022
BSSS PS	*r*							1	0.183	0.454	0.085	−0.189	−0.113	−0.143
	P								0.018	0.000	0.277	0.017	0.152	0.065
BSSS NS	*r*								1	0.531	−0.033	0.066	0.042	0.011
	P									0.000	0.671	0.407	0.593	0.888
BSSS SS	*r*									1	−0.033	−0.016	0.008	−0.133
	P										0.674	0.844	0.921	0.088
GAF	*r*										1	−0.210	−0.303	−0.255
	P											0.007	0.000	0.001
Relationships problems	*r*											1	0.232	0.078
	P												0.003	0.325
Employment problems	*r*												1	0.363
	P													0.000
Response to treatment	*r*													1
	N	168	164	166	166	166	166	166	166	166	168	163	165	168

r, Pearson correlation coefficient; P, P-value.

TABLE 3 | Risk factors for compulsory re-admission within 24 months (Cox regression).

	Model 1			Model 2		
	HR	95% CI	*P*-value	HR	95% CI	*P*-value
First compulsory admission (reference)						
Compulsory admission(s) in patient history	2.48	1.32−4.65	0.005			
Compulsory admission due to:						
Danger to self (reference)						
Danger to others	1.82	1.05− 3.15	0.032	1.79	1.01−3.16	0.045
Schizophrenia, bipolar disorder, mania				2.16	1.14−4.09	0.018
Personality disorder				2.55	1.15−5.63	0.021
Poor response to psychiatric treatment				1.93	1.04−3.58	0.037
TAU group (reference)						
Intervention group	0.55	0.32−0.95	0.030	0.56	0.32−0.96	0.036

TAU, Treatment as usual; HR, Hazard ratio; CI, confidence interval.
Model 1: $Chi^2 = 19.225$; df 3; $P < 0.001$; −2Log-Likelihood = 560.518.
Model 2: $Chi^2 = 26.383$; df 5; $P < 0.001$; −2Log-Likelihood = 575.761.

due to severe danger to others (HR 2.05), the diagnosis of a psychotic disorder (HR 1.98) or a personality disorder (HR 1.73) were at a significantly increased risk of compulsory re-admission.

As to sociodemographic patient characteristics, we did not find statistically significant effects. Nor did the patients' subjective ratings of mental health functioning (OQ-45) or social support (BSSS), predict compulsory re-admission. Among the clinical ratings by the staff, "poor treatment response" was the only significant indicator of an increased risk of compulsory re-admission (HR 2.07).

(2) Results of a multivariate analysis controlling for effects of the intervention showed two significant predictors (**Table 3,** model 1): "Compulsory admission(s) in the patient history," suggestive of a 2.48 times higher hazard, as compared to "no previous compulsory admissions," and "endangerment of others" as compared to "endangerment of self" (1.82 times higher hazard).

Considering that "compulsory admission(s) in the patient history" is a variable, in itself in need of an explanation, rather than explaining the outcome, we fitted a second regression model, omitting this "proxy" variable in order to bring out deeper-seated factors associated with the outcome. According to this Cox regression model 2 an increased risk of compulsory re-admission is associated in particular with specific mental disorders: the highest hazards were observed for personality disorders (HR 2.55) and psychotic disorders (HR 2.16). Beyond the nature of the mental disorder, poor response to treatment emerged as a further significant predictor (HR 1.93). Moreover, "endangerment of others" (again) was included in the model, suggesting a further risk increase by factor 1.79 given all other variables controlled in the model.

Aside from these patient characteristics, model 1 and model 2 both suggest that participants from the intervention group were less likely to be compulsorily re-admitted than those from the TAU group.

By way of example, the impact of two of the predictors is illustrated by means of the Kaplan-Meier survival curves: **Figure 1** compares the Kaplan-Meier plot for patients with a first compulsory admission (baseline assessment) and patients with previous compulsory admissions in their patient history. **Figure 2** shows the survival curves for different diagnostic groups, i.e., the proportion "surviving" without further compulsory re-admission in each group.

(3) Our regression models are based on patients who achieved the 24 month follow-up (70.6% of the baseline sample). We lost in this RCT significantly more patients in the intervention group (44; 37.0%) than in the TAU group (26; 21.8%). Therefore, dropout effects could have biased our models. To investigate whether the predictor variables given in **Table 3** were differentially affected by sample attrition, we tested whether the frequency distribution of the predictor variables is equally distributed across the two groups.

Results did not show statistically significant differences in any of these variables (First compulsory admission $chi^2 = 0.022$, $p = 1.00$; Compulsory admission due to danger to self/others $chi^2 = 1.930$, $p = 0.172$; Schizophrenia $chi^2 = 1.790$, $p = 0.209$; Personality disorder $chi^2 = 0.582$, $p = 0.488$; Poor response to treatment $chi^2 = 0.043$, $p = 1.00$; all variables df = 1). This suggests that the different attrition rate in the intervention and the TAU group over 24 months had no significant impact on the distribution of the predictor variables in the regression models.

DISCUSSION

This study is a prospective long-term follow-up of 168 psychiatric in patients with severe mental illness who already had experienced compulsory admission(s) to psychiatric inpatient care. During the 24 months the study participants were followed after discharge, 36.3% had compulsory re-admissions. The present findings suggest that the risk of compulsory re-hospitalisation is particularly high immediately after discharge from psychiatric inpatient care, then gradually decreases, but is noticeably lower only after 12 months.

To determine risk factors of compulsory re-admission we investigated clinical and social information from the patients'

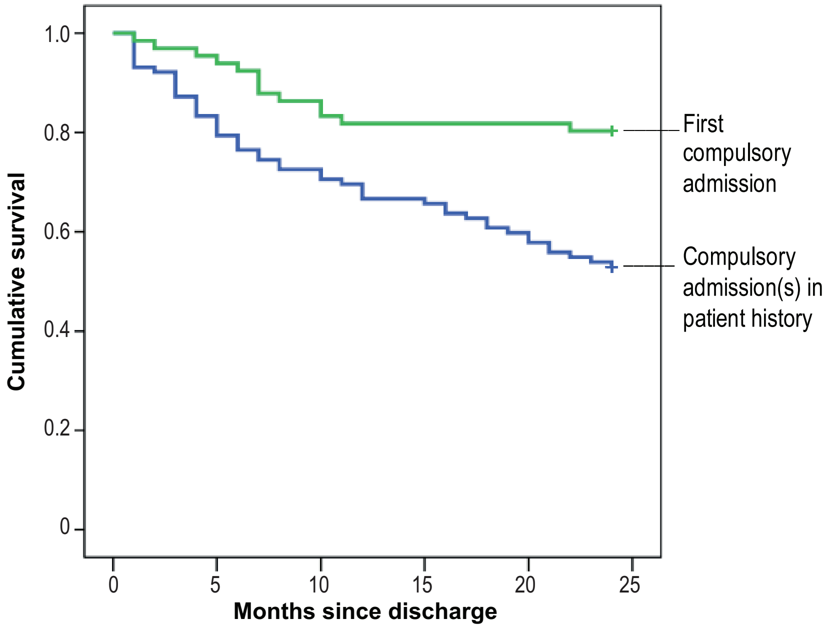

FIGURE 1 | Cumulative risk of compulsory re-admission among patients with vs. those without compulsory admission(s) in their patient history.

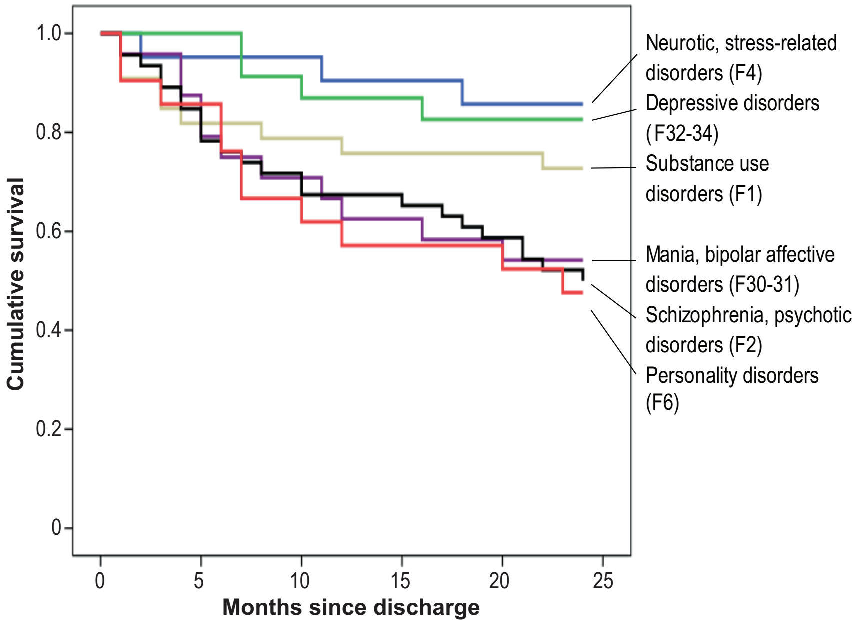

FIGURE 2 | Cumulative risk of compulsory re-admission, by psychiatric diagnosis.

perspective, in addition to standard disease-related and socio-demographic data (assessed by clinicians, study staff).

Predictors of Compulsory Re-admission

(1) *Clinical measures*. According to our regression models the strongest predictors were "clinical" measures: patients with compulsory psychiatric admissions (already) in their patient history were most likely to experience a compulsory re-admission, in particular those for whom serious endangerment of others, i.e., aggressive, violent behaviour, was the reason for hospitalisation. Regarding the psychiatric diagnosis, patients diagnosed with a personality disorder or a psychotic disorder were at the highest risk. The predictors of the present analysis are largely consistent with previous findings: "A

history of involuntary admissions proved to be the only independent predictor of involuntary re-admission" in the prospective follow-up study reported by Setkowsky et al. (23) and van der Post et al. (40). Likewise, functional psychoses (12, 13, 16, 19, 29) and more severe symptoms (15, 16) have been repeatedly reported to increase the risk of compulsory hospitalisation.

Personality disorders, in the present study emotionally unstable (ICD F60.3) or mixed personality disorders (F61.0), however, did not appear to be associated with the incidence of compulsory re-admission in previous research. It is not clear whether this is due to the fact that personality disorders are rarely analysed separately, rather typically subsumed under an "other disorder"-category, or whether they are underdiagnosed in medical charts or whether these studies did not have enough power to prove a statistical significant effect. Not least, it might reflect varying admission decision-making processes as regards the indication of hospitalisation in personality disorders (10).

Nevertheless: there is a problem with "predictors" like "higher number of previous compulsory admissions," "major mental disorder" or "more severe symptoms," even if they are indeed well confirmed: Though they are plausible and might be useful for descriptive purposes, they are not free from tautology. Previous hospitalisations, e.g., are exactly the result of a process the prevention of which is at issue. They are limited therefore in terms of explanatory power and practical information.

(2) *Ratings by the study staff*. Among the set of ratings made by the study staff only the rating referring to the "response to treatment" was a significant predictor in the present study: patients rated as non-responsive to the current (inpatient) treatment were more likely to experience a compulsory re-admission after discharge from psychiatric inpatient care. This effect might be attributed to lack of motivation and difficulties relating thereto in treating these people, a factor that has been reported to be directly associated with involuntary admission (10, 15). In this context, however, it also should be taken into account that the diagnoses found to be associated with a significantly increased risk are precisely those regarded as gravely interfering with insight into the illness. In terms of the diagnostic spectrum (as well as their social backgrounds) it appears that the present sample has much in common with "high utilizers" of psychiatric services: persons characterised by comparatively disturbed behaviour, aggression, suicidality, manipulative behaviour, with low social adjustment and limited personal relationships (11). A further point to be considered is the therapeutic alliance, which is well known to be related to various types of outcomes (41). The quality of the therapeutic alliance is likely to play a crucial role in whether a patient refuses to accept the recommended treatment, thereby moderating the non-response-outcome association.

(3) *Patient ratings*. A special focus of our study was on the subjective patient view. In particular, we pursued the question of whether the patient-reported symptom distress (symptomatic distress or subjective discomfort, interpersonal relationships with intimate others, functioning in social roles; measured by the OQ-45) and the perceived social support (perceived available emotional and instrumental support, need for support, support-seeking; BSSS) contribute to the prediction of compulsory re-admission. The underlying idea was that these factors might be associated with further serious crises. None of these measures, however, was found to be linked in any clinically meaningful or statistically significant way to the risk of compulsory readmission.

Regarding the OQ-45 the patient ratings suggested an unproblematic level of mental health functioning. Considering that this assessment was made before discharge from psychiatric inpatient care, a relatively high level of adjustment might not quite be unexpected. The self-reported ratings, however, do not match very well to the assessment by the study staff: the ratings of both interpersonal relationships and social role functioning did not correlate significantly with the respective staff ratings, and only weak associations (statistically significant, but low correlations) were found between symptom distress, OQ total score (patient ratings) and the GAF score (staff rating). Of course, the weak association between self-ratings and clinical ratings does not argue against self- assessments. Rather, it might be explained by different perspectives: the yardstick for the clinician's rating of social and psychological functioning usually ranges between superior functioning and severe impairment. Nonetheless, the patients will make an assessment against the background of their individual biography and (implicitly) compare the current state against how they were doing in the past. Moreover, one should bear in mind that the different instruments used for self-assessment and external ratings basically restrict direct comparisons.

Notwithstanding this, neither the patients' self-ratings nor the clinical staff ratings of functional impairment (GAF as well as the assessment of specific problem areas: partner relationship, working) appear to be useful predictors of compulsory readmission. The present findings, therefore, more likely suggest that the type of the mental disorder and the severity of behavioural problems are the factors decisive as to whether a patient returns to compulsory hospitalisation, rather than the patient's functional (social) impairment.

The second domain the patients had to evaluate were cognitive and behavioural aspects of "perceived social support." There is compelling evidence that social support is importantly associated with mental health status in various ways (coping with stress, quality of life, mortality risk (42–44). Low social support also has been reported to be a factor that increases the likelihood of emergency compulsory admission (9).

The patients' ratings on the BSSS subscale "support-seeking" corresponded quite understandably to their living situation (alone, with partner, with children, with others). This suggests that the respondents indeed provided a differentiated assessment of their help-seeking behaviour. Even so, the results of the present study did not provide evidence that any of the BSSS domains of perceived social support is associated with the risk of compulsory re-hospitalisation.

The differing results as regards the impact of social support might partly be due to differences in the health and welfare systems in which the studies were embedded and which might carry a different weight (relative to private support) from one country to another. In the present study, e.g., a relatively high number of subjects stated that their only or closest contact person was a "professional." Besides, a fundamental conceptual difference should be borne in mind: whereas the BSSS subscales measure the *perceived* quality of support, other studies assessed objective social indicators (24) or analysed "social exclusion" from the perspective of a mental health officer (9).

(4) *Sociodemographic patient characteristics* had no further predictive value in the present study. Holding an occupation on the regular labour market showed at least a tendency to provide some protection against compulsory re-hospitalisation (bivariate analysis; statistically not significant). This is in line with findings reported from Norway suggesting that patients who received social benefits, not in paid work, have a higher risk of compulsory admission (15, 16). The role of sociodemographic factors for the risk of compulsory hospitalisation is certainly not straightforward. It is obvious that sociodemographic factors are not independent of disease-related features. Considering that the present study included mostly chronically ill patients, it is therefore plausible that sociodemographic factors such as living situation or occupational integration are only of limited explanatory power. Bearing in mind that the present sample comprised patients from different hospitals responsible for the delivery of acute mental health care services, it is unlikely, however, that the given distribution of sociodemographic characteristics is the result of a sheer sample selection effect.

Limitations and Strengths

This study has several limitations. Firstly, the sample included in this study is not representative of psychiatry patients in total, insofar as all had already experienced compulsory hospitalisations in their patient history thus representing a selected inpatient sample. Secondly, because the subjects in this study originate from a RCT, the study is not a naturalistic follow-up of psychiatry patients. This is crucial for the interpretation of the frequency of compulsory readmission: seeing that participants were involved in a programme addressing the reduction of compulsory readmission, one must not take re-admission rates to be incidence rates.

A further limitation relates to the analysis, which reflects the outcomes only of those study participants who have remained in this study for 24 months (70.6% of the baseline sample). As with all as-treated analyses, bias might be associated with dropout. In a previous analysis, however, it was shown that type and severity of the mental disorder or the nature of endangerment (of self/of others) at admission were not significantly associated with dropout (39). Moreover, there was no indication of a differential dropout effect in the two treatment groups. It is therefore unlikely that the clinical characteristics, which have been identified as the main risk factors, are artefacts due to attrition effects (irrespective of any accordance with the literature).

Furthermore, the potential risk factors analysed in this study are all on the individual patient-level or the patient's close social environment. Factors on a service-system level which are likely to have a share in the use of compulsory hospitalisation were not investigated. To clarify the contribution of such factors further research adopting a broader perspective is necessary (addressing e.g., organisational characteristics, referral procedures, use of crisis intervention practices).

The strengths of this study are its prospective design, which allows the timely assessment of data, avoiding limitations of retrospective investigations (ambiguous/missing data; recall errors), and its long-term perspective, enabling informative modelling of time to event data. The study sample, recruited from a naturalistic user sample of four psychiatric hospitals and including a broad spectrum of disorders, supports generalisation of findings. Moreover, this study is based on a comprehensive assessment and explicitly considered the subjective patient perspective, personal information that rarely has been studied in previous research.

CONCLUSIONS

The present analysis clearly suggests that on the patient-level, the risk of compulsory re-admission is mainly influenced by disease-related factors. Therefore, no effort should be spared to ensure compliance with treatment and treatment success in this special patient group: subjects with serious mental disorder (in particular, people with psychotic disorders or emotionally unstable personality disorders), recurrent severe behavioural problems (aggression, impulsivity, suicidal behaviour) with compulsory admissions in their patient history. These patients should be closely monitored after discharge from psychiatric inpatient care in order to timely detect early signs of a crisis and to optimise use of services. Aftercare already should be arranged during the inpatient stay, providing patients with a list of available low-threshold services and contact persons in the community in order to take account of the fact that risk of a compulsory re-admission is highest immediately after discharge.

Further research is also clearly needed to study service system aspects that determine referral or crisis intervention procedures, in order to work out promising concepts and investigate the conditions under which coercive admission can be prevented. In addressing such questions, psychiatry should set the focus on the needs of those with the most problematical behaviours at the more severe end of the spectrum of mental disorders.

ETHICS STATEMENT

Ethical approval for the study was obtained from the Ethical Review Board for Clinical Studies of Canton of Zurich, Switzerland, and the study was registered with Current

Controlled Trials ISRCTN63162737. All subjects gave written informed consent in accordance with the Declaration of Helsinki.

AUTHOR CONTRIBUTIONS

WR and BL designed the study and coordinated the data collection. BL performed the statistical analysis and wrote the first draft of the manuscript. WR and WK contributed to the manuscript revision. All authors read and approved the final manuscript.

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OPINION
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Supported Decision Making in the Prevention of Compulsory Interventions in Mental Health Care

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Several strands of thought, international law and clinical practice shaped the emergence of supported decision making in mental health care: the UN Convention on the Rights of Persons with Disabilities, in particular Article 12 on Equal Recognition before the Law (1), the General Comment No.1 of the UN Committee on the Rights of Persons with Disabilities (2) emphasizing "support in the exercise of legal capacity" and obliging states "to replace regimes of substitute decision-making by supported decision-making, which respects the person's autonomy, will and preferences," the introduction of shared decision making in medicine (3), and the users' movement challenging traditional paternalistic approaches in psychiatry (4).

Within psychiatry the uptake of the convention with supported decision making was rather hesitant and perceived as challenging (5). Some commentators went as far as suggesting "an urgent consideration (of the General Comment No.1) with the full participation of practitioners" (6). Rather than extending this discussion, I will look at how supported decision making could work in the treatment of severe depression and psychosis, with the aim to prevent coercive interventions.

Arguably, the widespread use of detention, coercion and isolation is a major obstacle for users of mental health services to perceive their service as trustworthy and helpful. Particularly coercive medication may have negative consequences on subsequent service use, as it is strongly linked to disapproval of treatment (7) or associated with lower acceptance of any form of containment (8). With an emphasis on will and preferences, supported decision making should have some potential in reducing coercive interventions in mental health settings.

SEVERE DEPRESSION

Few clinicians will experience difficulties with supported decision making in the treatment of mild or moderate depression. However, acute mental or general health services will also encounter patients who want to end their lives or perceive themselves as unworthy of any treatment and would therefore prefer to be discharged home and left to themselves. A traditional approach would be to ask these patients to remain in hospital until they feel better. If a capacity assessment takes place, an "impaired decision making capacity" (5) may be found. Hence, a "doctor-knows-best" approach or a functional approach to capacity will provide an ethical or legal justification to keep the patient in hospital.

On the contrary, looking at will and preferences the clinician may first encounter the actual will of the person: "I don't want to remain in hospital." Before that however, the preferences of the person were to remain alive and well, otherwise she may have ended her life or suffered severe harm from illness before the current situation emerged. Actual will and hitherto expressed preferences seem to point in different directions.

Clearly, according to the CRPD the person is entitled to support. Support may involve information on the possible outcomes of depression (mostly positive) and treatment options (usually available) based on will *and* preferences. A patient may agree to treatment at home with a crisis resolution team as an alternative to hospital admission (9). This option may be available in some places, in others a move toward supported decision making may drive service development toward person-centered care.

But what if the person simply wants to end it all? Will A&E services just leave her alone and provide some information on counseling and outpatient treatment options? How can will *and* preferences (10) determine treatment and support? The treatment team will look at the current will of the person and previous expressions of will and preferences. They will look for advance directives or joint crisis plans (11), for a power of attorney and informal support arrangements in the family. Friends and family can provide information on previously expressed preferences.

This may take some time. Therefore, until a thorough investigation of the person's will and preferences has taken place, the person should be kept safe, even if this goes against the will expressed in that particular time and situation. Any action against the current will of the person should be scrutinized by a court of law to make sure it is proportional and represents the least restrictive option. The court would not look at an assessment of capacity but establish a contradiction between will and preferences and point out a way forward to resolve this. Keeping the patient safe is not a legitimate reason for coercive treatment; as far as medical treatment is concerned, the will of the person (not to be medically treated) will be respected.

The court may well suggest that the hospital offers treatment at home or day hospital treatment as an alternative to inpatient treatment (and a less restrictive option) if the person does not want to remain in hospital. For a patient in hospital the court may suggest that the hospital offers 1:1 support to allow the patient to leave the hospital for walks, for physical exercise or to buy some items (in order to minimize the infringement on the person's rights).

The court may order a detention in hospital for just a week or two, before will and preferences are reviewed. Will and preferences may go against treatment of depression, therefore specific treatment cannot be given. On the other hand, the court may suggest that the hospital finds out more about will and preferences by engaging the patient in individual sessions of supported decision making: clinicians and peer support workers (staff with first-hand experience of depression) (12) share their experience (in the role of someone treating depression or someone suffering from depression), aim at an understanding of the patient's preferences and inform the patient on therapeutic options. Family and friends can be counseled to support the patient.

Traditionally, hospital treatment may start with an explanation: "our assessment shows that you are suffering from a severe depressive episode. The treatment options are psychotherapy and antidepressant medication. As long as you harbor suicidal thoughts, the treatment should be as an inpatient before we look at other treatment options as an outpatient or in a day hospital." However, respecting will and preferences leads to a different approach: "we are here to support you at this critical moment in your life. While you would rather want to be discharged home and left alone, we wonder whether this really is the time, considering your life as a whole and the current situation where you want to end it all. We would therefore want to support you for a little while, perhaps a week or two, until we are clear about your will and about your preferences for your life. Be assured, no treatment will be given against your will."

PSYCHOSIS

Around 60% of patients involuntarily admitted to hospital are diagnosed with psychosis (13). Shifting from *detention and coercion in hospital* toward *supported decision making* would, on one hand, mark a massive change for people diagnosed with psychosis in their treatment experience. On the other hand, it would confront hospital staff with situations where detention or coercion are no longer viable or are far more restricted than now.

Across different legislations people diagnosed with psychosis are admitted involuntarily on the basis of imminent harm to themselves, imminent harm to others, a medically determined need for treatment, or a (medically determined) lack of capacity to consent to treatment, or a combination of these criteria (14). As mentioned before, applying these criteria to justify detention in hospital or involuntary treatment seems to be in contrast with General Comment No.1 on Article 12 of the CRPD (2).

Similarly, using the example of depression, supported decision making would start with an assessment of will and preferences. Where no will is expressed and the preferences are not known, treatment may begin on the basis of "best interpretation of will and preferences" (2). More commonly, the actual will may point to discharge from hospital. In this case, it needs to be established if the request to be discharged from hospital represents a will not to be supported at all, or if support would be accepted in a less restrictive or less institutional context: as an outpatient, at home, in a day hospital, on a medical rather than a psychiatric ward. Once the setting of support is decided, the content of treatment can be negotiated.

But what should be done if imminent harm to the person or to another person is at stake? There may be a court order requiring the person to remain in hospital for assessment. The clinical team would use this time to establish will and preferences and inform the court if these go against treatment in hospital. The court would then have to decide if a further stay in hospital is warranted (in order to avoid imminent harm, or to allow more time to establish will and preferences). However, will and preferences going against hospital treatment would eventually lead to discharge from hospital.

Yet the obligation to support the person does not stop with discharge from hospital. The need for support may still be high and services like intensive case management (ICM) or assertive community treatment (ACT) may have to be put in place (15). However, compulsory community treatment, which in the UK or the US often combines with ICM or ACT (16) would not be consistent with the principle of Article 12 of the CRPD.

To support people with psychosis, clinicians need effective means of communication. Often, at least at the beginning of treatment and based on previous experiences with mental health services, patients find it hard to trust their doctors and nurses. Building trust between a treatment team and a person with psychotic symptoms needs time and patience. Coercive interventions on the other hand are likely to damage that trust.

To build therapeutic relationships, mental health services need to provide a safe environment, time, and therapeutic expertise. They should strive to avoid any coercive interventions and should involve family and friends of the person concerned. The World Health Organization recommends the "Open Dialogue" approach as a specific alternative to traditional mental health services "to support the individual's network of family and friends, as well as (to) respect the decision-making of the individual"(17). "Open dialogue" is a flexible service for the treatment of psychosis in a community context not only with the potential to avoid coercive interventions and hospital admissions but also to improve the outcomes of psychosis (18).

For people experienced with mental health services, the options to draft an advance statement or to agree on a joint crisis plan with their respective mental health services will help to avoid uncertainty about their will and preferences in situations when communication becomes difficult (10). In exceptional cases of psychosis, weeks or even months may pass with uncertainty on will and preferences. A court may have to decide on the proportionality of curtailing civil liberties against other considerations at stake.

CONCLUSION

Based on the General Comment on Article 12 of the CRPD (2), supported decision making may hold potential in replacing substitute decision making and in reducing coercive interventions in mental health care. To implement supported decision making in clinical practice, it should not stop at capacity assessments or at situations where the health and safety of the person concerned are at risk. Promising approaches in the support of people with severe mental illness are the Open Dialogue model (18), Advance Statements (11) and Crisis Resolution/Home Treatment Teams (9). Based on their lived experience with mental health problems, peer support workers are in a unique position to support professionals in eliciting will and preferences to guide treatment and support. Clinical techniques in building trustful relationships and in effective communication with people suffering from psychosis and depression need improving. Mental health care research and clinical services should embrace this challenge.

AUTHOR CONTRIBUTIONS

The author confirms being the sole contributor of this work and has approved it for publication.

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frontiers in Psychiatry

ORIGINAL RESEARCH
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Text Analysis of Electronic Medical Records to Predict Seclusion in Psychiatric Wards: Proof of Concept

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Aim: With the introduction of "Electronic Medical Record" (EMR) a wealth of digital data has become available. This provides a unique opportunity for exploring precedents for seclusion. This study explored the feasibility of text mining analysis in the EMR to eventually help reduce the use of seclusion in psychiatry.

Methods: The texts in notes and reports of the EMR during 5 years on an acute and non-acute psychiatric ward were analyzed using a text mining application. A period of 14 days was selected before seclusion or for non-secluded patients, before discharge. The resulting concepts were analyzed using chi-square tests to assess which concepts had a significant higher or lower frequency than expected in the "seclusion" and "non-seclusion" categories.

Results: Text mining led to an overview of 1,500 meaningful concepts. In the 14 day period prior to the event, 115 of these concepts had a significantly higher frequency in the seclusion category and 49 in the non-seclusion category. Analysis of the concepts from days 14 to 7 resulted in 54 concepts with a significantly higher frequency in the seclusion-category and 14 in the non-seclusion category.

Conclusions: The resulting significant concepts are comparable to reasons for seclusion in literature. These results are "proof of concept". Analyzing text of reports in the EMR seems therefore promising as contribution to tools available for the prediction of seclusion. The next step is to build, train and test a model, before text mining can be part of an evidence-based clinical decision making tool.

Keywords: data mining, electronic medical record, psychiatric inpatient ward, seclusion, text mining

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INTRODUCTION

Reasons for being admitted to a closed psychiatric ward usually involve the combination of psychiatric symptoms and aggressive or impulsive behaviors and/or presenting a risk to others or oneself (1–3). By providing structure, socio-therapeutic interventions, and medication, patients usually become less agitated (4, 5). In some situations, however, there is no other alternative than to use restraining measures (6). In the Netherlands, seclusion is the preferred restraining measure and is used more often compared to other countries, with forced medication being used less. The high use of seclusion (in number and duration) has been subject to national extensive political discussion and media coverage (7–9). Seclusion should be avoided as much as possible and not only because the therapeutic value is doubtful (10, 11). This measure has proven to be a traumatic intervention for both the patient (12, 13) and staff (14, 15). Various initiatives have taken place to diminish the use of seclusion (16–18). Over the past years seclusion rates in the Netherlands have lessened due to several reduction endeavors, such as the implementation of a High Intensive Care model in acute psychiatric wards (19–21). However, seclusion rates in the Netherlands still remain one of the highest compared to other countries. More efforts are needed to reduce the use of seclusion (8, 9).

Risk assessment has shown to be effective in reducing seclusion and is often incorporated in reduction efforts (8, 21–23). Reviews show a scarcity of well-designed studies addressing feasibility and effectiveness of de-escalating interventions as Gaynes et al. (24) remarked "The available evidence about relevant strategies is very limited. Only risk assessment decreased subsequent aggression or reduced use of seclusion and restraint (low strength of evidence). Evidence for de-escalating aggressive behavior is even more limited."

The present article describes an innovative way of extracting words from the text available in the "Electronic Medical Record" (EMR) of patients admitted to psychiatric admission wards in order to predict seclusion (or assess risk); the focus here is on the prevention of seclusion as this is the most frequently used restraining measure in The Netherlands. The "Electronic Medical Record" (EMR) gives access to clinical data that was not readily available before its implementation. It allows large-scale clinical analysis in daily routines in psychiatry, however, the precise extraction of clinical relevant data from the narrative medical and nursing notes and other files can be challenging. An example of strategies used to extract data from texts is the study of Perlis et al. (25) who used "Natural Language Processing" for a chart review by processing text into meaningful concepts on a set of rules. They were able to give a proper indication of the patients that could be regarded to "become therapy resistant." Cerrito et al. (26) wrote a white paper on the use of data-mining techniques on Electronic Medical Record in the emergency department of a hospital to improve care while lowering costs. They discovered that patients with similar complaints were treated very differently depending on the attending physician, and those differences can have an impact on both costs and care. Other examples are: predicting future risk of suicidal behavior using longitudinal historical data in electronic health records (27) or after discharge from general hospitals (28), detecting specific follow-up appointment criteria in hospital discharge records (29), extracting employment information of service members from the Electronic Health Record (30), identifying tapering patterns in switching of different antipsychotics (31) or identifying knowledge gaps in guidelines and exploring physicians' therapeutic decisions with data mining techniques to fill these knowledge gaps (32).

In the current explorative study text mining software is used to allow analysis of large amounts of text in which (patterns of) words are screened on whether or not they are more numerous in patients who are subsequently secluded. This method of analysis provides insight into what is relevant, what is related and what is representative from a large body of unstructured text (33). This technology has been used in several academic studies to perform text analysis in the medical domain (34, 35). The intention of this study is purely to explore the use of text mining in daily psychiatric practice to determine if it could be a viable tool in reducing the use of seclusion in the future. If the results are promising the next step would be to link qualitative information from the "Electronic Medical Record" (EMR) to a predictive model of seclusion. After validation, this model could provide the opportunity to develop a screening-algorithm that checks in "real time" if the relevant "trigger" (or "discriminative") words and word-combinations (concepts) linked to seclusion appear in the "Electronic Medical Record" (EMR), thus giving a warning sign that a patient is at risk. This will provide means to de-escalate the behavior at an early stage and in turn reduce the number of seclusions. Such an alerting system should not lead to extra workload for the staff, be safe and have no negative impact on patient care and well-being.

The authors sought to answer the following question in this explorative study: could analyzing text in the files of patients be useful in the quest to reduce the use of seclusion in psychiatric practice? To answer this, the first step was to see if text mining in the Electronic Medical Record (EMR) could lead to the identification of meaningful concepts in the EMR that are numerically the most frequent in the medical files of the patients. The second step was to answer the question if any of these concepts typically relate to either a subsequent seclusion or, for non-seclusion, a subsequent discharge from the ward.

This study was purely explorative in nature to determine if text mining the EMR could result in useful concepts that typically precede seclusion on a psychiatric closed ward. This study is based on data mining: not hypothesis driven but data driven. The authors did not choose to formulate an expected outcome of concepts related to seclusion or non-seclusion. To the authors' knowledge, no studies were available at that time that indicated certain concepts would have a predictive value for seclusion or non-seclusion.

METHODS

Study Design

A retrospective cohort study using unstructured data from routine patient reports and notes stored in the EMR written by nurses and physicians.

Setting

The study took place in a large regional psychiatric hospital in The Netherlands with an urban catchment area of ∼550,000 inhabitants. Data was gathered from an acute psychiatric admission ward which held 52 beds and 6 seclusion rooms (∼1,300 patients admitted per annum on average with a mean length of stay of 16 days) and from a non-acute psychiatric admission ward with 42 beds and 2 seclusion rooms (around 300 patients admitted per annum on average with a mean length of stay of 42 days) (3).

Indexed sentences

The **patient** made *a* **substantial psychotic impression.**
During **conversation** ***he*** skipped from **one topic** to ***another***.
The **patient** was **restless** and **threatening** towards *the* **physician** and **nursing staff**. **no conversation possible**.
The **patient** was ***frequently*** present on *the* **ward**. *still* **very restless** and **chaotic** during **moments** of **contact.**
He has **bizarre ideas**. only wants to drink from *the* **blue cup** *for example*. ***sometimes*** looking suspiciously at ***his*** **surroundings**.
Gentleman received as **necessary medication**. made *a* **somewhat tense impression**.
He was **angry** when ***he*** had to go back to *the* **time out**. possibly because ***he*** didn't get what **he** wanted.

Concepts

Entity	**Frequency**
Patient	3
Substantial psychotic impression	1
Conversation	1
One topic	1
Restless	1
Threatening	1
Physician	1
Nursing staff	1
No conversation possible	1
Ward	1
Very restless	1
Chaotic	1
Moments	1
Contact	1
Bizarre ideas	1
Blue cup	1
Surroundings	1
Gentleman	1
Necessary medication	1
Somewhat tense impression	1
Angry	1
Time out	1

Concept Relation Concepts (CRC)

(CRC)	**Frequency**
Patient made substantial psychotic impression	1
During conversation	1
Conversation skipped from one topic	1
One topic to	1
Patient was restless	1
Restless and threatening	1
Threatening towards physician	
Physician and nursing staff	1
Patient was	1
Present on ward	1
Very restless and chaotic	1
Chaotic during moments	1
Moments of contact	1
Has bizarre ideas	1
Bizarre ideas only wants to drink from blue cup	1
Blue cup looking suspiciously at surroundings	1
Gentleman received as necessary medication	1
Necessary medication made somewhat tense impression	1
Was angry	1
Angry when	1
Had to go back to time out	1
Time out possibly because	1

FIGURE 1 | Example of text mining analysis. **Bold** are the concepts. underlined are the relationships. *Grey and italic* are unimportant words such as articles ('the'. 'a'). ***Black and italic*** are words that add to the concept such as pronouns or adverbs ('he'. 'sometimes'). Grey marking is a possible negation.

Participants

All nursing notes and medical reports written about patients admitted during the period August 2008–July 2012, on either the acute or the non-acute admission ward, were extracted from the EMR. Hence, including readmitted patients and secluded or non-secluded patients. Every note and report was used of every single patient to fully reflect day-to-day psychiatric practice, including possible missing information in the EMR.

Procedure

After approval of the board of directors a request was made to the department of Internal Business Intelligence to extract all reports and notes from the EMR of the above described participants. These text files were deleted after the study and were anonymously analyzed by an external company which developed a text mining program.

Analysis

The goal of analysis was to first find frequently used concepts in the EMR and secondly if any of these concepts relate to either seclusion or non-seclusion of patients. Concepts were identified using text mining software. All the unstructured data in the EMR involving the day-to-day notes by the nursing staff and various psychiatric reports by physicians and other mental health professionals (excluding medication prescription) were analyzed using text mining software[1]. The approach of the software is to break texts into sentences, and to parse sentences into concepts and relation patterns, without predefined domain knowledge. The semantics analysis run by the software recognizes key elements such as concepts, relations, non-relevant words, and negations. Relations are commonly verbs, and nouns with adjusting words are concepts (**Figure 1**). The software itself automatically generates the most frequently used concepts. Frequency of concept is the number of times a concept appears in a text; note that this is not the same as the frequency of a word, because a concept can consist of multiple words (33).

The concepts of secluded patients were analyzed during a maximum of 2 weeks prior to seclusion and were compared to the concepts in reports of non-secluded patients during the last 14 days of their admission. To control for the differences in the time admitted in the hospital and differences between the acute and non-acute ward, a period of 14 days prior to seclusion vs. the last 14 days of admission for the non-secluded patients was selected for this study. The last 14 days of admission was chosen for the non-secluded group, because this is the most stable phase for them. These periods were not compared in the same time-frames. In this strategy there is no "control group" in a strict sense, but only a dichotomy: a patient is either secluded or not.

Chi-square analyses were used to test if there was a significant difference in the frequency of the concepts for the secluded and non-secluded categories during the 14 days prior to the event. Additionally, concepts from days 14 to 7 prior to either seclusion or discharge were analyzed in the same way. A Bonferroni correction was applied on the *p*-value to correct for the multiple hypothesis testing; i.e., 1,500 hypotheses, one for each concept, were tested.

Ethical Considerations

Before conducting the study the authors consulted the Dutch Central Committee on Research Involving Human Subjects (CCMO) under the Dutch Medical Research Involving Human Subjects Act (WMO) regarding if approval of this study was needed. Seeing that this study does not include physically involved patients, interventions or subject patients to procedures that require them to follow rules of behavior, no approval of the ethical committee was sought. The study was approved by the medical director of the institute.

RESULTS

The study included 3,045 admissions for an acute psychiatric ward and a non-acute psychiatric ward from August 2008–July 2012. This accounted for 67,590 notes and reports of which 57,381 belonged to non-secluded patients and 10,209 to secluded patients. The total reports involved 2,816 patients of whom 1,687 (60%) were male and 1,129 (40%) were female. The mean age was 41 years (SD = 13) and 656 (23%) patients were secluded. The major diagnoses in this group were: schizophrenia ($N = 967$; 32%), mood disorders ($N = 767$; 25%), and other psychotic disorders ($N = 672$; 22%; **Table 1**).

TABLE 1 | Demographic variables of the patients included in the three studies.

DEMOGRAPHIC VARIABLE	
Registrations (*N*)	3,045
Patients (*N*)	2,816
GENDER *N* (%)	
Male	1,687 (59.9%)
Female	1,129 (40.1%)
AGE (YEARS)	
Mean	41
SD	13
Min-Max	18-90
SECLUDED *N* (%)	
Yes	656 (23.3%)
No	2,160 (76.7%)
DIAGNOSIS *N* (%)	
Schizophrenia	967 (34%)
Mood disorders	767 (27%)
Psychotic disorders	672 (24%)
Alcohol dependence	360 (13%)
Drug dependence	265 (9%)
Adjustment disorders	238 (8%)
Anxiety/Somatoform/ Dissociative disorders	188 (7%)
All other diagnoses	≤186 (7%)

Diagnoses include all major diagnoses; patients typically have more than one major diagnosis in this population.

The results were incorporated in a dashboard that computes graphs and tables when selecting a particular word or socio-demographic variable. Furthermore, the text mining analysis resulted in an overview of 1,500 (most meaningful) generated concepts from the EMR. The frequencies of these concepts were displayed for each of the 14 days prior to seclusion and discharge (non-seclusion). In total 1,500 concepts were mentioned 428,587 times, of which 67,088 were found in files of secluded patients and 361,499 in files of non-secluded patients. The overview of 1,500 concepts consisted of a number of repetitions that were seen as different concepts due to spelling or the use of abbreviations by staff. This was for example the case for the concepts regarding: mania, depression, hallucinations, paranoia, seclusion, and time-out room.

Chi-square analyses of all concepts and the occurrence of the concept in files of secluded or non-secluded patients in the 14 days prior to the event of seclusion or discharge, resulted in 115 concepts relating significantly to seclusion, ranging from the concept *seclusion* (Dutch abbreviation; $\chi^2(1) = 287.89$, $p < 0.001$) to the concept *fell down* ($\chi^2(1) = 17.37$, $p < 0.05$;

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[1] iKnow smart indexing©, Intersystems.

TABLE 2 | Significant concepts for seclusion from notes and reports in the EMR (Chi-square).

	N **(nsecl)**	***N*** **(secl)**	**% of concepts nsecl**	**% of concepts secl**	***N*** **(total)**	**% of all concepts**	**Exp *N* (nsecl)**	**Exp *N*(secl)**	**Chi-square**	**df**	***p*-value***
Seclusion (Dutch abbreviation)	165	163	0.00	0.00	328	0.00	276.66	51.34	287.89	1	0.00
Behavior	431	272	0.00	0.00	703	0.00	592.96	110.04	282.60	1	0.00
Threatening	29	56	0.00	0.00	85	0.00	71.69	13.31	162.43	1	0.00
Office	514	246	0.00	0.00	760	0.00	641.03	118.97	160.83	1	0.00
Time out room	32	57	0.00	0.00	89	0.00	75.07	13.93	157.85	1	0.00
Psychotic impression	93	87	0.00	0.00	180	0.00	151.82	28.18	145.60	1	0.00
t.o**	13	37	0.00	0.00	50	0.00	42.17	7.83	128.92	1	0.00
Psychotic	281	149	0.00	0.00	430	0.00	362.69	67.31	117.54	1	0.00
Time-out room	23	40	0.00	0.00	63	0.00	53.14	9.86	109.20	1	0.00
Very psychotic	30	42	0.00	0.00	72	0.00	60.73	11.27	99.34	1	0.00
Very restless	54	47	0.00	0.00	101	0.00	85.19	15.81	72.95	1	0.00
Agreements	403	162	0.00	0.00	565	0.00	476.56	88.44	72.54	1	0.00
Cigarettes	86	60	0.00	0.00	146	0.00	123.15	22.85	71.58	1	0.00
Door	523	194	0.00	0.00	717	0.00	604.77	112.23	70.62	1	0.00
Ground	176	90	0.00	0.00	266	0.00	224.36	41.64	66.60	1	0.00
Charged	37	37	0.00	0.00	74	0.00	62.42	11.58	66.12	1	0.00
Hour	317	133	0.00	0.00	450	0.00	379.56	70.44	65.87	1	0.00
Security	30	33	0.00	0.00	63	0.00	53.14	9.86	64.37	1	0.00
Paranoid	34	35	0.00	0.00	69	0.00	58.20	10.80	64.28	1	0.00
Smokers' requisites	68	50	0.00	0.00	118	0.00	99.53	18.47	63.81	1	0.00
Verbal	108	65	0.00	0.00	173	0.00	145.92	27.08	62.95	1	0.00
No signs	51	42	0.00	0.00	93	0.00	78.44	14.56	61.33	1	0.00
Angry	345	138	0.00	0.00	483	0.00	407.39	75.61	61.05	1	0.00
Hard	89	57	0.00	0.00	146	0.00	123.15	22.85	60.49	1	0.00
Florid psychotic	16	24	0.00	0.00	40	0.00	33.74	6.26	59.58	1	0.00
Shower	79	52	0.00	0.00	131	0.00	110.49	20.51	57.35	1	0.00
Radio	31	31	0.00	0.00	62	0.00	52.29	9.71	55.40	1	0.00
Restless	354	136	0.00	0.00	490	0.00	413.30	76.70	54.35	1	0.00
Garden	1,139	331	0.00	0.00	1,470	0.00	1,239.90	230.10	52.45	1	0.00
Emergency medication	11	19	0.00	0.00	30	0.00	25.30	4.70	51.66	1	0.00
Suspicious	286	115	0.00	0.00	401	0.00	338.23	62.77	51.53	1	0.00
Direct	248	104	0.00	0.00	352	0.00	296.90	55.10	51.45	1	0.00
Alarm	10	18	0.00	0.00	28	0.00	23.62	4.38	50.16	1	0.00
Time out	68	44	0.00	0.00	112	0.00	94.47	17.53	47.38	1	0.00
Lorazepam	297	115	0.00	0.00	412	0.00	347.51	64.49	46.90	1	0.00
Medication	3,084	753	0.01	0.01	3,837	0.01	3,236.38	600.62	45.84	1	0.00
Correction	31	28	0.00	0.00	59	0.00	49.76	9.24	45.20	1	0.00
Boundaries	91	51	0.00	0.00	142	0.00	119.77	22.23	44.16	1	0.00
Agitated	223	92	0.00	0.00	315	0.00	265.69	49.31	43.82	1	0.00
Beginning	380	135	0.00	0.00	515	0.00	434.39	80.61	43.50	1	0.00
Time-out	67	42	0.00	0.00	109	0.00	91.94	17.06	43.21	1	0.00
Paranoid impression	54	37	0.00	0.00	91	0.00	76.76	14.24	43.10	1	0.00
Weed	26	25	0.00	0.00	51	0.00	43.02	7.98	43.00	1	0.00
God	43	32	0.00	0.00	75	0.00	63.26	11.74	41.45	1	0.00
Oxa	62	39	0.00	0.00	101	0.00	85.19	15.81	40.33	1	0.00
Demanding	42	31	0.00	0.00	73	0.00	61.57	11.43	39.75	1	0.00
Not sick	64	39	0.00	0.00	103	0.00	86.88	16.12	38.48	1	0.00
Hand	243	94	0.00	0.00	337	0.00	284.25	52.75	38.24	1	0.00
Force majeure	12	16	0.00	0.00	28	0.00	23.62	4.38	36.51	1	0.00

(Continued)

TABLE 2 | Continued

	N (nsecl)	*N* (secl)	% of concepts nsecl	% of concepts secl	*N* (total)	% of all concepts	Exp *N* (nsecl)	Exp *N*(secl)	Chi-square	df	*p*-value*
Agitation	97	49	0.00	0.00	146	0.00	123.15	22.85	35.46	1	0.00
Doors	44	30	0.00	0.00	74	0.00	62.42	11.58	34.71	1	0.00
Colleague	689	203	0.00	0.00	892	0.00	752.37	139.63	34.10	1	0.00
Closet	40	28	0.00	0.00	68	0.00	57.36	10.64	33.55	1	0.00
Directive	28	23	0.00	0.00	51	0.00	43.02	7.98	33.49	1	0.00
Night	706	206	0.00	0.00	912	0.00	769.24	142.76	33.22	1	0.00
Custody measure	442	142	0.00	0.00	584	0.00	492.58	91.42	33.19	1	0.00
Gone	699	204	0.00	0.00	903	0.00	761.65	141.35	32.92	1	0.00
1 h	47	30	0.00	0.00	77	0.00	64.95	12.05	31.68	1	0.00
Everyone	242	89	0.00	0.00	331	0.00	279.19	51.81	31.64	1	0.00
Confiscate	37	26	0.00	0.00	63	0.00	53.14	9.86	31.31	1	0.00
Psychotic utterances	77	40	0.00	0.00	117	0.00	98.69	18.31	30.44	1	0.00
Pointed	123	54	0.00	0.00	177	0.00	149.29	27.71	29.58	1	0.00
Water	92	44	0.00	0.00	136	0.00	114.71	21.29	28.73	1	0.00
Affectless impression	32	23	0.00	0.00	55	0.00	46.39	8.61	28.52	1	0.00
Window	65	35	0.00	0.00	100	0.00	84.35	15.65	28.35	1	0.00
Cigarette	123	53	0.00	0.00	176	0.00	148.45	27.55	27.87	1	0.00
Considerable	19	17	0.00	0.00	36	0.00	30.36	5.64	27.17	1	0.00
Affectless	111	49	0.00	0.00	160	0.00	134.95	25.05	27.16	1	0.00
Sleep	118	51	0.00	0.00	169	0.00	142.55	26.45	27.00	1	0.00
Very suspicious	39	25	0.00	0.00	64	0.00	53.98	10.02	26.56	1	0.00
Police	360	115	0.00	0.00	475	0.00	400.65	74.35	26.34	1	0.00
Claiming	104	46	0.00	0.00	150	0.00	126.52	23.48	25.61	1	0.00
Several times	54	30	0.00	0.00	84	0.00	70.85	13.15	25.60	1	0.00
Fluctuating	264	90	0.00	0.00	354	0.00	298.59	55.41	25.60	1	0.00
Very angry	72	36	0.00	0.00	108	0.00	91.09	16.91	25.57	1	0.00
Pounding	18	16	0.00	0.00	34	0.00	28.68	5.32	25.40	1	0.00
Eyes	153	60	0.00	0.00	213	0.00	179.66	33.34	25.27	1	0.00
Warning	30	21	0.00	0.00	51	0.00	43.02	7.98	25.16	1	0.00
Restless/boisterous presence	52	29	0.00	0.00	81	0.00	68.32	12.68	24.91	1	0.00
Mania	67	34	0.00	0.00	101	0.00	85.19	15.81	24.81	1	0.00
Incident	61	32	0.00	0.00	93	0.00	78.44	14.56	24.78	1	0.00
Mr. Last night	44	26	0.00	0.00	70	0.00	59.04	10.96	24.48	1	0.00
Mobile	47	27	0.00	0.00	74	0.00	62.42	11.58	24.33	1	0.00
Pills	62	32	0.00	0.00	94	0.00	79.29	14.71	24.08	1	0.00
5 o'clock	34	22	0.00	0.00	56	0.00	47.23	8.77	23.69	1	0.00
Seclusion	4	8	0.00	0.00	12	0.00	10.12	1.88	23.65	1	0.00
Cannabis	48	27	0.00	0.00	75	0.00	63.26	11.74	23.52	1	0.00
Tranxene	66	33	0.00	0.00	99	0.00	83.50	15.50	23.44	1	0.00
Complaint	37	23	0.00	0.00	60	0.00	50.61	9.39	23.38	1	0.00
Restless/boisterous	506	147	0.00	0.00	653	0.00	550.78	102.22	23.26	1	0.00
Naked	13	13	0.00	0.00	26	0.00	21.93	4.07	23.23	1	0.00
Question	440	131	0.00	0.00	571	0.00	481.62	89.38	22.98	1	0.00
Cooperative	211	74	0.00	0.00	285	0.00	240.39	44.61	22.95	1	0.00
Chaotic	148	57	0.00	0.00	205	0.00	172.91	32.09	22.93	1	0.00
Excuses	113	47	0.00	0.00	160	0.00	134.95	25.05	22.82	1	0.00
Restlessness	193	69	0.00	0.00	262	0.00	220.99	41.01	22.65	1	0.00
Bathroom	47	26	0.00	0.00	73	0.00	61.57	11.43	22.03	1	0.00
Uninhibited	62	31	0.00	0.00	93	0.00	78.44	14.56	22.02	1	0.00
Very restless/boisterous	95	41	0.00	0.00	136	0.00	114.71	21.29	21.64	1	0.00

(Continued)

TABLE 2 | Continued

	N (nsecl)	*N* (secl)	% of concepts nsecl	% of concepts secl	*N* (total)	% of all concepts	Exp *N* (nsecl)	Exp *N*(secl)	Chi-square	df	*p*-value*
Own room	117	47	0.00	0.00	164	0.00	138.33	25.67	21.01	1	0.01
Desperate	43	24	0.00	0.00	67	0.00	56.51	10.49	20.64	1	0.01
Trousers	32	20	0.00	0.00	52	0.00	43.86	8.14	20.49	1	0.01
Confused	81	36	0.00	0.00	117	0.00	98.69	18.31	20.25	1	0.01
Motoric	35	21	0.00	0.00	56	0.00	47.23	8.77	20.24	1	0.01
Forceful	149	55	0.00	0.00	204	0.00	172.07	31.93	19.76	1	0.01
Hands	157	57	0.00	0.00	214	0.00	180.50	33.50	19.55	1	0.01
Wall	57	28	0.00	0.00	85	0.00	71.69	13.31	19.24	1	0.02
Seclusion room	4	7	0.00	0.00	11	0.00	9.28	1.72	19.18	1	0.02
Substantial	64	30	0.00	0.00	94	0.00	79.29	14.71	18.83	1	0.02
Defensive	160	57	0.00	0.00	217	0.00	183.03	33.97	18.52	1	0.03
Nursing staff	1,111	275	0.00	0.00	1,386	0.00	1,169.05	216.95	18.41	1	0.03
Difficult	827	213	0.00	0.00	1,040	0.00	877.21	162.79	18.36	1	0.03
Physicians	47	24	0.00	0.00	71	0.00	59.89	11.11	17.71	1	0.04
Smoking area	190	64	0.00	0.00	254	0.00	214.24	39.76	17.52	1	0.04
Fell down	175	60	0.00	0.00	235	0.00	198.21	36.79	17.37	1	0.05

N concepts seclusion = 67,088; N concepts non-seclusion = 361,499.

*secl, secluded patients; nsecl, non-secluded patients; *After Bonferroni correction; **Time-out.*

The original Dutch resulting concepts are included in the Supplementary Material ***(Data Sheet 1).***

Table 2). For the non-secluded patients significant relationships were found for 49 concepts, ranging from the concept *furlough* ($\chi^2(1) = 238.34$, $p < 0.001$) to the concept *sitting room* ($\chi^2(1) = 18.17$, $p < 0.05$; **Table 3**).

Analysis of the concepts from days 14 to 7 involved 1,499 concepts (*letter of discharge* not yet mentioned in the reports and notes), which were mentioned in total 209,796 times in the EMR: 31,143 times in files of secluded patients and 178,653 times in files of non-secluded patients. Chi-square analyses led to 54 significant relating concepts to seclusion, ranging from the concept *behavior* ($\chi^2(1) = 114.18$, $p < 0.001$) to *not clear* ($\chi^2(1) = 17.39$, $p < 0.05$; **Table 4**). Compared to the full 14 days leading up to the event of seclusion, the following 68 concepts are not yet significant: *mania, 5 o'clock, several times, paranoid impression, defensive, agitation, physicians, bathroom, pounding, angry, trousers, cannabis, chaotic, claiming, colleague, cooperative, doors, directive, restless/boisterous, restless/boisterous presence, forceful, demanding, very suspicious, very restless/boisterous, very psychotic, excuses, substantial, fell down, god, boundaries, ground, hand, hands, custody measure, everyone, closet, complaint, lorazepam, mobile, difficult, motoric, wall, naked, night, eyes, affectless, affectless impression, restlessness, restless, uninhibited, force majeure, pills, psychotic utterances, smoking area, seclusion, seclusion room, cigarette, sleep, tranxene, verbal, nursing staff, confused, question, warning, desperate, water, gone,* and *fluctuating.* In this week before the event of seclusion, seven additional concepts were significant but were not significant in the full 14 days before seclusion. These are the concepts: *ambulant practitioner, short, loud, not clear, schedule, hunch/suspicion,* and *early shift.*

Regarding concepts relating to non-seclusion, days 14 to 7 were significant during days 14 to 7 prior to discharge. These comprised of 35 less concepts that were significant than in the analysis of the full 14 days (**Table 5**). Concepts that were no longer significant were the following: *depressive state, present, adequate, adequate impression, helpful, happy, contacts, day structure, own way, as usual, no characteristics, no psychotic characteristics, no psychotic utterances, whole night, all night not awake, group, house, sitting room, impression, manic state, madam not awake, tomorrow, ms m.i, unnoticeable, discharge, admission, return, quietly present, slept, somber, sport, suicidal tendencies, woman, weekend,* and *work.*

DISCUSSION

The present study explored the usefulness of analyzing text in the files of patients to identify concepts from reports and notes written by nurses and physicians that typically precede the incidence of seclusion. The authors were looking for a "proof of concept." Would it be possible to differentiate or identify concepts that precede seclusion? Text mining led to a list of 1,500 meaningful concepts from the EMR that are numerical the most frequent in files of patients. Of these 1,500 concepts, 115 seem to typically precede seclusion during 14 days. At first glance the majority of these 115 concepts correspond to (intuitive) clinical experience and can be viewed as five groups:

1. phrases that accompany reasons to use seclusion (i.e., concepts comprising the phrases: threatening, psychotic, restlessness, paranoia, verbal, angry, agitated, affectless, claiming, pounding, mania, chaotic, uninhibited, confusion,

TABLE 3 | Significant concepts for non-seclusion from notes and reports in the EMR (Chi-square).

	***N*(nsecl)**	***N*(secl)**	**% of concepts nsecl**	**% of concepts secl**	***N*(total)**	**% of all concepts**	**Exp *N*(nsecl)**	**Exp *N*(secl)**	**Chi-square**	**df**	***p*-value***
Furlough	2,264	97	0.01	0.00	2,361	0.01	1,991.43	369.57	238.34	1	0.00
Liberties	4,980	454	0.01	0.01	5,434	0.01	4,583.40	850.60	219.24	1	0.00
Friendly	7,296	789	0.02	0.01	8,085	0.02	6,819.43	1,265.57	212.76	1	0.00
Mr not awake	3,534	335	0.01	0.00	3,869	0.01	3,263.37	605.63	143.37	1	0.00
Ms not awake	1,492	83	0.00	0.00	1,575	0.00	1,328.46	246.54	128.61	1	0.00
Friendly present	1,978	149	0.01	0.00	2,127	0.00	1,794.05	332.95	120.49	1	0.00
Quiet	4,647	544	0.01	0.01	5,191	0.01	4,378.44	812.56	105.24	1	0.00
Good	6,914	894	0.02	0.01	7,808	0.02	6,585.79	1,222.21	104.49	1	0.00
Unnoticeably present	1,215	84	0.00	0.00	1,299	0.00	1,095.66	203.34	83.04	1	0.00
Not awake	1,597	144	0.00	0.00	1,741	0.00	1,468.48	272.52	71.86	1	0.00
Tomorrow	2,308	254	0.01	0.00	2,562	0.01	2,160.96	401.04	63.92	1	0.00
No symptoms	536	22	0.00	0.00	558	0.00	470.65	87.35	57.96	1	0.00
Home	866	63	0.00	0.00	929	0.00	783.58	145.42	55.38	1	0.00
All night not awake	572	34	0.00	0.00	606	0.00	511.14	94.86	46.29	1	0.00
Day structure	2,756	349	0.01	0.01	3,105	0.01	2,618.97	486.03	45.81	1	0.00
Helpful	501	27	0.00	0.00	528	0.00	445.35	82.65	44.42	1	0.00
Adequate	1,173	117	0.00	0.00	1,290	0.00	1,088.07	201.93	42.35	1	0.00
Impression	1,447	157	0.00	0.00	1,604	0.00	1,352.92	251.08	41.79	1	0.00
Whole night not awake	430	22	0.00	0.00	452	0.00	381.25	70.75	39.83	1	0.00
As usual	503	31	0.00	0.00	534	0.00	450.41	83.59	39.23	1	0.00
Contact	5,974	889	0.02	0.01	6,863	0.02	5,788.71	1,074.29	37.89	1	0.00
Return	550	38	0.00	0.00	588	0.00	495.96	92.04	37.62	1	0.00
Madam not awake	698	57	0.00	0.00	755	0.00	636.82	118.18	37.55	1	0.00
Group	1,488	172	0.00	0.00	1,660	0.00	1,400.16	259.84	35.21	1	0.00
Happy	623	51	0.00	0.00	674	0.00	568.50	105.50	33.38	1	0.00
House	2,252	294	0.01	0.00	2,546	0.01	2,147.47	398.53	32.51	1	0.00
Quietly present	2,272	299	0.01	0.00	2,571	0.01	2,168.55	402.45	31.52	1	0.00
Discharge	1,635	203	0.00	0.00	1,838	0.00	1,550.29	287.71	29.57	1	0.00
Present	2,866	402	0.01	0.01	3,268	0.01	2,756.45	511.55	27.81	1	0.00
Adequate impression	303	16	0.00	0.00	319	0.00	269.07	49.93	27.34	1	0.00
Unnoticeable	284	14	0.00	0.00	298	0.00	251.35	46.65	27.09	1	0.00
Somber	788	82	0.00	0.00	870	0.00	733.82	136.18	25.56	1	0.00
Slept	1,729	228	0.00	0.00	1,957	0.00	1,650.66	306.34	23.75	1	0.00
No psychotic utterances	345	25	0.00	0.00	370	0.00	312.08	57.92	22.18	1	0.00
Weekend	589	58	0.00	0.00	647	0.00	545.72	101.28	21.92	1	0.00
Whole night	882	101	0.00	0.00	983	0.00	829.13	153.87	21.54	1	0.01
ms m.i**	114	0	0.00	0.00	114	0.00	96.16	17.84	21.16	1	0.01
Contacts	312	22	0.00	0.00	334	0.00	281.72	52.28	20.79	1	0.01
Work	358	28	0.00	0.00	386	0.00	325.58	60.42	20.63	1	0.01
No characteristics	191	8	0.00	0.00	199	0.00	167.85	31.15	20.40	1	0.01
Admission	910	107	0.00	0.00	1,017	0.00	857.81	159.19	20.29	1	0.01
Suicidal tendencies	243	14	0.00	0.00	257	0.00	216.77	40.23	20.27	1	0.01
Manic state	180	7	0.00	0.00	187	0.00	157.73	29.27	20.09	1	0.01
Depressive state	250	15	0.00	0.00	265	0.00	223.52	41.48	20.04	1	0.01
No psychotic characteristics	262	17	0.00	0.00	279	0.00	235.33	43.67	19.31	1	0.02
Woman	530	53	0.00	0.00	58	0.00	491.74	91.26	19.02	1	0.02
Sport	631	68	0.00	0.00	699	0.00	589.58	109.42	18.59	1	0.02
Own way	642	70	0.00	0.00	712	0.00	600.55	111.45	18.28	1	0.03
Sitting room	2,809	417	0.01	0.01	3,226	0.01	2,721.02	504.98	18.17	1	0.03

N concepts seclusion = 67.088; N concepts non-seclusion = 361.499.

*secl, secluded patients; nsecl, non-secluded patients; *After Bonferroni correction; ** m.i., medication intake.*

*The original Dutch resulting concepts are included in the Supplementary Material **(Data Sheet 1)**.*

TABLE 4 | Signicifant concepts 7 days prior to seclusion.

Concept	Higher frequency in category	Chi-square	df	*p*-value*
Behavior	Seclusion	114.18	1	0.00
Office	Seclusion	106.85	1	0.00
Psychotic impression	Seclusion	85.83	1	0.00
Seclusion	Seclusion	85.76	1	0.00
Smokers' requisites	Seclusion	74.12	1	0.00
Charged	Seclusion	68.62	1	0.00
t.o**	Seclusion	67.17	1	0.00
No signs	Seclusion	65.10	1	0.00
Threatening	Seclusion	60.84	1	0.00
Agreements	Seclusion	56.58	1	0.00
Alarm	Seclusion	45.80	1	0.00
Correction	Seclusion	44.85	1	0.00
Beginning	Seclusion	44.11	1	0.00
Time out room	Seclusion	43.07	1	0.00
Time-out	Seclusion	43.02	1	0.00
Cigarettes	Seclusion	42.83	1	0.00
Hour	Seclusion	42.18	1	0.00
Window	Seclusion	41.15	1	0.00
Very restless	Seclusion	41.06	1	0.00
Time-out room	Seclusion	40.33	1	0.00
Garden	Seclusion	39.96	1	0.00
Time out	Seclusion	39.86	1	0.00
Very angry	Seclusion	39.34	1	0.00
Oxa	Seclusion	37.99	1	0.00
Door	Seclusion	37.44	1	0.00
Mr last night	Seclusion	37.35	1	0.00
Ambulant practitioner	Seclusion	37.31	1	0.00
Not sick	Seclusion	37.24	1	0.00
Own room	Seclusion	36.15	1	0.00
Emergency medication	Seclusion	33.44	1	0.00
1 h	Seclusion	31.19	1	0.00
Psychotic	Seclusion	29.47	1	0.00
Hard	Seclusion	29.09	1	0.00
Short	Seclusion	28.97	1	0.00
Hunch/suspicion	Seclusion	28.75	1	0.00
Weed	Seclusion	28.75	1	0.00
Medication	Seclusion	27.79	1	0.00
Pointed	Seclusion	27.32	1	0.00
Early shift	Seclusion	24.03	1	0.00
Direct	Seclusion	23.64	1	0.00
Agitated	Seclusion	23.53	1	0.00
Shower	Seclusion	23.30	1	0.00
Suspicious	Seclusion	22.13	1	0.00
Considerable	Seclusion	21.70	1	0.00
Radio	Seclusion	20.62	1	0.01
Confiscate	Seclusion	20.16	1	0.01
Loud	Seclusion	19.86	1	0.01
Security	Seclusion	19.52	1	0.01
Florid psychotic	Seclusion	19.52	1	0.01
Incident	Seclusion	18.72	1	0.02
Paranoid	Seclusion	18.71	1	0.02
Police	Seclusion	17.75	1	0.04
Schedule	Seclusion	17.52	1	0.04
Not clear	Seclusion	17.39	1	0.05

**After Bonferroni correction; **time-out.*
*The original Dutch resulting concepts are included in the Supplementary Material **(Data Sheet 1)**.*

and custody measure). These phrases are in line with literature that describe the reasons for using seclusion or restraint in psychiatric inpatient practice. For instance Keski-Valkama et al. (36) found that agitation/disorientation was the most frequent reason for the use of restraint and seclusion. Knutzen et al. (37) discovered that the restrained group in their study consisted of a large proportion of psychosis related primary diagnoses. Larue et al. (38) describe that the main reasons for seclusion were agitation, disorganization and aggressive behavior. Vollema et al. (39) found that the risk for seclusion increases in the presence of irritable/aggressive behavior, motoric restlessness, and the decrease of the feeling of safety among staff. Bowers et al. (40) mention aggressive behavior as a reason for seclusion. El-Badri and Mellsop (41) found that a primary diagnosis of schizophrenia, mania and substance abuse tended to be secluded more frequently than others and also threats of violence to staff, property and actual violence. Husum et al. (42) discovered that patients who are overactive and aggressive, experiencing hallucinations and delusions, executing self-injury or at risk of suicide have a higher risk of being secluded and restrained than patients not showing such behavior. They also found that diagnosis of schizophrenia or other psychosis was linked to seclusion. Tunde (43) wrote that those that were secluded were more likely to be young, involuntarily admitted, had a diagnosis of schizophrenia, were a risk to others, risk to self and at risk of absconding. Noorthoorn et al. (9) reported that higher seclusion rates were associated with psychotic disorders and male gender.

2. Other containment measures used in psychiatric practice (i.e., the concepts including time out and emergency medication). These "alternative" containment measures are for example described by Dack et al. (44). They defined a number of containment measures used in psychiatric practice, such as seclusion, PRN medication, physical restraint, time out, compulsory intramuscular medication.
3. implementing seclusion (i.e., the concepts: seclusion (three concepts—different spelling or abbreviation), ground, security, alarm, force majeure, and police). These concepts seem to describe the process of secluding a patient.
4. the working environment of nursing staff. For example the concepts: office, medication, colleague, confiscate, and physicians.
5. non-specific terms, such as cigarette, radio, night, everyone, water, bathroom, and 5 o'clock.

The concepts that show a relationship with non-seclusion also have face validity and seem to describe unobtrusive and calm patients. Striking are the words relating to depression and suicidal behavior. This does not seem to resonate with, for example, one of the findings of Vollema et al. (39) that depression was more common among those who were secluded. Also the word woman seems to be in line with El-Badri et al.'s (41) finding that men were more likely than women to be secluded.

It was interesting to look at the significant relationships of the concepts a week before the event of seclusion or discharge. A little more than half of the concepts that were significant in the full 14 days were significant during the days 14 to 7. Even though a

TABLE 5 | Signicifant concepts 7 days prior to discharge (non-seclusion).

Concept	Higher frequency in category	Chi-square	df	*p*-value*
Liberties	Non-seclusion	88.99	1	0.00
Friendly	Non-seclusion	72.06	1	0.00
Furlough	Non-seclusion	67.53	1	0.00
Good	Non-seclusion	62.44	1	0.00
Mr not awake	Non-seclusion	51.57	1	0.00
Ms not awake	Non-seclusion	50.43	1	0.00
Friendly present	Non-seclusion	49.57	1	0.00
Home	Non-seclusion	41.32	1	0.00
Quiet	Non-seclusion	41.09	1	0.00
Not awake	Non-seclusion	27.65	1	0.00
Unnoticeably present	Non-seclusion	22.85	1	0.00
Contact	Non-seclusion	21.05	1	0.01
No symptoms	Non-seclusion	17.99	1	0.03
Whole night not awake	Non-seclusion	17.36	1	0.05

**After Bonferroni correction.*
The original Dutch resulting concepts are included in the Supplementary Material ***(Data Sheet 1)***.

lot of the words are not yet significant, there are still words that describe reasons for seclusion (i.e., agitated, charged, threatening, psychosis) and the use of other containment measures (i.e., time out and emergency medication). This could mean that a seclusion can be predicted a week before commencing and makes text mining an interesting tool in the quest of reducing the use of seclusion. However, about one third of secluded patients are secluded more than once during an admission and seclusion usually takes place in the first week of admission (41, 43). This could be a confounding factor in the concepts found in this study, as some are already describing a seclusion incident.

This study took place during nationwide seclusion reduction initiatives that also affected the culture on most admission wards in The Netherlands (10, 14) and resulted in a reduction of seclusion rates (10–12). These changes are not expected to have an impact on the presently found results and conclusions. The reason is that text-mining reflects the culture and way of working on a specific ward. Regarding concepts related to seclusion that describe the reason for using the restraining measure: these are expected to result in similar words, as reasons for using a restraining measure are universal (usually relating to aggression).

There are several limitations to this study. The present study used a particular text mining application. There are several other applications for text mining available on the market, which analyze text in the same way. Perhaps if the present study used different software the results would be different. This, however, is not to be expected.

A limitation is the question of generalizability. This study was conducted on a specific ward in the Netherlands, using Dutch words which may translate differently in other languages. Nevertheless, using text mining in a particular ward always starts with a baseline and training a model in the particular setting. It could be quite possible that depending on cultural or clinical setting and language other concepts can be identified in the EMR that precede or predict seclusion. However, it does seem plausible that similar concepts as found here will also result on another closed psychiatric ward (with the exception of phrases used in a particular hospital, such as the name of the ward or codes used to describe symptoms), because similar phrases as reasons for seclusion are also described in literature. But it is important to keep in mind that the present results only give an indication that text mining the EMR in this context is feasible. Another limitation is that staff do not report in the same way, such as using abbreviations or another spelling for words. The same word can be noted differently in the EMR. For example time-out room: t.o., time-out room, time out room, time-out room. The software did not seem to include these as same entities and resulted in these concepts having a lower frequency. These concepts will therefore have to be manually identified in the exploration phase and combined as input for a possible future predictive model. However, taking into consideration that this study was conducted several years ago and the field of data analysis has evolved and is momentarily thriving, it could be expected that these duplicates of concepts would already be considerably diminished in the first step of analysis with present day updated and new software. Furthermore, the period of 14 days studied here was not compared for the individual patients in the same time-frames. There could be confounding factors involved in these different timeframes, such as an incident that has taken place on the ward or the time of the year. Also, it could be that some staff members view certain patients in a biased way and write their reports accordingly. Additionally, each of the 14 days may not comprise of a comparable quantity of reports that were analyzed. It is advised that future analysis controls for this by making "buckets" of reports to improve comparison. Also, perhaps non-secluded patients as a comparison group can be selected in the middle of admission and not before discharge. This could possibly lead to less discharge-related concepts.

The most important future direction is building and testing a predictive model, for example as described in Barak-Corren et al. (27). In the future perhaps a trained and tested text mining model could lead to "real time" analysis of all day-to-day notes and reports in the Electronic Medical Record. This means that the staff can continue their "routine" way of recording without increasing administrative workload and in the meantime be supported in their judgment and prediction about patients at risk for seclusion. This judgement could be based, for example, on routinely applied structured risk assessment scales (Crisis Monitor) (22). With the use of a specific "User Interface," data derived from the EMR database can be "transformed" into real time risk assessing information, indicating the probability of seclusion. This can, through a predictive algorithm, yield the signals per individual patient, for example: green indicating no problem, orange indicating providing extra preventative care for the patient and red indicating immediate action needed. Either at the nursing station or on a handheld device, a warning can be generated per individual patient. The type and sequence of the interventions in phase orange or red can be protocolled both in a general way and tailored to specific patient needs. On the basis of continuous feedback, validity of the system can be upgraded and adapted. Ultimately it can be fine-tuned to local resources and attitudes leading to a Clinical Decision Support System. This enhances safety of patients and staff in general, not only with regard to seclusion. Another aspect is that it may also support inter staff communication on a continuous base in an effective and efficient adjuvant way.

It is clear that this approach can also be used in many other contexts. Currently our institution is looking into the possibilities of text mining to support Assertive Community Teams with this approach to diminish (involuntary) admissions and screen outpatients for suicidal tendencies.

Altogether, these results answer the research question positively and it seems to be feasible to identify certain concepts in the EMR that typically precede a seclusion episode. These premature findings may be regarded as a "proof of concept" to use text in the EMR from patients admitted to an (acute) admission ward to help predict subsequent seclusion. Furthermore, these results may help process implicit (clinical) knowledge to become formal knowledge. As mentioned before, this is a pure exploratory study and the study should be repeated, a model built, trained and tested and further evaluation and validation before becoming part of an evidence-based clinical decision making tool. However, the results seem promising that "real time" text analysis of the EMR may be a clinical feasible and possible efficient way to identify patients at risk for seclusion in the future. Thus, offering opportunities for less invasive alternative interventions.

AUTHOR CONTRIBUTIONS

EH initiated the idea to use text mining techniques on reports in the EMR to predict seclusion. EH initiated the collaboration with Intersystems. RdW made it possible to gather data from the specific wards. MH and NM were responsible for delivering the EMR data for text mining analysis. DvH and DW used their company's software to analyze the data. MH wrote the article together with RdW and EH. RvE was responsible for the chi-square analyses.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyt.2019.00188/full#supplementary-material

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REVIEW
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Mandated Treatment and Its Impact on Therapeutic Process and Outcome Factors

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Court-mandated treatments imply a dual role for therapy providers not only of caring for, but also of having control over, involuntary clients. The impact of legal coercion on the therapeutic relationship and feelings of stigma is widely regarded as negative and detrimental for treatment outcomes. This point of view stands in contrast to advocates of the perspective that involuntary treatment can ameliorate social functioning and thus promote a better quality of life. Regarding other outcome measures, there is evidence that offender treatment is effective and leads to reduced recidivism in criminal behavior. This narrative review provides an overview of research assessing the effects of mandatory treatment on therapeutic process and outcome factors. We conclude that legal mandatory treatment does not have to necessarily result in perceived coercion and reduced satisfaction with treatment and that a caring and authoritative treatment style aids a favorable therapeutic alliance, motivation, and therapy outcomes.

Keywords: perceived coercion, mandated treatment, stigmatization, therapeutic relationship, funtioning, recidivism

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INTRODUCTION

Correctional treatment mandated by court is aimed at reducing recidivism in offending behavior. There is some evidence that this form of legal coercion can be effective in reducing the offending outcome (1), while other evidence suggests that mandated treatment is ineffective in reducing recidivism (2). The concept that legal coercion is inevitably related to perceived coercion with negative effects on treatment outcomes (3, 4) is widely held. In contrast, other evidence indicates that also voluntary clients can feel coerced into hospital admission (5) with resulting poorer satisfaction (6) and symptom change (7); legal detention had no association with perceived coercion (8, 9). These contradictory results hint at confounders and moderating variables influencing general treatment outcomes.

Mandated Treatment and Therapy Facets

While mandated therapy provides external motivation to attend treatment, voluntary clients are normally believed to be intrinsically motivated. This view is challenged by studies that demonstrated perceived coercion in voluntarily admitted service users (10). Perceived coercion in voluntary samples had an unfavorable impact on long-term outcomes (11). While involuntary referrals by civil law and mandated treatment by penal law are a form of legal coercion resulting in external motivation, voluntarily admitted service users should at first glance be more motivated by their own innate psychological needs. The evidence that perceived coercion can also be present in voluntarily admitted clients resulted in statements that perhaps there are not so many differences between mandated and voluntary clients after all; a considerable percentage of clients are being coerced, whether it be legally or informally by family or employers, to be in therapy (12). This finding, however, has important implications for the stability of therapeutic interventions: behavioral changes last longer when they are the result of intrinsic motivation; extrinsically motivated behavior changes only last as long as extrinsic controls are in place (2, 13).

Literature suggests that mandated clients are more resistant to therapy than voluntary clients (14, 15). This may be a reaction to compulsory treatment as clients are more likely to resist their loss of freedom and independence (16, 17). A widespread model of motivation to change in generic psychiatry is the Transtheoretical Model (18), which suggests that recovery and the engagement with therapy is typically not a linear process but rather involves a cycling back and forth of the person's perception of his or her problems and the level of behavior change. Therapy and engagement with the mandated client are further influenced by the forensic setting and need to be reflected in the therapeutic process (19). Frequent barriers confronted in mandated therapy are predominant male clients with more restrictive attitudes toward the changeability of psychiatric disorders (20), chronic course of severe mental illness, and high rate of comorbidity (21). Clients seem less inclined to seek help (22).

Within the scope of this narrative review, a literature search was conducted in PubMed, PsycInfo, and Google Scholar using various combinations of the following search terms: "mandated therapy," "court ordered treatment," "perceived coercion," "therapy outcome," "treatment outcome," "therapeutic process factors," "recidivism," and "symptom levels." From the resulting body of literature, domains were generated (stigmatization, functioning, therapeutic relationship, and satisfaction) and grouped according to clinical significance and empirical relevance for general therapy outcomes and factors. Papers were referenced in the review if they included relevant and additional insight into the respective domain; studies were not integrated or reproduced in their fundamental conclusions if publications with similar conclusions had already been discussed. The resulting summary of factors constitutes a compilation for service providers who are interested in the clinical application of the results. The quality of the therapeutic relationship is described as an important process factor in psychiatry and psychotherapy (23). The quality of the relationship between a service provider and a client is widely recognized as playing a key role in treatment adherence (24), symptom reduction, medication adherence (25, 26), outcome of psychotherapy and psychosis treatment (26–28), and quality of life (29). Positive effects of relationship quality were reported on client satisfaction, personal trust (30), and recidivism of criminal behavior. Literature suggests an association between lower dropout rates, better medication adherence, fewer readmissions, and improved symptom levels for clients suffering from schizophrenia spectrum disorders and the quality of the relationship between service provider and client (31–33). Coercive measures are believed to have a negative impact on the therapeutic relationship (34). A pronounced perceived coercion was reported to be associated with a poor rating of the therapeutic relationship (35). In forensic settings, these aspects gain even more impetus where the legal framework leads to more restrictive treatment requirements (23).

Experiencing stigmatization and accompanying discrimination are a powerful negative attribute in all social relations including psychiatric treatment. Feeling stigmatized has multiple negative consequences for mentally ill persons (36). Besides increased anxiety and stress, decreased functional outcome, loss of self-esteem and quality of life, and decreased social participation were reported (37, 38). As both mental health service utilization and treatment adherence are decreased through stigmatization, it can indirectly promote the aggravation of psychiatric symptoms (39, 40). Mandated clients have the extra burden of their dangerous or antisocial behavior. The existing—and quite limited—literature on stigmatization in forensic settings suggests that this would merit the inclusion of anti-stigma interventions in therapeutic programs (19).

According to literature of all available client-reported outcome measures, treatment satisfaction has the greatest evidence base (41). Improved satisfaction with services is associated with positive treatment outcomes including improved quality of life (42), higher levels of functioning (43), and reduced admissions (44). Compulsory actions and coercion were commonly described by clients as dehumanizing and detrimental to treatment satisfaction (45).

The limited systematic research on clients following coerced hospital admission and symptom change over time suggests some improvements (46, 47). As a limitation, clinical improvement has been commonly assessed on global functioning scales rather than validated symptom scales with usually small sample sizes (7). Recidivism in offending behavior is a peculiarity of mandated treatment and is normally not investigated in generic therapeutic research, while the influence of psychopathological symptoms on recidivism is of interest in forensic psychiatry.

So what does literature suggest about the impact of mandated therapy on the addressed therapeutic process and outcome factors?

STAGES OF ENGAGEMENT

While therapeutic stages in forensic settings are very similar to generic therapeutic processes, there are some peculiarities to consider. Mandated therapy can be divided into the initial task of stabilization and observation and the middle phase of remediation. The end phase includes rehearsal of skills, beginning detachment, and consolidation as preparation of leaving the scope for legal coercion (19). Important features of change for mandated clients include the realization of the need for therapy, coupled with a willingness to ask for and receive help (48). To counter the chronicity of a subgroup of clients who remain resolutely "unwilling" and therefore difficult to engage for many years, avoidance and needs resulting from complex life histories often influenced by trauma and experiences of abuse (49) are to be addressed. Frequently, cognitive behavioral therapy elements like motivational interviewing (50) are adapted in offender treatment as motivation for change cannot be assumed (51). The prolonged initial phase focuses on engagement, attendance to the therapeutic alliance, and the duration and intensity of treatment (19). Studies of readiness to change under legal coercion among adults with substance use problems provided mixed patterns of result but suggested a greater readiness to change after controlling for addiction severity, prior treatment history, and gender (3, 4). The prospective outpatient study (*n* = 295) was a heterogeneous, mixed gender sample of voluntary and legally coerced drug abusers with stages of change as an outcome measured by a self-administered instrument (4).

According to the Self-Determination Theory, factors that enhance versus undermine competence, autonomy, and relatedness yield enhanced self-motivation and mental health (52). Such an intervention style promotes a progress from amotivation, to passive compliance, to active personal commitment (52); these stages of motivation and engagement seem to be effective in general for a wide spectrum of service users irrespective of legal setting. In mandated treatment, only limited results hint at the generalizability of these results. However, favorable outcomes seem to result from interventions that encourage powerful attachment relationships, and communicate compassion, warmth, and intimacy (53), in short interventions, which promote a better therapeutic relationship.

THERAPEUTIC RELATIONSHIP

Only sparse literature is available on the quality of the therapeutic relationship in mandated treatment. A cross-sectional study (*n* = 113) investigated adult male inpatients with a diagnosis of schizophrenia spectrum disorder being treated in general psychiatric wards and medium secure forensic psychiatric units *via* questionnaires (23): Self-referred clients reported a more positive therapeutic relationship than involuntary admitted clients in general psychiatry wards. Mandated treatment clients in forensic units gave an intermediate rating. There was no association with the clients' legal status and the rating of the quality of therapeutic relationship or the service provider's rating. Symptom severity and especially hostility were inversely related to the ratings of quality of the provider–client relationship. Generalizing these findings to females and service users without severe mental illness would be tentative, limiting the evidence base. However, the vast majority of patients of mandated treatment by penal law are male.

In the community, probationers and their officers believed that the quality of their relationship had an important influence on clinical and criminal outcomes (54). To better capture the dual role of providers of mandated therapy to care and to control, Skeem at al. (55) developed and validated a self-report-based questionnaire and probation officer form (the Dual-Role Relationship Inventory) for involuntary clients, which assesses the quality of the therapeutic relationship. It was found superior to a leading measure of therapist–client relationship quality in capturing the nature and effect of relationship quality in mandated treatment. The implication of this finding is that the dual role of mandated treatment is not adequately captured by "traditional" conceptualizations of the therapeutic alliance. More specifically, a "firm, but fair" approach with blending care and fairness with an authoritative (not authoritarian) style is more effective. This form of procedural justice (e.g., patients feel respected and experience a participatory decision making) was seen as crucial for experiencing less coercion even in involuntary settings (56–58). Probation violations and new arrests were predicted by the quality of synthetic relationship, e.g., the therapeutic approach of combining active listening and directive supervision without stressing a punitive orientation. This negative style of establishing control through authoritarian service provider confrontation within a session was labeled "Toughness." This had deteriorating effects on relationships and future rule compliance mainly through client mistrust and treatment amotivation. The accompanying indifference to clients' views and feelings, expectation of compliance, and punitiveness when expectations are not met seem to result in a negative struggle over issues of power and control. This rationale is in line with evidence that hospitalization, even when voluntary, was viewed as more coercive when clients rated their relationship with the admitting clinician negatively (35): The UK cross-sectional, mixed-gender study (*n* = 217) of consecutive admissions to acute adult wards measured perceived coercion, global functioning, and therapeutic relationship with self-reports. The examined disorders included affective and substance use disorders besides schizophrenia and others. Major limitations were the single-site design, the exclusion of a substantial proportion (about 22%) of possible participants because they were deemed too ill or too intellectually impaired, and retrospective measurements. A meta-analysis of the effectiveness of interventions of juvenile offenders (aged 12–21, outcome measure: recidivism, 548 independent study samples) in English-speaking countries emphasized the importance of a "therapeutic" intervention philosophy as opposed to a focus on deterrence, surveillance, or discipline (59).

In short, the interpersonal style influences the quality of the therapeutic relationship. The quality of the provider–client relationship shapes treatment outcomes more strongly than specific psychotherapy techniques applied (24, 60, 61). These findings seem to be present in juvenile and adult samples of voluntary and mandated treatment settings irrespective of gender and seem to be valid for different mental disorders. Evidence suggests that the quality of the therapeutic relationship is capable of being influenced in the same way in inpatient or outpatient settings; something not alike the feeling of stigmatization and devaluation.

STIGMA AND DISCRIMINATION

There is a lack of research investigating the effect of mandated treatment on feelings of stigma. A Swiss study investigated the impact of different psychiatric service institutions on the stigmatization of mentally ill persons through a representative population survey (36): The desired social distance of the general representative population (*n* = 2,207) and therefore the stigmatization of mentally ill persons in this vignette-based study were lower in relation to psychiatric service use than to psychiatric symptoms; i.e., being treated in a psychiatric unit at a general hospital decreased stigmatization. It was of no relevance for stigmatization if hospitalization occurred in a general or forensic psychiatric clinic. Limiting the results is the fact that it is not clear how the attitudinal measure (i.e., the social distance scale) translates into real-world behavior.

Outpatient voluntary and court-ordered treatment for people (male and female adults) with serious mental illness were examined in the US study of Link and Castille (62). The observational study of a convenience sample (n = 184) was limited through a possible dropout bias and possible confounding variables. There was evidence supporting the hypothesis that self-reported feelings of coercion increased experience of stigma and devaluation. Further, there was a strong correlation between the number of involuntary hospitalizations and the current perception of stigma. This finding indicates that prior experiences with coercion influence subsequent experiences of coercion. Surprisingly, the ill-effects of perceived coercion and resulting lower self-esteem did not seem to affect illness-related social functioning or symptoms. This finding is in line with results from Ref. (10), which found no difference in functioning between involuntarily admitted clients and uncoerced voluntary clients (n = 169 mixed-gender inpatients with major mental illnesses) regarding longer-term therapy outcomes. Stated limitations include a moderate follow-up period (1 year after discharge) and completion rate of instruments, regarding engagement and functioning, which might have introduced a selection bias in these results.

In summary, what can be inferred from the sparse evidence is only tentative. Not the legal setting *per se* but rather perceived coercion seems to be linked to feelings of devaluation in adults. Also, having a history of coercive experiences makes it more probable to reexperience discrimination. As mentioned, lower self-esteem does not necessarily result in lower functioning (10), but is that true for treatment satisfaction as a major factor as well?

TREATMENT SATISFACTION AND FUNCTIONING

An Irish multicenter study (n = 161 adult male and female participants with serious mental illnesses) observed a good overall level of satisfaction with services following voluntary and involuntary admissions (6). Experiences of physical coercion, low perception of being respectfully involved in a fair decision-making process regarding admission, and involuntary hospitalization were associated with lower service user satisfaction. In the same study, the therapeutic relationship was moderately correlated with the level of reported satisfaction with the service. Better global functioning and improved insight were associated with higher level of treatment satisfaction, emphasizing the relevance of service user satisfaction for general treatment outcome. A selection bias of uncompleted interviews and possible nonparticipants with higher probability of involuntary legal status were seen as main limitations.

The investigation of court-ordered outpatient treatment (n = 184 male and female adults with serious mental illness) in the United States observed improvements in symptoms, resulting in better social functioning and at a trend level better quality of life (62). This effect was countered and an erosion of quality of life was noted in study participants who self-reported elevated levels of coercion. Comparable long-term effects of voluntary and involuntary admissions to mental health services were reported regarding satisfaction and global functioning 1 year after discharge. This implied that clients feeling coerced to treatment can be subsequently engaged with a good therapeutic alliance (10).

In short, there is scarce information in adult service users with mental illness on global functioning and treatment satisfaction in involuntary settings. Literature could be interpreted to the effect that high levels of perceived coercion and low involvement of service users seem to be associated with lower treatment satisfaction and global functioning. Other outcome parameters like criminal recidivism and symptom change are the focus of more studies in forensic psychiatry.

SYMPTOM LEVELS AND CRIMINAL RECIDIVISM

Symptom change (as an outcome factor for treatment effectiveness) after involuntary treatment in comparison to voluntary admission to services is often the primary focus of debate. A multinational European study investigating about 3,000 adult male and female inpatients of differing legal status and their subjective feeling of coercion concluded that, following coerced hospital admission, clients show, on average, moderate improved symptom levels after 1 and 3 months (7). This follow-up period could be seen as a limitation, as well as a possible selection bias through a high percentage of non-participants (about two-thirds). Besides higher baseline symptoms, legal voluntary status with feelings of coercion, and initial low treatment satisfaction, social factors like unemployment and living alone were important predictors for poorer symptom outcomes. Mandated treatment in the United States as evaluated in over 2,700 women with histories of abuse and co-occurring disorders equally demonstrated an improvement on psychiatric symptoms; the nationwide longitudinal study suggested that coercive status proved to be a significant main effect; i.e., being mandated was associated with greater improvement (63). However, women without drug abuse were not included and symptoms were evaluated by self-report.

The results on general and specific recidivism as a main treatment outcome in forensic therapy are partly inconsistent and reveal a great heterogeneity of results. While a meta-analysis (129 mostly US and Canadian studies, juvenile and adult samples of both gender, various treatment types and quality, no information on mental illnesses given but treatment targets specified) of mandated treatment of offenders was found to be ineffective on general recidivism, particularly in custodial settings, voluntary treatment was found to produce significant treatment effect sizes regardless of setting (2). However, mandated treatment was reported as effective on specific recidivism. It was reported that three decades of research into the effectiveness of legal coercion in the treatment of substance abusers have yielded inconsistent and inconclusive patterns (3). A more recent evaluation of specialized treatment on recidivism rates in Switzerland (n = 412 male adult offenders; mean follow-up, 7.9 years; mean duration of treatment in the intervention group, 4.5 years; overall about 85% psychiatric diagnoses of participants) revealed only a trend toward a positive treatment effect in violent and sexual offenders (64). The significantly higher criminal history of the intervention group and substantial missing information on diagnoses in the control group (i.e., the control group could have been less mentally burdened) constitute limitations of these results. A significant specific reduction in recidivism was, however, found by Lösel and Schmucker (65, 66) who, in two large meta-analyses (69 studies of adult and juvenile intervention and control group designs included in 2005; 29 study comparisons of males in group designs in 2015) on the effects of sexual offender treatment, reported a relative reduction in recidivism of 37% and 26.3%, respectively. The authors stated, though, that the evidence basis for sex offender treatment is not yet satisfactory and that there is a need of differentiated, high-quality evaluations. Results of a more recent meta-analysis (35 studies in 10 countries involving mostly violent offenders of heterogeneous samples and admission criteria) on general reoffending provided some evidence that clients discharged from forensic psychiatric services have lower offending outcomes than control groups discharged from prisons (1). A quantitative summary on meta-analyses from Andrews and Bonta (67) stated that rehabilitation programs of adult offenders that adhered to the Risk–Need–Responsivity (RNR) model have been shown to reduce recidivism up to 35%. This model proposes who should receive services in correctional settings (e.g., moderate- and higher-risk cases), treatment targets (criminogenic needs), and the most appropriate form of delivering therapy (e.g., cognitive social learning).

In juvenile offenders (aged 12–21, mostly male) a meta-analysis (548 mostly US study samples) stated a mean reduction in recidivism of 10–13% from a control group for interventions following a therapeutic and qualitative approach (59). The information on the interventions used was limited and target needs and types of recidivism were not differentiated. Worth noting in this regard is that literature reports aspects of residential youth care to be associated with repression and coercion (68).

In summary, literature suggests that criminal recidivism can be effectively reduced if treatment is evidence-based, supportive, and based on relational care (59, 69–72). These findings are replicated in juvenile and adult samples mostly with a male bias, but relatively independent of the treatment setting.

DISCUSSION

Evidence suggests that perceived coercion in treatment is linked to an impaired therapeutic process and outcome compared to voluntary treatment. While correlations have repeatedly been reported between perceived coercion and involuntary legal status (35, 73–75), some findings indicate that perceived coercion is not necessarily the result of mandated treatment status; i.e., feelings of coercion do not always follow a court order to therapy. Indicative of this consideration are findings that even physical coercive measures are shown to be a separate entity from procedural justice and perceived pressure (76). Further, the therapeutic relationship seems to confound legal status as a predictor of perceived coercion (35). The feeling of coercion seems to be dependent of various determinants, many of which depend on the quality of the relationship with the service provider, and clinicians should therefore routinely consider that involuntary and voluntary clients have the potential to experience interventions as coercive (45). This is in line with study results comparing reports of coercion in clients mandated to outpatient treatment and a control group that reported no significant differences (62). In qualitative analysis regarding perception of coercion, three themes were identified to be linked to feelings of coercion: viewing the service institution as ineffective and other treatments as more appropriate, not participating in the admission and therapy, and the missing feeling of respect (5). These themes point consistently to low procedural justice as being important in the development of experiences of coercion.

Discrimination does not seem especially associated with a forensic setting (36), but rather perceived coercion is linked to feelings of stigma; furthermore, a history of coercive experiences facilitated the reexperience of devaluation (62). Similarly, high levels of perceived coercion and inability to involve service users seem to result in lower treatment satisfaction and global functioning (6, 10).

Ethical considerations place a great emphasis on personal autonomy and self-determination of clients (77). Regarding mandated and forced therapy, there is subsequently a strong focus on what circumstances can justify infringing these values. The argument being made for coercive treatment is that in certain circumstances, i.e., when certain mental disorders determine the behavior of the client and therefore constitute a form of coercion themselves and result in an inability to consent, it can be justified to perform compulsory treatment to restore the capacity for autonomy (77). Other arguments point out that perpetuating the assumption that all types of leverage including mandated therapy amount to coercion is misleading and unhelpful (78). The lines between bargains and coercion are not easily drawn, and under certain conditions, several forms of mandated treatment are better understood as the product of negotiation and voluntary agreement (e.g., access to housing, avoidance of jail) (79). Similarly to the ethical importance of self-determination, therapeutic considerations stress three innate psychological needs: a secure relational base (relatedness), the feeling of volition (autonomy), and the feeling of being efficacious with respect to activities (competence) (52). The fulfilment of these needs seems to predict mental well-being and facilitate the integration of extrinsic motivation.

Research on the therapeutic process and outcome factors described above suggests that mandated treatment can also be associated with results comparable to and, in some cases, better than voluntary treatment. While perceived coercion, resistance, and lack of intrinsic motivation to change are more likely to be present at the beginning of treatment, these do not seem to be determinative of the mentioned therapeutic factors and outcomes as therapy progresses (12). These treatment barriers appear to be accessible to a specific therapeutic relationship quality and interventions particular in mandated therapy settings. According to the stages of therapy engagement, a caring, fair, and trust-evoking quality of therapeutic interventions blended with a firm but not authoritarian or punitive control seems to be necessary to change unwillingness or amotivation to therapy engagement and the will to change (34, 55). Paired with the effort for procedural justice as far as legal constraints of mandated therapy allow, the respectful involvement into treatment might assuage possible experiences of coercion, resulting in a better quality of therapeutic relationship, more treatment satisfaction, and less experience of stigmatization. A possible distinct advantage of mandated therapy is the (at first more extrinsically motivated) consistent and longer attendance in treatment than in voluntary settings. This circumstance could lead to a more intrinsic motivation in offender clients along the therapeutic process (12). This factor and the additional provision of supportive aftercare may explain good levels of satisfaction in involuntary treatments along the way and resulting better levels of functioning (1, 6).

There is some evidence that mandatory treatment does achieve the required treatment targets of legal coercion: reduction of recidivism and symptoms. Reports of high symptom loads of clients in involuntary and forensic settings (7, 21) seem to moderate low improvements of symptoms (7). The heterogeneity of evidence on the reduction of reoffending might be attributable to different admission criteria of institutions, varying treatment principles and quality, variability in sample compositions, missing information on client location at discharge, and varying quality of included studies in meta-analyses (1). While the odds of mandated therapy appear to be stacked against favorable outcomes at the onset, there is evidence that mandated treatment can work in a wide range of specific criminal behavior like violent or sexual offending (2, 12). Adhering to Risk–Need–Responsivity principles in forensic therapeutic settings has repeatedly generated lower recidivism rates with a substantial effect [i.e., mean effect sizes (r) of up to 0.29] (67). In institutional youth care, effects of coercion might be associated with residential care (72). However, evidence from juvenile offender samples suggests that effective treatment is not highly context dependent; i.e., the intervention effects are even robust in institutional environments with more potential adverse conditions (59).

The nature of the search and inclusion process employed in the current narrative review limit the generalizability of some of the reported results. The evidence base of mandated therapy is small regarding various facets of therapy process factors. To complicate matters further, mandated therapy can occur in different forms of legal coercion (i.e., by civil or penal law). Therefore, the current review provides a clinical overview to summarize the most relevant results for service providers and aims to raise awareness of important issues associated with mandated therapy for future research. Another major limitation of the current review is that the present overview—due to the state of the literature—cannot make specific statements on various determinants of mandated treatment outcome (i.e., depending on inpatient or outpatient setting, male vs. female samples, sex offenders/non-sex offenders, and heterogeneous types of mental illnesses). In addition, most of the reported studies were observational, cross-sectional studies, which could only report associations and no causalities.

In conclusion, treatment outcomes in different domains seem to be linked to the client's motivation to attend treatment and the feeling of being coerced into therapy, regardless of mandate (2). It has been argued that there is, potentially, an element of coercion in every clinical encounter (80) and the perception of coercion has a variety of determinants, many of which are dependent on the quality of relationship with the service provider (45). Therefore, reducing feelings of coercion might improve treatment outcomes, prevent disengagement from services, and ameliorate therapeutic relationships (5). Facilitating the integration of extrinsic motivation through participatory decision making and interpersonal contexts of relatedness and security produces maintained change (52). Service providers should therefore be encouraged to find the right balance between control and flexibility (70): A dual-role relationship ("firm but fair") can help to motivate offenders to engage and stay in therapy (55) and reduce offending behavior (34, 35), despite lack of motivation and possible high symptom load. In this regard, the more consistent and longer attendance due to legal framework with provision of supportive aftercare (70) can enable motivational interventions and strengthen therapeutic relationships.

AUTHOR CONTRIBUTIONS

HH and TV wrote the initial article, and CH revised the paper critically for important intellectual content.

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Experiences and Perceptions of Police Officers Concerning Their Interactions With People With Serious Mental Disorders for Compulsory Treatment

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Background: In Portuguese law, police officers are the link between security and the treatment of people with serious mental disorders who require compulsory admission. The perceptions of police officers are in part based on their individual characteristics, and may influence their capability in managing patients they are transporting. However, little is known about police officers experience of this process.

Methods: In-depth semi-structured interviews explored the experiences and per- ceptions of police officers from Porto Police Department in Portugal. All interviews were audio recorded, transcribed and analyzed through thematic analysis.

Results: Ten police officers agreed to take part in this study. The interviewed police officers consisted of nine men and one woman, had an average length service of 22.6 years and all had more than 10 years of service. The interviews highlighted that the activity of the police under the Mental Health Law is shaped by whether the person who they are transporting has a mental health disorder and requires psychiatric admission. The police officers reportedly adjusted their behavior to give patients more attention, comfort and empathy. However, they describe these interactions as one of the most time consuming and challenging activities for the police. Importantly, they acknowledged family members as crucial for police officers to be able to gain direct access to patients and knowledge about them. Police officers showed to perceive people with mental illness as unpredictable, dangerous and without discernment, and identified some aspects of the process that could be improved, such as hospital admission waiting times. Police officers felt they required more skilled support to deal with unwell patients.

Conclusions: This study highlights the perceptions and experiences of police officers about the process of compulsory admission, and identifies areas of unmet needs. These findings help to raise awareness of their needs, improving this process, and ensuring a more humane and effective approach.

Keywords: law, experience, mental illness, police officers, coercion, compulsory, treatment, Portugal

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INTRODUCTION

Compulsory admission and treatment is a topic of intense debate in psychiatry. This is due to the effects such policies have on people's lives, given that it involves detaining them against their wishes and restricting their individual liberty (1). Compulsory treatment is ethically challenging, often associated with fear, exclusion and loss of self-determination (2, 3). The process is based on the assumption that the person is incapable of recognizing that their mental health has deteriorated and there is an urgent need for adequate treatment (4). The majority of mental health professionals disapproves coercive medical measures, but recognizes the impact upon patients' adherence to treatment (5). Some research has also found that a majority of patients understand that they were acutely unwell at the time of their admission and that coercive interventions enabled their recovery (6). However, some patients perceive their admission as a negative experience (6, 7), entailing an intrusion into their physical integrity and their liberty (3). These diverse views raise awareness to patients' potential feelings of ambivalence toward compulsory admissions.

Police officers are one of the first professionals to interact with people requiring compulsory admission due to their mental health. Research in North America (6, 8–12) and European countries (13), has highlighted that the approach adopted by the police officers is crucial to patient's cooperation (10, 14). Police officers' experience and personal characteristics play an important role in their own capacity in doing this task (15). Police officers with a higher level of education (12 years of education or more) appear to perceive people with mental disorders as less unpredictable and dangerous, and capable of having a family (16). Equally, police officers who performed more than six compulsory admission transportations used less physical force during them (16). Thus, the level of education and experience that police officers have in dealing with people with mental illness influences their behavior and perceptions about them (17). For that reason, education and contact should be effective strategies for changing police officers perceptions and attitudes toward people with serious mental disorders (18, 19). However, some police officers report that they do not feel properly trained to deal with a person with a serious mental disorder (9, 14), feeling unable to identify symptoms of mental illness or deal with psychotic or hostile behavior (6, 11).

Police officers see value in obtaining training to avoid potential bad practices (17). However, as a result of their lack of training some encounters between police officers and people with serious mental disorders result in abuse of force, precipitation of violent acts and sometimes even death (15, 20, 21). In the United States in 2015 about 23% (251 deaths) of the total number of deaths ($n = 1099$) resulted from police interactions with people with mental illness (22). The complexity of these interactions magnified the need for implementing standardized educational and training programs, as well as special police teams selected, trained and motivated to help people with serious mental disorders in crises (10, 23). These teams have demonstrated less aggressive interactions with people in crises when compared to police officers who did not receive such training (24). This complex reality has reinforced the need of more assistance from other groups (e.g., special medical local authorities), and a faster access to mental health services during this process (16, 25).

The procedural justice approach is seen as the main pathway to promote police legitimacy, and thus citizens' cooperation (26). This approach is grounded in two components (27): (i) the quality of the decision-making procedures (i.e., citizens participation in the proceedings before the authority's decision, giving citizens a voice, as well as the neutrality of such decision), and (ii) the quality of the treatment (i.e., the dignity and respect in which people are treated, and if the authorities' motives are perceived as trustworthy) (26, 28). These two components emerge into four key constructs that shape police encounters: (i) voice, (ii) trustworthy motives, (iii) dignity and respect, and (iv) neutrality in the decision making (26).

In Portugal, the Mental Health Law (Law n. ° 36/98, July 24th, 1998) aims to establish the main principles of Portuguese mental health policies and rules the compulsory admission for people with serious mental disorders (29). Although the Fundamental Health Law (Law n. °. 48/90, August 24th, 1990) establishes the patient's rights and duties in the Portuguese services (30), the mental health patients are endowed by the Portuguese Mental Health Law with more rights and duties. This illustrates the legal recognition of the idiosyncratic nature of mental illness, and its repercussions on the self-determination capacities of the person with a serious mental disorder, as well as the specific implications of psychiatric treatment, which obligates to ensure other rights and duties. Thus, the Mental Health Law is a crucial and nuclear framework declaration of mental health rights in Portuguese legal order (31). Its principles are more connected to guardianship and protection rather than medical or social care. This means that the juridical model prevails over the therapeutic model (32), as the assessment of the legal status of people with mental illness is governed by constitutional principles and norms, leading by equality and non-discrimination (33).

The Portuguese Mental Health Law (on 23rd article, urgent admission) gives a special role to the police officers who are responsible for the transportation of people with serious mental disorders to the psychiatric emergency service closest to their residence (29), and are the link between the security and treatment of these patients. Between 1999 and 2007 the percentage of compulsory admissions in Portugal at the *Hospital de Magalhães Lemos*, Porto, rose significantly. In 1999, 1 year after the implementation of the law, compulsory admissions represented 1.5% of all the admissions, whereas in 2007 this percentage rose to 7.2%. The same tendency is observed in *Hospital Júlio de Matos*, Lisbon, where in 1999 the amount of compulsory admissions represented 5.53% of all admissions compared to 15.31% in 2007 (34). Of utmost importance is the article cited to begin the process, because this determines whether the police are involved or not (e.g., in non-urgent situations). Between 2008 and 2010, 93.2% of all compulsory admissions at these two hospitals occurred following the article of urgent admission (35).

It is therefore clear the importance of police officers in compulsory admissions and in the delivery of involuntary mental health treatment. However, their interactions with people

TABLE 1 | Themes and subthemes.

Police activity and compulsory admission	Family is core in the compulsory admission process	Triad of success	Views of mental illness	Improving the reality of compulsory admission
The importance of the law	Facilitate the access to the patient	Obtain knowledge about the patient	Cyclic	Mismatch between safety and health
The primacy of patients help	Source of information	Building a relationship	Beliefs about people with mental illness	Negative aspects resulting from the police intervention
The operational activity adjusted by the person's illness condition		To be patient and do not rush		Police officers difficulties
Police presence is what counts				Try other solutions
The instrumentalisation of the police				

with serious mental disorders under the compulsory treatment procedure has not been studied. The lack of knowledge in this area requires attention as it is of public interest and would arguably lead to improvements in the mental health care, to ensure it is delivered with dignity and justice.

METHODS

Settings and Participants

The study was conducted in six police departments of PSP (Polícia de Segurança Pública), in Porto, which were selected as they were those with higher number and frequency of compulsory admissions, covering a broad geographical area of Porto metropolitan police department (Matosinhos, Ribeira, Santo Tirso, Maia, Foz, Lagarteiro), and thus giving us some meaningful insight into the topic of the study. An information sheet with information about the study was distributed to all police officers in the department. Further to that, the main researcher approached the police officers in each department, providing them with information about the researchers, the scope of the study, a brief description of the method, and the contact details of the main researcher for any further questions.

The only inclusion criteria were that police officers had completed at least one compulsory admission under the Mental Health Law.

Data Collection and Analysis

A semi-structured interview topic guide was developed in consultation with a senior police officer (see **Supplementary Material**). The first author conducted in-depth semi-structured interviews exploring the experiences and perceptions of police officers of the compulsory admission process, and collected socio-demographic information (see **Supplementary Material**). All interviews were audio recorded using a digital voice recorder (Olympus WS- 853) and were transcribed verbatim. Contextual data relating to the approved police departments were also collected (e.g., a general description of the interview room like the climate conditions, natural light presence, and if there was any physical barrier between the interviewer and the interviewee).

Thematic analysis of the interview transcripts was conducted following the Braun and Clarke's (36) approach, and using the Nvivo 12 software. Police officers' names were replaced with numbers to protect their privacy. Initial codes were generated and then sorted into broader themes, with similar codes placed under the same theme. A theme was determined on the basis of significance to the research question. Themes were then revised and refined to ensure codes within each theme were greatly associated, and that each theme was distinctive. Themes were then named. Procedural consistency was guaranteed using a double-coding approach (by RS and MPC), with cross-checking between coders to ensure consistency.

RESULTS

Twelve police officers were approached, and ten agreed to take part. The police officers interviewed from Porto Police department consisted of nine males and one female, all caucasians, with a mean age of 46.4 years (age range from 34 to 58). The interviews ranged in duration from 25 to 57 min. All were ungraduated police officers, with an average length of service of 22.6 years and all had more than 10 years of service. None of them described having history of mental illness themselves. Although all departments did several compulsory admissions per year, the volume of compulsory admissions differed across police departments, ranging from one intervention per month to several, according to seasons (spring/autumn), festive dates, and vacations periods. All of them reported that they had no specific training to deal with people with serious mental disorders.

Five themes emerged from the analysis of the data: "*Police activity and compulsory admission,*" "*Family is core in the compulsory admission process,*" "*Triad of success,*" "*Views of mental illness,*" and "*Improving the reality of compulsory admission.*" (**Table 1**).

Police Activity and Compulsory Admission

Police activity inherent in compulsory admissions requires very specific characteristics of police officers. Police activity is ruled by a Mental Health Law which determines the exact form and range of their actions. Yet, they are required to deal with the behavior

TABLE 2 | Police activity and compulsory admission quotes.

Police activity and compulsory admission	
The importance of the Law	*“From the moment we are compelling him to do something, in this case to go to the doctor... there has to be a law, a legality that allows us to do that. I think that this is the goal, to give legality to a procedure that will do well. But we have to give legality because we are restricting him of their freedom”* (police officer 03)
	“If I would not have a mental health law, by which means would I deprive him of his freedom that amount of time that I have to take him to a hospital? Because we have that issue, about freedom deprivation. He is not detained, he is just deprived of his freedom during the moment that we force him to go to the hospital” (police officer 01)
The primacy of patients help	*“These people, we have to understand that they are so.... in a state where they do not... they are not in their normal state and we have to try... we are in the first stage … we have to realize that we will deal with people who are not hmmm. They need our help and help from other professionals....”* (police officer 05)
	“We have always to try to say that the reason why we are there is to help them. Therefore… using all the persuasion that we have to say: ‘we are here not to arrest you because you did not commit any crime. We are here just to help you...”’ (police officer 10)
The operational activity adjusted by the person’s condition	*“He is a sick person. When I receive the warrant report they are referred as a patient ‘the patient this, the patient that,’ so, if the warrant refers to them as patient I have to treat him as the patient that he is”* (police officer 01)
	“If it is a person with a mental disorder, I automatically treat them with all dignity and respect, because if they were a normal person, some kind of attitudes I would not have” (police officer 09)
	“In order to watch over patients’ privacy and not to create a negative image, ‘The police is there, what did that guy do?’ Because the public will think that they did something. Therefore I do my interventions, in general, without my police uniform. […] We want to do these interventions with some discretion” (police officer 09)
The presence of the Police is what counts	*“ Maybe if the escort was made by the hospital security they would not respect him so much as they will do with a police officer”* (police officer 07)
	“The patient knows that he cannot exceed himself. Because if he does, the police will be there to finish it. We already had some situations that the physician said ‘no sir I do not want the police here,’ for me it is legit and makes sense, but few moments later they will call us because the patient has strangled his neck” (police officer 03)
The instrumentalisation of the police	*“In situations that we have a warrant, our intervention is quite objective, we have to find the person or pick them up at home, transport them to the hospital, even against their will. Our role is fulfill and enforce.”* (police officer 03)

of a person that has not committed a crime, but who may require urgent care for their mental illness. Police officers are therefore placed in a very challenging situation where they have to balance the law, dealing sensitively with an acutely ill person and fulfilling their duty (**Table 2**).

The Importance of the Law

The existence of a Law that regulates the compulsory admission is the cornerstone of the police activity. It gives them the ability and legitimacy to deprive someone’s freedom in order to take them to a hospital to be seen by a doctor. Police officers in this study highlighted this legal legitimacy as a key factor, as in its absence they are unable to protect and help the person. Another important consideration for the police officers is they guarantee freedom “deprivation” rather than a “detention.” This entails the difference between a criminal detainee and a mentally ill person who has to be deprived of their freedom to seek medical support. This legal difference is well-recognized by the police officers and is enforced in their interventions.

The Primacy of Patients Help

The intervention of the police in mental health is shaped by the principle of helping others. In this case they are helping a person who suffers from a mental disorder and does not have the ability to recognize they are ill and need treatment. This is the starting point of the police approach to compulsory admission and is essential to a humanized interaction. Understanding mental illness and how it influences a person’s cognitions and behaviors supports a more empathic interaction rather than what is seen as the typical authoritative police approach in which criminal people are detained. This understanding that a person’s behavior is just the expression of their illness and a way to express the need of help shapes their whole operation and individual conduct.

The Operational Activity Adjusted by the Person’s Condition

The existence of mental illness is a conditioner of the police officers’ attitudes toward a person with mental illness subject to police transportation. Police officers seek a low profile approach, avoiding using instruments of authority (such as their police uniform, the police vehicle cage or handcuffs), in order to respect the patient’s privacy.

The Presence of the Police Is What Counts

Police officers recognize that simply their presence, without any active control measure, has a positive impact on the person’s behavior. The police escort results in the patients having a more controlled, submissive and respectful behavior, which maintains everyone’s safety.

The Instrumentalisation of the Police

Despite the core role of police officers in the compulsory admission process and their privileged access to the patient’s social background, police officers emerge and perceive their importance only as a law’s tool, where their function is to fulfill their task: escort the patient to the hospital.

Family Is Core in the Compulsory Admission Process

Family plays an important role for police intervention in the compulsory admission process, as they provide detailed and present information about the patient. This information is very important for police officers when preparing for their interactions with the person who is unwell. Family members can also provide direct access to the physical space of the patient (**Table 3**).

TABLE 3 | Family is core in the compulsory admission process quotes.

Family is core in the compulsory admission process	
Facilitate the access to the patient	*"When the patient lives alone we cannot, (…) if the situation does not require an immediate intervention, we cannot enter in the patient's house against their will because if they do not open the door, we cannot break the door just because we have a warrant. The warrant does not allow us that and that is clear."* (police officer 10)
Source of information	"*We have to talk with a relative to inform us about their behavior, which habits they have, what time they leave home. This is for us to see when it is the best moment to do the transport, if they are aggressive, if they react well or not with our presence. All of this has to be done and analyzed*." (police officer 05) "*In the moment when we get the warrant, we contact always some of their relatives to plan what is the best way to approach the person. If he [the familiar] thinks is best for the patient that the first contact is through him [the familiar], if he is aggressive or not, if he is cooperative or not (…) When it is the first time for us with that person to be transported, the first thing we do is to contact a relative to know about what type of person he is*." (police officer 07)

TABLE 4 | Triad of success quotes.

Triad of success	
Obtain knowledge about the patient	*"We cannot go with our 'eyes closed,' like we say. (…) We have to know more about the person's habits, if he is aggressive or not, or if he has the tendency to become aggressive, through the neighbors or somebody close to them. This is important for our service to occur under the normality and we can transport the patient without big problems"* (police officer 05)
Building a relationship	*"Is very important for us to get the patient's trust, this is very important for our intervention. I believe that it is the most important thing, to have the patient to trust us. If they do not believe us, it will be very difficult for us to do our service without taking some authority measures"* (police officer 05)
To be patient and not to rush	*"I seat myself on his table and I was pretending that I was eating and then I said 'Hi John we have to go, you have an appointment at the hospital,' and he said 'mister officer I am eating my codfish, please let me finish it' … You know, I was there for two hours pretending I was eating, but in the end he came with us with no trouble"* (police officer 05) "*I always want that the person to be transported comes with me through their free will. Sometimes it could take me fifteen, twenty minutes or half an hour, but I will talk with him until he understands that he has to come with me*" (police officer 09).

Facilitate the Access to the Patient

The Portuguese legal framework on compulsory admission does not allow police officers to force the entrance on a patient's home. This means that the involvement of significant others of the patient are crucial to gain access to them, typically a relative. Without access to the patient's home, the police officers have to wait until the patient is on a public highway in order to transport them to the hospital.

Source of Information

The amount of information that is provided to the police officers about the patient is usually scant. Patient's family or friends are a rich source of information about patient's personality, emotional state on that day, and informs their decision about when best to execute the warrant.

The involvement of family in the compulsory admission process is crucial to reach the person in a more effective manner, and to reduce the risk of any injuries or the need for physical force.

Triad of Success

Transporting someone for compulsory admission is a challenging process given the complex symptoms exhibited by these patients and their social situation. Police officers are faced with unknown circumstances, and so adopt strategies to minimize the risks to themselves and to ensure an effective intervention (**Table 4**).

Obtain Knowledge About the Patient

The knowledge that they obtain about the patient is very important for the success of their intervention. This includes gathering information about the patient's behavior, habits, people that they live with and factors that will shape the way that the person will react to their approach. Police officers often obtain information from family members, however some patients live alone or do not have family. In these occasions, police officers have to use all the other resources available to get some insight into the person.

Building a Relationship

Since the first moment that police officers approach the patient, their objective is to build a rapport with the patient. This relationship building process and sense of patient's trust in the police officer is very time consuming. Nevertheless, for police officers this is a crucial factor in their intervention, and without it the trust in their approach can be compromised.

To Be Patient and Do Not Rush

The complex layout of the police activity under compulsory admission tasks requires a lot of sensitivity, patience and good communication skills from police officers. This police intervention is the most time consuming operation for Portuguese police officers who often are rushed in to solve challenging situations. Yet, in these cases, patience and dialogue are their only tool and can help them come across more as peers, which differs to their usual demeanor in the other types of police work they do. Establishing a conversation with a person with a serious mental disorder can be challenging, but also gives the police a sense of control over the situation. This is their strategy to understand the patient and gain their trust, allowing them to co-operate and accept that they need to leave with the police. This makes police officers more confident about dealing with the process.

Views of Mental Illness

Police perceptions and beliefs about mental illness and about people with serious mental disorders facilitate better understanding of the patients' behavior and attitudes (**Table 5**).

TABLE 5 | Views of mental illness quotes.

Views of mental illness	
Cyclic	*"The majority of the cases that we have are known to us, therefore we already took them more than once, and therefore we already know the person"* (police officer 07) *"I had an old man, who even died last year. I took him several times because he was already a regular person [that we transport]. He took the medication for a while and during that time he was ok, but then he used to drink alcohol, relapsed, and did not go to his periodic medical appointments. Then his medical doctor informed the public ministry, requesting a new order of transportation. Therefore he was out there"* (police officer 04)
Beliefs about people with mental illness	*"Mental illness is the illness of the century. The lack of awareness of this situation is dangerous because people are unconscious that they are unwell and that they need a doctor"* (police officer 03) *"A patient who has relapsed can be dangerous for themselves, or they can try to finish their life or to hurt others"* (police officer 04) *"If a person is unwell, he will end up becoming a dangerous to them or those around them"* (police officer 07)

Cyclic

Mental illness is perceived by police officers as cyclic, as they often transport the same patients in different periods (or relapses) of their illness. This cycle, characteristic of compulsory admissions, means police officers become an active agent of patient's treatment, although in a reactionary form during a crisis.

Beliefs About People With Mental Illness

Portuguese police officers see people with mental disorders as unpredictable, dangerous and with lack of insight about their illness and the need of treatment.

Improving the Reality of Compulsory Admission

Police officers take responsibility for the patients' transportation until they reach the nearest psychiatric emergency ward for medical evaluation. Once there, police officers are responsible for the patient's deprivation of freedom and restitution (if required). This means that police officers have to remain with these patients and be present in almost all stages of a patient's compulsory admission. Therefore, police officers are able to provide a valuable insight into what could be improved in this process (**Table 6**).

TABLE 6 | Improving the reality of compulsory admission quotes.

Improving the reality of compulsory admission	
Mismatch between safety and health	"*I have a warrant and I have to go to the line, and sometimes the line is huge to give the patients registration, and I have to wait. They say to me that is a medical emergency facility, and like me they have others. The difference is, in my case, other resources are being used*." (police officer 01) *"The presence of the police there [in the hospital] is exhausting, even for the patient. They look at us and they feel that we are depriving them from their well-being. It ends up being too much time"* (police officer 09) *"We are talking about one police officer, by the way two police officers that remain in the hospital for six, seven hours waiting for a medical evaluation. In other words I believe that this is spending our resources"* (police officers 02) *"[In the hospital under compulsory admission order] we should have some priority because the patient is being transported under judicial order or by other entity. [Our patients' observation] should be a priority because other persons are involved and they have to be free of that duty"* (police officer 09)
Negative aspects resulting from the police intervention	*"The others will think 'another thug.' If you are in a hospital and see uniformed a police officer (…) the others will judge."* (police officer 01) *"Just the fact that we will be there does not mean the person has committed a crime. But in our society, if a common civilian is accompanied by a police officer, is immediately labeled as a criminal"* (police officer 02).
Police officers difficulties	*" Just as I had said before, my main difficulty is to convince the patient to come with us (…) just the fact that person has a mental illness is an obstacle difficult to overcome, because you cannot reach the communication, a healthy and coherent dialogue"* (police officer 03) *"Obviously that I am feeling limited. You have to have powerful argumentation skills to counteract certain kind of people, It is not easy, I am not a sales man (…) some situations that are not easy to deal and I am not prepared to deal with them*". (police officer 09) *"Is the day by day experience. Today I do, tomorrow I will do and we will learn how to do according to the situation fits best for each scenario"* (police officer 05)
Try other solutions	*"I ask myself, 'what if, instead of being the police taking care of the patient's transportation to the hospital, other professionals went to the patient's residence and ask for the collaboration of the police.' Would this not be more comfortable for the patient?"* (police officer 05) *"We should have some specialized physician working with us in these cases. Because for us it is complicated as we do not understand"* (police officer 06) *"In the warrant says 'transportation warrant,' the language is clear, and then says 'transport the citizen X to the psychiatric emergency ward Y.' (…) They should create a room, similarly as we transport a person in the cases of the victims of domestic violence to a separate room in our police departments. What is the problem? Because in that moment they are deprived of their freedom, and they will remain deprived until medical decision"* (police officer 01) *"We do not understand, when we have a hospital with all conditions, from private security, police officer assigned to the hospital, several rooms, and they prevent a police officer from doing other police duties. We are working to support the community and we wait there [at the hospital] for hours, waiting that somebody release us from being there to escort one patient, one person" (*police officer 09*)*

Mismatch Between Safety and Health

The controversy of compulsory admission for police officers is the shift from providing security to medical support. The hospital interaction is perceived by police officers as resource and time consuming. They strongly felt that patients under compulsory admission should have priority over other patients because they are there under a judicial order. The presence of the police in the hospital is perceived by the police officers to have a negative impact on the patient, being an expenditure of police resources, with many experiencing it like being detained.

Negative Aspects Resulting From the Police Intervention

Despite the care that police officers have when dealing with a person with mental illness, using a powerful institution which deals with the criminal world (i.e., the police), could have a negative impact upon the person that is being transported for medical evaluation.

Police Officers Difficulties

The interaction between police officers and people with mental disorders involves a special dynamic. Police officers have to transport the patient to the nearest psychiatric emergency service without any incident, which involves the person following their orders ideally in their own free will. The communication process is not easy, and police officers feel poorly prepared to do this.

These feelings of poor preparation can result from police officers' misunderstanding and/or lack of training on the behavior of people with mental illness. On the other hand, compulsory admission is not the core of police activity and the numbers of such admissions are low. Police officers learn how to deal with these patients from their own experiences.

Try Other Solutions

Police officers give suggestions to improve the compulsory admission process, which does not involve excluding police officers from the equation or discharging their responsibilities as police. They instead focus on patients' care improving their access to the mental health system. Their suggestions especially focused on police officers presence in hospital, which they express indignation with as it is a misuse of their resources and impacts their wider police duties.

DISCUSSION

Key Findings

This study has raised awareness to the perceptions of police officers in dealing with compulsory treatment. Police officers felt confident about using Mental Health Law to approach these patients, which empowered them to help manage patients' behavior. However, they felt unprepared when dealing with the patients' behavior when this became challenging for them. Furthermore, police officers perceived patients as people who are unwell and require treatment. Police officers expressed that having an empathic approach, keeping a low profile, having a respectful interaction (e.g., using dialogue, patience and information about the person) was their main strategy. This demonstrates that police officers take special care when transporting patients against their will. Although they understand how mental illness can influence a person's cognition and behavior, they showed their own perceptions about mental illness and such patients (perceived as unpredictable, dangerous and without the capacity to judge their health status). Finally, our findings highlight their desire for increased support from other mental health professionals, for the process to be more efficient, and use less police resources. This would allow a balance between security and medical assistance, prioritizing the latter.

Strengths and Limitations

To our knowledge this is the first study in Portugal that has focused on police officers and their interactions with people with serious mental disorders under compulsory admission, and therefore these findings add to a very limited literature base and hopefully set grounds for further work. The setting of this study is another strength as it included a wide range of police departments and police officers that perform compulsory admissions in Porto, including police officers with vast experience in this field. The geographical coverage of the study is also a strength, since different geographical areas may represent different social frameworks and provides us with rich and detailed information about the phenomena.

The study had however some limitations. Firstly, the sample of police officers interviewed was relatively small and did not allows us to explore and compare the differences in police officers views toward compulsory treatment, and whether this varied on the number of compulsory treatments they had previously carried out or their personal characteristics. Secondly, the sample targeted Porto's police departments and there is a possibility that in other areas of Portugal, with different characteristics, the experience of police officers may be different. Finally, our study only involved PSP (Policia de Segurança Pública) police officers. Other police officers from different police forces, like GNR (Guarda Nacional Republicana) who receive military training, may experience the compulsory admission process in a different way.

Comparison With the Literature

In our study, police officers in Portugal expressed special care and understanding of patient's medical needs, promoting a collaborative relationship in what is an asymmetrical power relationship by nature, using tools, such as dialogue, patience, building a positive rapport and gathering information about the patient beforehand. This emotional bond with a person with a mental disorder has also been shown in research in other countries, such as with police officers in the United Kingdom (UK), where they express the desire to help and to have empathy and understanding of people with mental disorders (25). A gentle communicative style is required to gain trust, rapport and compliance from the person under compulsory admission (37). The strategy of using dialogue and giving time to patients to explain themselves is perceived by people with a serious mental disorder as a more humane treatment (38, 39). For patients, being treated as humans is crucial to perceive the interaction as positive and for that, factors, such as communication style, being listened to, gentle handling, putting them at ease and not rushing things are key (37, 39). This procedural justice activity framework is crucial for the patient's cooperation and influences perceptions of police legitimacy. When the police intervention is grounded in a procedural justice approach, the quality of police-citizens interaction is enhanced (26) and people voluntarily comply with the police (8). Procedural fairness may assume an important role in maintaining the person's identity in the community, enhancing the person's value, and may facilitate their involvement in the treatment with future repercussions in treatment adherence (8).

Furthermore, our results in this study show that the involvement of the family in this process has emerged as a core feature in this police intervention, given that it is a useful source of information about the patient and a relevant link and resource in the process. Certainly, family and social support is a cornerstone of the Portuguese mental health care, especially in the case of people with serious mental disorders (40). This is in line with the findings from previous research, which had already highlighted the importance of family, as having a central role in recovery. Its involvement is seen as a valuable and qualified resource, responsible for assisting with the care provision (41). Importantly, the way in which a family starts a compulsory admission process has an effect on how individuals consider the first days of admission and is decisive in the patient's whole experience (42). It has been emphasized already that working in partnership and having discussions between the staff and the family members contributes to the development of best practice (43), to deliver safe and effective interventions (41). Despite the importance of family in mental health care, some families in London reported that they are treated as an irrelevant and troublesome part by the British mental health system (44).

In Portugal, seeking further information about the patients and the family involvement in the process is current practice in Portuguese police compulsory admission interventions and seems to be one strategy to a successful intervention. From a patient' perspective, it is also important that police officers have access to some personal information prior to their arrival to the scene, in order to know how to handle the person, how to communicate and to keep the situation under control. Yet, this amount of information should be properly handled by appropriately trained police (45). Without this, patients could be put at a high level of risk (38).

Our findings indicate that police officers in Portugal acknowledged that their presence has a positive impact on the person's behavior, resulting in a more controlled, submissive and respectful attitude. On the other hand, some police officers perceived that their presence could have a negative impact upon the person that is being transported for medical evaluation.

Hospital admission represents a significant event in the lives of people with serious mental disorders (3). It is reported by many as a traumatic process, and signifies a loss of patient's autonomy (42). However, "objective" coercive measures do not seem to be related with reduced satisfaction in people who are deprived of their freedom to receive medical treatment (46), but "perceived" coercion seems to be (47). This suggests that measures engaged to promote patient's self-control, such as providing explanations and involving them in the decision-making (42), may decrease the level of perceived coercion in the process of compulsory admission, and may increase the patient's satisfaction with their care and the treatment overall (46). Improving patients' satisfaction with care during the compulsory admission process is important not only to provide the highest quality and humane service to patients who require care, but also because low satisfaction levels are linked with poor engagement with services and repeated involuntary admissions (48, 49).

Importantly, the literature reveals that to be in police custody can be experienced as shocking, humiliating, intense or forceful, especially if the patient was not violent, and even if the police officers were kind and gentle during the process (37). In fact, a long period of time in custody, especially in suicidal patients, might increase their mental distress (44). Police officers in the UK acknowledge that a person with mental health problems may be traumatized by the police intervention and that, as police officers, they were frequently perceived as a threat by such patients (25). Regardless of this, police officers did not want to cause or prolong distress for these people, but felt they were frequently placed in situations where they were the only service available to help people in crisis (25). This is perceived by police officers (25) and patients (50) as a consequence of the failure of health services, and the fact that they are not mental health specialists (51).

The idea that police officers should not be responsible for mental health patients in crises is shared by police officers in Greece (16), and in the UK (25). Particularly in the UK they emphasize that they are put far beyond the initial crises stage and that police and medical professionals should work together to get a positive outcome, instead of unnecessary arrests (25). Police officers reported dissatisfaction with the process of getting a person into a treatment facility (52), due to concerns about police time and resources consumption (16, 53). Feeling unsupported is not only about lack of medical support or about the services provided, it is also about the background information about the person, and the feedback on the situation (53).

Although Portuguese police officers feel that the health system does not respond appropriately to the police force and to the patients' requirements, they express disappointment especially for the negative consequences this has on police officers wider duties and patients distress.

Implications of the Findings for Practice, Polices, and Research

Our study shows that interventions for police officers are still necessary in order to improve the compulsory admission process, such as: (i) providing adequate formal training and education on mental health that can help change the police misperceptions about people with serious mental illness, preparing the police officers to deal with patients' challenging behavior; (ii) improve communication and cooperation between the police, the medical community and social service providers, considering alternatives to improve their work and most importantly patients' care; and (iii) improve the conditions at the hospital emergency departments, so that patients referred compulsorily, are assessed as soon as possible.

Police officers expressed in this study that the existence of a law can give them legitimacy to deprive a person's freedom, although this is not a detention. This legal difference is well-recognized by police officers and is enforced in their interventions. Consequently, the police approach a person with mental illness by explaining that their function is not to arrest them, but instead to take them to a hospital for medical evaluation with an order determined by law. In this way the legitimacy of the intervention is legally guaranteed and police officers remain neutral in the decision-making process of compulsory admission. This has an important role in the patients' behavior and in the police confidence in managing this. In fact, the impact of the legislation in the patients' behavior and their perceptions of compulsory admission should be further studied. It seems that patients awareness of the legal order and of police officers responsibilities (i.e., once the patients realize that it is a legal order and that the police are just doing their job), they tend to improve cooperation and their experience (39).

Using the police to transport mentally unwell people in crisis represents a major expenditure of police resources, occasionally with some negative impact upon the patients, given their lack of preparation and the lack of support from mental health professionals. Therefore, it is important to sensitize police officers to the importance of their task and actively engage them to collaborate with mental health professionals. In general, police officers share the belief that it is not their responsibility to deal with mentally ill people in crises. It is imperative to change this to guarantee a more effective response in the compulsory admission process and a faster access of patients to the mental health services. A more efficient approach would reduce the time that police officers are away from their other usual duties, since the time that they spend during this task was their biggest complaint. The creation of joint task forces between police and mental health professionals could be highly beneficial, responding faster and reducing stigma/discrimination (51). A multi-agency strategy approach could also enhance the legitimacy of the intervention and contribute to the procedural fairness of the compulsory admission process (26). This suggests the need to further study the effectiveness of different approaches. Possibly that could lead to a change in the Portuguese mental health legal framework, where frontline medical provision is supported by police officers, if required, and social services. Future qualitative research with larger samples of police officers, and from different police forces, could further explore and compare the differences in their views toward compulsory treatment, and whether this is affected by the number of compulsory treatments they had done, by their background and/or personal characteristics.

Finally, our findings show that the police officers in Portugal approach compulsory admission as a help call, with full understanding that there is a person who needs medical attention and has to be treated with empathy, dignity and respect. They seek a humane interaction using all the means at their disposal to do the transport with minimal negative effects on them, and without use of force. Creating a rapport and trust are highlighted as crucial to enhance a relationship with a patient. For this, Portuguese police officers use dialogue as a strategy, but this can be too time consuming and a challenging process which they can experience as a major difficulty. For a better interaction, formal and standardized training and educational programs should be implemented to help increase the confidence levels of police officers during their interactions with people with mental disorders (52). Although they express that they rarely have to use force in these processes, Portuguese police officers perceive people with serious mental disorders as unpredictable, dangerous and without the capacity to evaluate their mental state. Their perceptions about mental illness may also result from their lack of knowledge and experience. The way police officers perceive people with mental illness is of major concern since insufficient mental health education could put people with serious mental disorders at risk (38), and enhance the chances of physical confrontation, as it may result in a situation where both parties misunderstand each other (14). Therefore, it is vital to further assert in the difficulties, concerns and beliefs of police officers across the country and beyond, and complement this research with further studies focusing on patients' perceptions about this police intervention. This input from different sectors is imperative to the development of formal and standardized education and training programs that would help police officers: (i) reducing the use of measures that may increase perceived coercion; (ii) changing their misperceptions about people with serious mental disorders; and (iii) helping them to determine the best strategy to provide the best care.

CONCLUSION

This study illustrates Portuguese police officers experiences and perceptions during the process of compulsory admission, providing more information about this understudied area. It also highlights their efforts for a humane and empathic treatment that they provide when transporting people for compulsory admissions. Some aspects of the police intervention should be further developed for an improved and swifter process when transporting patients, and to promote a more humane and effective approach.

ETHICS STATEMENT

Ethical approval for the study was obtained from the Ethics Committee (203/2017) of the Institute of Biomedical Sciences Abel Salazar (ICBAS) of the University of Porto and a favorable authorization was obtained from the National Formation Department of PSP (3F05-2017), prior to the interviews. Invited participants received information about the purpose of the study and the research method verbally and through information sheets prior to the interview. The contact details of the researcher were given to the interviewees for any further questions prior or after the interview. They were also informed about their right to withdraw their consent and withdraw from the study without any penalties and that confidentiality would be maintained. Written informed consent was obtained from participants prior to the interviews.

AUTHOR CONTRIBUTIONS

RS and MPC conceived the study. RS made all the contacts with the police, performed the interviews and led the analytic process. RS and MPC analyzed the results and wrote the paper.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyt.2019.00187/full#supplementary-material

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Same, Same But Different: How the Interplay of Legal Procedures and Structural Factors Can Influence the Use of Coercion

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INTRODUCTION

Although clinicians and scientists have made persistent effort to reduce the use of coercive measures such as mechanical restraint, seclusion, and forced medication, it is required in some situations and staff members are thus confronted with a clinical and ethical dilemma: Coercive measures can save lives (e.g., when treating a Delirium Tremens) but can be linked with many negative consequences, ranging from a degradation of the therapeutic relationship to symptoms of posttraumatic stress disorder (1, 2). Moreover, the issue of perceived coercion has become a major concern over the past years. Patients' feelings of not being respected and involved in decision-making processes can lead to higher levels of perceived coercion (3). Participation and freedom of choice regarding therapy and medication were described as highly relevant to patients (4).

Studies on the use of coercive measures indicate vast discrepancies between countries and institutions, therefore raising the question of factors influencing decision-making processes including legislative, institutional, and staff-related aspects (5–7). Authors underline the need to actively address ethical issues regarding the use of coercive measures as a tool to reduce their use to the absolute necessary minimum (8, 9).

The ratification of the UN Convention on the Rights of Persons with Disabilities (UN CRPD) has shed a new light on this matter and raised an important debate in the field of mental health (10). The Convention states that the presence of disability does not justify the application of compulsory treatments and that treatment decisions should, under any circumstances, respect the will and preferences of the persons with disabilities. These terms of "will and preferences" have been thoroughly discussed and defined by several authors (11); here, we refer to George Szmukler (12). He stresses that the application of compulsory treatment might only be justified if it aims at respecting a person's will—defined as the expression of "deeply held, reasonably stable and reasonably coherent personal values"—and restoring the ability to express one's will, in cases where this differs from the expressed preferences—defined as expressed "desires and inclinations" (12). The convention thus underlines that the patients' perspective on their situation and treatment should always be actively assessed and integrated in the decision-making process regarding the use of coercive measures.

These ethical questions, along with the statements of the CRPD, urge psychiatric institutions to control their structures and treatment concepts in order to create the conditions needed to fulfill the afore-mentioned requirements (13–15).

In Germany, the highest court of justice, the Federal Constitutional Court, stated on the case of a forensic patient in 2011 that compulsory treatment can only take place with the intention of restoring the patients' capacity to consent and only if several requisites are fulfilled. These encompass

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the impaired capacity of the patient to consent to the treatment after different options have been presented and explained, the necessary character of treatment to avoid acute endangerment of the patient or others, and the use of compulsory treatment as a last resort after all other alternatives have been exhausted.

These legally binding statements and the related discussions show that decision-making processes regarding the use of coercion need to be reviewed and revised accordingly. The interpretation of the preconditions for compulsory treatment, notably its "last resort" character, requires in-depth considerations.

Two short clinical cases from an acute psychiatric ward aim to highlight some of the core aspects of exemplary decision-making processes and underline the structural factors that these should be based on.

CASE EXAMPLES

Two patients were taken to an acute ward at the Department of Psychiatry of the St-Hedwig Hospital (Psychiatrische Universitätsklinik, Charité im St-Hedwig Krankenhaus) by police force in handcuffs on the same day within a 3-h period and were admitted to a general psychiatric ward on the legal basis of the Mental Health Law (Berliner PsychKG). Both patients were previously unknown to the police authority and the hospital staff and did not hold valid documents authorizing them. Their behavior attracted the attention of the police through imminent endangerment of others and "confusion." To simplify the presentation of the different courses of treatment, we will refer to them as patients 1 and 2. All personal patient data have been modified to avoid their identification.

Patient 1

Patient 1 (20–25 years old) presented with agitation. He was threatening, screaming, scratching, and spitting, and refused a conversation. He looked well-groomed (clothing, hair, dental status, cleanliness of skin and nails). The team, consisting of two nurses, a resident and a consultant psychiatrist, had the impression that the aggression of patient 1 was somehow undirected, i.e., not directed against certain persons and irrespective of the context. The perceived subjective and clinical aspects led to the assumption that patient 1 could suffer from an acute and potentially first manifestation of a mental disorder. He expressly refused to undergo medical examination and all offered treatments. The team tried many times to establish contact with the patient by calmly addressing him or offering him to sit down and talk, to drink something, or to retreat in a quiet room and rest. All of these attempts to de-escalate the situation didn't have any effect. The patient was still agitated, threw himself against the ward door, thus bruising himself, or screamed at the staff. The team members thoroughly discussed the next steps to solve the acute situation. The involved staff members agreed that, in this situation, the legal conditions allowing the use of compulsory treatment and mechanical restraint were fulfilled and that, most importantly, every alternative had been exhausted. The team thus decided that, in order to prevent further harm to himself and others, compulsory treatment was the only available possibility. Because of the acute and dangerous character of the situation, the patient was then, according to the Mental Health Law, mechanically restraint, a blood analysis and an ECG were performed, and he received an i.v. medication. Legal procedures regarding the pursuit of the involuntary hospitalization and compulsory treatments including external medical review and a decision by a judge were initiated. The results of the analysis showed that the symptoms of patient 1 were caused by a severe overdose of L-thyroxine and an electrolyte imbalance due to anorexia nervosa. After a few days of intensive care treatment, patient l switched to outpatient treatment on another ward.

Patient 2

Patient 2 (40–45 years old) presented with severe agitation. He was threatening, screaming, scratching, and spitting, and refused a conversation. He thus showed a similar clinical picture as patient 1 but also appeared to experience auditory hallucinations and to actively talk to them. Patient 2 was in a state of poor hygiene. Taking into consideration his manner of response, one could assume that patient 2 has experienced psychiatric treatment in the past. When the nurse asked him if he had any experience with psychiatric medication, he yelled at her and clarified his wish to refuse haloperidol. He seemed to feel especially threatened by the police and the psychiatric staff, not only due to psychotic symptoms but also due to previous aversive experiences with psychiatric treatment. Once again, the staff members involved in the situation discussed the clinical case in a multiprofessional setting and weighed out every possible option. The team suspected that patient 2 suffered from an acute exacerbation of a disorder that persisted for a longer period of time or a psychotic relapse. In this case, the team decided that patient 2—due to his previous aversive experiences—would have extraordinarily suffered from compulsory treatment, which may exacerbate previous traumatic experiences. Also, he calmed down a bit when given a space to withdraw and did not immediately endanger himself or others; however, he remained tense for several days and threw objects whenever members of staff tried to engage him in a conversation or offered oral medication. When left alone, he did not appear aggressive or present improper handling, showed a regular food intake, and welcomed the possibility to smoke. Somewhat later, he was seeking a medical consultation and expressed the need for a low-dosage medication. To this day, 6 years later, he regularly receives outpatient care and short-term crisis intervention treatment on a psychiatric ward, although he has felt threatened and deprived of his identity by the state and the psychiatric system of another city for more than 25 years.

DISCUSSION

These clinical cases elucidate the complexity of decision-making processes regarding the use of coercive measures such as mechanical restraint and forced medication. Both persons presented with impaired capacity to consent and acute endangerment of themselves or others. However, their situations differed with respect to their subjective reactions, previous experiences, and response to de-escalation. These factors played a central role in the evaluation of the possible alternatives and eventually in the whole decision-making process.

Decision-making processes leading to involuntary admission often imply uncertainty and doubt among the clinicians in charge (16). In a qualitative interview involving psychiatrists, Feiring and Ugstad showed that legal criteria regulating the use of compulsory admissions are often being interpreted by clinicians and that decisions are influenced by extra-legal factors, such as patients' needs and attitudes toward treatment, follow-up options, and social circumstances (17). More precisely, the lack of less coercive alternatives has already been shown to be one of the major factors in the decision to commit patients against their will (18, 19). The issue of alternatives to coercive treatment has been addressed in different studies or scientific papers, confirming that patients place great emphasis on attention and consideration of their wishes and needs. In many cases, patients have the impression that the treating teams do not take their wishes into account (13). Many of them wish to get more support and contact during and after restraint, but also before the coercive event takes place in order to prevent it (20).

This suggests that the conditions facilitating the exploration of alternatives to coercion need to be elucidated (21, 22). The thorough search for alternative measures and their practical application require structures and attitudes within the team that facilitate the development of de-escalating competences of all professional groups and the acknowledgement of their subjective experiences. Accordingly, in the situation of patient 2, a coercive intervention could be avoided thanks to the clinical experience of the team, its orientation towards non-coercive treatment, and the possibility to provide the patient sufficient time and space.

Furthermore, the two cases suggest that in situations in which patients harm themselves and others, it is essential to comprehend the motivation behind aggressive or self-harming behavior. Whereas professional members of staff predominantly view the psychopathology as the key factor in the development of aggression, patients mostly believe that environmental factors (rules, communication style) play a crucial part (23). The interplay of psychopathology and external factors becomes apparent in the clinical case of patient 2: Although the potential danger of aggressive actions on the ward can be ascribed to psychotic symptoms, an escalation of physical violence based on former aversive experiences with the psychiatric system could and, in our opinion, would have been caused by restriction or other coercive measures. The link between a history of traumatic events and the experience of coercion has already been underlined in research works (24).

In recent years, complex interventions for acute psychiatric settings have been increasingly recommended to achieve a reduction of coercive interventions, as described in the "Weddinger Model"—a recovery-oriented treatment concept that has been introduced in the Charité University Department of Psychiatry at the St. Hedwig Hospital in 2010 and which aims to promote team competence on multiple levels (25–27). With regard to the outlined clinical cases, it should be elucidated that such interventions need to ensure an active participation of all team members in order to recognize their competences and collectively promote decision-making processes, as team dynamics seem to play a role in decision-making processes leading to coercion (28). Open settings can further reduce coercion (29). The promotion of knowledge about recovery and the appraisal of the therapeutic qualities of all professional groups on the ward are also part of the implemented model. In this regard, previous works argued that the staff attitude to coercion seems to be mainly linked to individual staff-related factors (30) and that an active effort into building trust in the therapeutic relationship can help improve it and prevent acute crisis situations (31).

In conclusion, it should be noted that a reduction of coercion in psychiatric settings appears promising if legal procedures and oversight are combined with multiprofessional, patient-centred, and recovery-oriented clinical work relevant to the complexity of any acute crisis situation.

AUTHOR CONTRIBUTIONS

LM, JM, AH, and AW conceived and wrote the paper.

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Nursing Perspectives: Reflecting History and Informal Coercion in De-escalation Strategies

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Health professionals like nurses respond to aggression and violence with de-escalation techniques, and still often with coercive measures. Such measures applied by institutions are often rooted in historically grown traditions rather than evidence, reflection, or formation. In this article, we present de-escalation strategies integrating a high and critical awareness toward traditions and the practice of formal and informal coercion.

Keywords: informal coercion, de-escalation, nursing, coercion history, nursing practice

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INTRODUCTION

Health professionals may respond to aggression with de-escalation techniques, but a still predominant response to aggression and especially violence in psychiatric settings is a "physical" one. We have to think about which uses of measures in which situations of everyday life are really necessary, or could be replaced by other creative ideas or practices. Within these perspectives, we focus on a nursing approach, being aware that aggressive behavior affects the whole treatment team in mental health settings.

Brief Historical Overview and Formal and Informal Coercion

In constitutional countries, mentally ill people are the only human beings who can be detained without being accused of an offense. Compulsory measures are often based on aggressive behavior aiming to calm down a situation and the involved persons (1). Its use, though based on judicial and ethical principles or guidelines (see, for example, DGPPN 2018), negatively impacts attitude toward treatment and is always perceived as negative by patients (2). Patients reject compulsory measures more distinctly than health professionals and even more clearly if they have already experienced those measures and if they were admitted involuntarily (3). The most strongly rejected form of coercive measures for patients, relatives, and health professionals are net beds (which are not used any more in Switzerland), fixations, and seclusion (3). The use of either fixation or seclusion or both in psychiatric institutions is often determined by regional history and traditions of institutions and management and is currently being questioned in many European countries. Empirical evidence or definable indicators of the benefit or harm of applying coercive measures are rare. Psychiatric institutions with a psychiatric care contract are very often trapped between help and violence, the expectations of authorities and the public, as well as the expectations of the patients and their families or relatives.

It is not only formal coercion but also informal coercion that is looked upon as negative and often hampers a therapeutic relationship (4, 5). Informal coercion is common but underestimated by health professionals (6). Informal coercion or treatment pressure (7) comprises subtle forms of communication mostly with the aim of preventing formal coercive measures or of improving treatment adherence (8). It can range from persuasion or inducement to more distinct forms like threats (9). Szmukler and Appelbaum (10) divided informal coercion into hierarchical degrees of persuasion, interpersonal leverage, inducement, and threats. A study from 1998 (11) also revealed the demonstration of force as a relevant form of coercion. The authors grouped the forms of coercion into nine degrees: persuasion, inducement, threats, show of force, physical force, legal force, request for a dispositional preference, giving orders, and deception (11).

The important fact is the underestimation in particular of stronger forms of informal coercion and formal coercion (6, 7). Yet, health professionals with a positive attitude toward weaker forms of informal coercion, like persuasion or leverage, tend to underestimate its occurrence more than health professionals who disapprove its use. Correspondingly, inpatients perceive the attitudes of professionals and their interaction as the most important factors concerning coercive measures (12). In order to avoid coercive measures through de-escalation strategies, health professionals need to have specialized training and be aware not only of the use of informal coercion but also of the importance of a respectful and empathetic attitude and ward climate, a positive admission process, as well as debriefing strategies after coercive measures (12).

De-escalation

In comparison to other wards, the risk for aggressive behavior is increased in mental health units (13). In mental health departments, conflicts can arise as a result of interpersonal interactions between staff and patients and also between patients. De-escalation has been defined as the use of techniques including verbal and nonverbal communication skills aimed at defusing anger and stopping aggression (14). It is an approach for managing aggressive and violent behavior in a more humane manner and is arguably more dignified and less coercive than physical interventions. In addition, this guideline (14) highlights how medication can be used as a part of de-escalation strategies, but medication does not stand for de-escalation on its own. De-escalation also involves the use of verbal and physical expressions of empathy, creating therapeutic alliance, and nonconfrontational limit setting that is based on respect. The pivotal strategies focusing on de-escalation are communication, approach, de-escalator qualities, assessment and risk, getting help, and containment measures. Different types of aggression are met with different interventions (15).

Models of De-escalation Strategies

There are several concepts that address aggression, but little is known about successful strategies to prevent and deescalate aggressive behavior (16). Gaynes et al. (16) found in their systematic review that if there is a risk of aggressive behavior, multimodal approaches like the “Six Core Strategies” have the potential to reduce the use of restraint and seclusion. The “Six Core Strategies” were developed and supported by the National Association of State Mental Health Program Directors in the USA (17) to prevent aggressive behavior. One of its pivotal strategies concerns the commitment of institutional management such as the Chief Executive Officer (CEO) or chief medical doctors/head nurses. Leadership is described as not only the commitment to a vision, an attitude, and a plan to reduce the use of seclusion and restraint, but also the involvement of management in those practices (17). The second strategy is the use of data to inform practice, which means the monitoring of units’ or shifts’ rate of seclusion and restraint and of patients’ characteristics. The third strategy focuses on development and training of the teams toward a recovery-based treatment environment. The training involves, among other things, the exploring of rules. The authors claim—as mentioned above—that closed wards often have historic rules and procedures that are no longer appropriate to state-of-the-art treatment and not in line with a recovery-oriented, least restrictive practice (17). The fourth strategy concerns the use of prevention and assessments tools, and the fifth strategy concerns the inclusion of the patients themselves in improvement strategies or facility committees. Moreover, the inclusion of family members or peers is recommended. The last strategy focuses on debriefing techniques that aim to reduce the traumatizing effects of coercive measures for both patients and staff. Detailed, recommended questions units can ask themselves, exploring potential triggers, are, for example, “was the individual worried about anything?” or “did the individual have to wait an inordinate time for something he or she wanted?” (18). Steps for debriefing and procedures are explained and templates are available.

In Germany and Switzerland, one concept is the ProDeMa® that provides a practical guideline for healthcare professionals to deal with aggression (19). The guideline aims to convey de-escalation interventions and to develop a professional approach. As in the “Six Core Strategies,” there are different steps of de-escalation. The first step, the prevention of aggression, involves getting in contact with or gaining the attention of a certain person. ProDeMa® emphasizes that without contact, de-escalation may not occur. Getting in contact is linked to asking about the wishes and needs of the person. The second stage intends to change one’s own perspectives of aggressive behavior before reacting, while during the third phase, an understanding of the causes is developed. The art is not to ask “why” but, for example, “what would help.” The next two steps deal with verbal and nonverbal de-escalation techniques to calm down a person and to master a difficult situation. Nonverbal de-escalation, for example, comprises the protection of the own person. The last stage describes least restrictive and patient-friendly holding techniques, immobilization, or, in some hospitals, fixation.

Nursing Experiences

Nursing practice is often characterized by relatively close physical contact for extended time periods, sometimes lasting over hours. Also, due to this, nurses in the psychiatric setting may be familiar with aggression toward them (20). It is known that targeted aggressive behavior can lead to anger, and (unreflected) anger can lead to reactions, which are disciplinary or even coercive (21). A strategy of de-escalation with commonly shared procedures, as the two models described before, can support balanced alternative reactions of nurses and other health professionals in a treatment team. That is why we recommend multimodal de-escalation strategies encompassing several different approaches.

DISCUSSION

The perception of coercion has been shown to never be neutral, but either positive or negative (22). Coercion can only be regarded as necessary when it immediately ensures integrity, autonomy, and safety of patients and staff. However, informal coercion can be seen as coercive in the sense that it still restricts patients' voluntary and autonomous decisions. If the patient has a positive therapeutic relationship to the professional performing the coercion, he more readily perceives the coercion itself as morally right and accepts more pressure than if a stranger performed it (22). It is easier to "take advice" from someone you trust.

Does informal coercion impede the establishment of a therapeutic relationship? Or is persuasion or inducement one of these creative ideas to replace other de-escalation methods? The extent and the impact of applied informal coercion in therapeutic communication are often not recognized by practitioners, although they might interfere with a positive therapeutic relationship (6). Informal coercion is a frequently used form of communication to influence treatment outcomes. As a weaker form of coercion, it can be de-escalating if applied critically in a recovery-based environment. It needs to aim at reducing the use of seclusion and restraint and always requires moral justification and evaluation.

Common to all theories of de-escalation is the prevention of aggression by intervening before it occurs and by calming the patient. The dominant controlling attitude to calming the patient in traditional understanding should be transformed into a collaborative endeavor, where individuals are encouraged to help themselves calm down by applying their own abilities and power (23). This requires a culture of empowerment of individuals. Such a culture should also involve the critical reflection of historically evolved rules, such as groups, which are not allowed to leave, or visiting hours, which could be individually arranged. In this context, practicing de-escalation for calming the psychiatric patient may also serve as an experimental learning opportunity for patient and staff. We propose a structured and commonly shared approach encompassing critical evaluations of historic courses of action, reflections, and discussions on personal experiences and attitude, and the use of informal coercion in order to facilitate the prevention and management of aggression and violence.

CONCLUSIONS

The spontaneous response to an aggressive behavior depends on how it was perceived, experienced, and interpreted, and depends on the attitudes and values of the perceiving person itself.

The aim of mental health practice should be to develop a high and critical awareness toward the use of coercive measures including informal coercion.

The decision to use, as well as the consideration of the least coercive measure, is an ongoing intersubjective process.

AUTHOR CONTRIBUTIONS

FR, CC, and RS contributed equally to the perspectives.

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REVIEW
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Criteria, Procedures, and Future Prospects of Involuntary Treatment in Psychiatry Around the World: A Narrative Review

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INTRODUCTION

The use of involuntary treatment in psychiatry comes with some benefits and many disadvantages for the patient's experience and the therapeutic outcome. This review proposes to compare the procedures and criteria for involuntary psychiatric treatment around the world. We highlight the gap between legislation and practice, the patient's experience of coercion, the repercussions on the therapeutic relationship and adherence to treatment following coercion, the role it plays in the prevention of suicide and of hetero-aggressive behavior, ethical problems, and possible alternatives to reduce the use of coercive measures.

History and Legislation

Mental health legislation has changed significantly, starting in Europe and North America, and eventually beginning to globalize from the 1960s onward, with macroscopic exceptions. The focus shifted from explicitly expelling the mentally ill for the protection of society to curing mental illness itself. In the 19th and part of the 20th centuries, mental health laws were forged from the models for criminal procedures. Mental illness was treated as a transgression and hospitalizations resembled prison stays, under worse conditions, considering that the duration of detention for the mentally ill was undetermined (1). The world's most famous asylum, London's Bethlem Royal Hospital, also known as Bedlam, was established in 1307 as a general hospital and converted into an asylum for the mentally ill in 1403. Centuries later, the USA began to build asylums that also followed the idea of indefinite confinement and used methods that included seclusion, sedation, and experimental treatments with opium, without any actual benefit (1). They were custodial institutions rather than places for treatment and recovery (2). The de-institutionalization of the mentally ill in the USA began in 1960, and in 1963, President Kennedy signed an Act[1] to facilitate the transition from asylums to community mental health centers. This contributed to a decrease in the number of hospitalized patients from 550,000 in 1950 to 30,000 in 1990 (1).

Italy also followed a custodial model of treatment, in which the mentally ill were considered exclusively with regard to the risk they posed to themselves and others, allowing for their commitment to institutions by a judicial authority (3). This codified an equivalence between

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[1] The Community Mental Health Centers Act of 1963.

criminality and mental illness. This system remained in place until the implementation of the Basaglia Law on 13 May 1978, which regulated voluntary and mandatory health checks and treatments for the mentally ill and ordered the closure of asylums (4). There was a fundamental transformation of the custodial style following the implementation of this law, which set time limits on hospitalizations or at least foresaw a future discharge.

Long-term hospitalizations seemed to cause symptoms associated with chronic mental illnesses, constituting an "institutionalization syndrome" (5). Since the 1960s, this syndrome has been noted as a psychopathological condition due to the pathogenetic effect of situations as long-term residence in closed institutions such as psychiatric hospitals and prisons, where they assumed a purely institutional role. The symptomatology includes withdrawal into oneself, apathy, regression to infantile behavior, stereotypes, and ideological slowdown. Goffman speaks about the "mortification of self" and argued that patients whose freedom was restricted suffered from the stigma of being a psychiatric patient (6).

Two separate factors inherent to modern psychiatric care concur with the change in focus from custodial to curative goals. Psychoanalysis, with the discovery of the unconscious, led to increased comprehension and integration of psychopathological phenomena, underlining the continuum between normalcy and pathology, as indicated by Freud, and reducing the strong connotation of the split element that mental illness had previously represented. The other factor is represented by psychopharmacology, specifically the improved ability to control some symptomatological manifestations and the consequent behavioral correlations.

Parallel to the transformation of psychiatry, social changes determined a radical overturning of the role of the judicial authority. Originally represented as a depository of power over the custody of mentally ill patients, the judicial authority later became a guarantor of their rights, hearing their appeals against involuntary treatment. In fact, the Council of Europe's "White Paper on the Protection of Human Rights and Dignity of People Suffering from Mental Disorders, Especially Those Placed as Involuntary Patients in a Psychiatric Establishment" provided *inter alia* that the patient should be examined by a doctor or experienced psychiatrist, and that the admission decision should be confirmed by an independent authority. It also provided that treatment must be based on an individualized plan, discussed with the patient, and periodically reviewed by adequately qualified staff (7).

Current national laws on mental health are inspired by two concepts: the principle of *parens patriae*, which gives government the responsibility to intervene for citizens who are unable to protect their interests, and police power, which protects the safety of its citizens. Government enacts statutes for the welfare of its society, and involuntary hospitalization is placed in the broad and detailed context of how much the State can and should intervene, even to the cost of restricting the freedom of some individuals (1).

The debate regarding nonconsensual treatment centers on the issues of freedom and self-determination. In 1979, Gostin affirmed that one cannot presume that the status of a person who has been hospitalized against their will coincides with a complete loss of self-determination (8). The clinical reality suggests that residual autonomy and decisional freedom exist, even for involuntarily hospitalized patients. Along that line, Grisso and Appelbaum proposed a multidimensional approach that foresaw an assessment of the patient's ability to consent (in other words, on their residual decision-making ability in line with the new Code of Medical Deontology as well as the Basaglia Law). The United Nations Convention on the Rights of Persons with Disabilities also highlights the importance of assessing the patient's ability to take a reasoned decision (9).

Health care professionals and the law share a common goal: to consider the patient, as much as possible, as a partner in the decision-making process, apart from their areas of deficiency (10). Various international documents on human rights represent points of reference for State legislations. Some examples are the Principles for the Protection of Persons with Mental Illness (or MI Principles, 1991) (11), the European Convention for the Protection of Human Rights and Fundamental Freedoms (1950) (12), the Declaration of Hawaii (1983) (13), and the Ten Basic Principles for Mental Health Law published by the World Health Organization (WHO) (14, 15).

Current western legislation strongly emphasizes the protection of rights for patients with mental illness, and compulsory treatment is considered as an absolutely exceptional measure (16). Coercive treatment is an exception with respect to all other medical treatments, which, though they may be necessary, cannot disregard the requirement for informed consent and can always be refused. Danish law[2] highlights the exceptionalism of nonconsensual treatment, allowing it only after attempts to obtain consent, coherent with the view of "minimal intrusive remedy" (17). The Lanterman–Petris–Short Act, introduced in the USA in 1967 and implemented in 1969, represented the prototype for mental health laws in many other western countries (18). This act aimed to abolish permanent admissions, improve public health, and guarantee the rights of patients with mental illness. After its implementation, the number of involuntary treatments in California remained the same, but the number of voluntary treatments, which perhaps were the result of a more frequent use of informal coercion, doubled. The law also reduced the duration of mandatory hospitalizations (2). Similarly, even though Poland had fewer involuntary treatments in the years 1996–2005, there was an increase in the absolute number of treatments due to the general increase of requests for psychiatric admissions (19). This was due, in part, to higher levels of confidence in psychiatric care.

In 1977, the World Psychiatric Association developed a code of ethics for clinical practice, named the "Declaration of Hawaii" (13). The WHO recommends that mental health treatments should be as efficient as possible; hospitalization durations should be limited to the risk posed and used only if it is the only way for the patient to receive treatment (14). The European Convention on Human Rights (ECHR) provides that forced hospitalization should remain in the guaranteed context of Article 3 "which prohibits any inhuman or degrading treatment" (20).

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[2] Danish law nr. 331 of 24 May 1989 and following revisions.

The jurisprudence of the European Court on Human Rights (ECtHR), which is binding on the 47 Member States party to the Convention, clarified the conditions under which involuntary admissions can occur in accordance with the abovementioned Article 3, as well as Article 5, paragraphs 4 and 8 ECHR (21). These conditions require the establishment of a mental illness based on a medical evaluation, exceptionality and urgency, nature and gravity of the psychic disorder such as to justify the deprivation of liberty, measure proportional to the need for the safety of the patient and the community, and temporary limitation of the measure to the period of persistence of the illness (22).

While there are many studies regarding involuntary treatment in Europe, North America, and Oceania, there is some difficulty in finding valid recent studies for Asia, Africa, and Latin America. This imbalance can be attributed to lack of investment in the health systems where limited resources are dedicated to treatments rather than research, the disruptions of political instability and war, and public health emergencies and epidemics that direct resources away from psychiatric care.

METHODS

The articles have been chosen, both as regards historical citations and current procedures, by searching on accredited sites (such as PsychoINFO, PubMed, Google Scholar, Research Net, MedLine, and HUDOC), governmental internet sites, and databases of organizations (such as WHO MinDBank). The most recent search was conducted on 16 March 2019. Out of a total of 302 publications consulted, we selected 85 articles for our bibliography, researching, in addition to scientific articles, the legislative sources specific to each mentioned country. We eliminated articles that included topics such as specific treatments or mental illnesses. The keywords we used include involuntary treatment, involuntary admission, mental health law, and emergency admission. For the historical part, we have used legislation and articles from the second half of 1900 to the most recent available; regarding the results, the articles were selected from publications from 2000 to 2019. An up-to-date source was not available for all countries, particularly African, Middle Eastern, East Asian, and South American countries. We used mainly English language articles with high bibliographic sources that were published in international literature. Whenever possible, we included the most recent bibliographies.

RESULTS

It is important to study the various criteria required for involuntary treatment, and their weight, as well as the diverse procedures provided around the world. When mandatory medical treatment and hospitalization are necessary, such legislation interrupts the therapeutic relationship, changing the quality of the communication according to whether it comes from the patient's doctor, an alternate doctor, or a judicial authority. The intervention of the latter, on the one hand, can be experienced as a persecutory intrusion in the care relationship but, on the other hand, can be seen as a guarantor of the patient's rights (to freedom and to be heard) for its role in reviews and appeals against involuntary treatment decisions. It is useful to distinguish between situations in which the person subject to compulsory treatment is already in treatment, and when instead, it is the patient's first contact with psychiatrists, as is frequently the case for marginalized persons. More or less restrictive criteria also influence the quantity of involuntary treatments. The direct involvement of the patient's treating psychiatrist in the treatment (or the caregiver who may request it) has an important relational meaning. The specific weight of the danger, or need for treatment, and the assessment of the patient's lack of decision-making capacity (carried out more frequently with regard to pharmacological treatment) affect the patient's perception of the experience.

The various weights given to the patient's decision-making capacity in the various national legislations are reflected in the legality of pharmacological treatments in involuntarily hospitalized patients. In some countries (such as Italy), involuntary pharmacological treatments are automatically permitted for hospitalized patients, while others require a more articulated procedure to decide on treatment options. Germany forbids an automatic association between involuntary hospitalization and involuntary pharmacological treatments, as they can be considered unconstitutional. This contrast between styles might create a kind of paradox in which patients could be admitted without consent but left without treatment.

The requirement of the presence of mental illness, with a view to balancing the principle of autonomy with that of beneficence, cannot, by itself, constitute a sufficient element for involuntary psychiatric treatment. In fact, all related regulations also mention the need for treatment, the dangerousness of the patient, or both factors. There is greater difficulty in deciding on the admission of people with mental illnesses but who are not considered dangerous because there is variability in the interpretation of the gravity of the disorder (whether it requires hospitalization) and the degree of deterioration of the patient's decision-making capacity (18). This seems to actually lead to fewer admissions of nondangerous people for whom hospitalization is sometimes the first, albeit traumatic, moment of access to treatment. The Amsterdam Studies of Acute Psychiatry proposed a comparison of two groups of 125 patients with voluntary and mandatory treatment. Variables that distinguish between groups include social support and access to healthcare. In fact, specific cultural and socioeconomic groups more rarely covered by the mental health care system, such as migrants, more often have their first contact with mental health workers through emergency services (23).

The variety of related jurisprudence among countries relies on the type and severity of the mental disorder, which should be such that it leads to a reduction in decision-making capacity in order to justify the absence of consent.

Europe

The UK Mental Health Act of 1983 (24) and the Welsh Mental Health Act Code of Practice (25) define "mental disorder" as "any mental disorder or mental disability" (see **Table 1**). This criterion can include mental retardation, substance abuse disorders, and personality disorders. The dangerousness criterion is sufficient

TABLE 1 | Legislations, criteria, and procedures in Europe.

Country	Legislation	Diagnosis	Other criteria	Proposal	Validation	Duration	Ability to appeal
England and Wales	Mental Health Act 1983, amended in 2007; The Welsh Mental health code of practice	Any disorder and disability of mind	The mental disorder requires detention for assessment; detention in the interest of health and safety of patient and others; available appropriate medical treatment	Relatives or professionals; police (emergency)	Two registered medical practitioners with written recommendations (non-emergency); a mental health professional and a doctor (emergency)	Admission for assessment: 28 days; for treatment: 6 months renewable once for another 6 months	Yes; mental health review tribunal
Northern Ireland	Mental Health Order 1986, amended in 2018	Mental disorder as “mental illness, mental handicap or any other disorder or disability of mind”	The mental disorder requires detention for assessment; failure to detain would create serious physical harm to patient and others	The nearest parent or an approved social worker; application for assessment shall be accompanied by medical recommendation	Responsible medical officer for assessment	Assessment: 2 days; detention for medical treatment: 6 months renewable of 6 months; then further periods of 1 year	Yes; mental health review tribunal
Scotland	Mental health Act 2015 amended the MHA (care and treatment) 2003	Mental disorder	Medical treatment available; significant risk for the health and safety of patient and others; impaired ability to make decisions; requires treatment	Two medical practitioners; mental health officer	Tribunal hearing persons who have opportunity to make representations, of leading and producing evidence	6 months renewable for 6 months twice; subsequent further reviews: 12 months	Yes; patient’s responsible medical officer
Italy	Law 180 incorporated in Law 833 of 1978	Mental condition requiring urgent treatment	The person does not accept the treatments; it is not possible to take appropriate extra hospital measures	Two physicians	The mayor and authorized by the tutelary judge who is entrusted with the jurisdictional safeguard of such treatment	7 days; renewable several times at the request of the psychiatrist to the mayor	Yes; competent court
Spain	Ley de Enjuiciamiento Civil of 8 January 2000, Book IV, Title I. Chapter 2 art. 763	Psychological disturbance, which causes inability to take decision and care for oneself	–	Psychiatrist	Judge	–	Yes
Portugal	Law 36/98 and decree 35/99, which regulates the law	Person with severe psychic anomaly	Danger to themselves or others, and refuses to submit to necessary medical treatment	Legal representative; public health authorities; the Public Prosecution Service; doctors; the clinical director of an institution (if in the course of a voluntary admission)	Judge	Least restrictive possible	Yes

(Continued)

TABLE 1 | Continued

Country	Legislation	Diagnosis	Other criteria	Proposal	Validation	Duration	Ability to appeal
Greece	(Law 2071/1992 (hospitalization. 123/A/1992): Modernization and health system organization. Articles 94–100: involuntary hospitalization and treatment The enforcement of Law 2071/92 for Involuntary Hospitalization of Psychiatric Patients. 504: Interpretative Circular of the Supreme Court of Appeal (1996)	Diagnosis of a severe mental disorder, takes into account the patient's need for treatment and their dangerousness	Inability to judge one's own health interest; if the nonadmission could lead to ineffective treatment or aggravation of the disease Dangerousness criteria are sufficient	Two individual assessments by psychiatrists; the closest relative brings the report to judges authorized to police escort Public Prosecutor	Two qualified psychiatrists in 24 h then Public Prosecutor orders the patient's admission	–	Yes
Belgium	Loi modifiant la loi du 26 june 1990 relayive à la protection de la personne des malades mentaux 2017	Mental disorder	Danger for the health and safety of the person and others	Any interested person	Justice of the Peace	Observation period of maximum 40 days; the duration of maintenance cannot exceed 2 years (renewable)	Yes; Justice of the peace
The Netherlands	Rules may provide for compulsory care to a person with a mental disorder (Obligatory mental health) 2009; Compulsory admission Act 1992	Severe mental disorders that constitute a danger to themselves or others, including severe negligence or severe social inadequacy	Imminent danger for oneself and others	Doctor; judge	Judge	3 weeks (emergency procedure) 6 months (regular procedure)	Yes
France	Law n ° 2013–869 (27–9–2013)	Admission at a request of a third party: mental disorder	The mental disorder makes consent impossible and requires immediate care and medical supervision	Family member, guardian, or curator of the patient	The director of the establishment on the basis of two medical certificates	After the first period of observation (72 h) a month, renewable	Yes; college of experts, departmental commission
		Admission on the decision of the representative of the state: mental disorder	People whose mental disorder require care and jeopardize the safety of people or public order	Warden Home representative	Representative of the State		
Germany	Different regulations and procedures for involuntary placements or treatments among Germany's 16 federal states	Some federal states specify "psychosis"	Mental disorder and severe conditions "equivalent to psychosis" + danger (dangerous or self–destructive behavior)	"Physician" in some Federal States; "psychiatrist" or "physician experienced in psychiatry" in others	A specialist must be involved in assessment of psychiatric condition Maximum period of time between psychiatric assessment and compulsory admission different for each Federal State: ranging from 24 h to 14 days	Preliminary detention: 6 weeks regular placement 1 year, in obvious cases 2 years Reapproval of decision is 6 months (defined by Federal State of Saarland only)	Patients have the right to appeal to courts at any stage of the procedure Patients' advocates are approved during all stages

(Continued)

TABLE 1 | Continued

Country	Legislation	Diagnosis	Other criteria	Proposal	Validation	Duration	Ability to appeal
Switzerland	Swiss civil code (Part three; third section; third paragraph: Forced hospitalization. Reviewed 2013)	Mental disorders or mental disability	The required treatment cannot be provided otherwise; to protect family members and third parties	–	Adult protection authority and doctors designated by the cantons	The period may not exceed 6 weeks	Yes; adult protection authority
Sweden	Compulsory Psychiatric Treatment Act 1991 Revised in 2000	Severe mental disorder	Need for care, unwilling/unable to decide, risk of harm to self/others due to m. disorder	Doctor in public service or Chief physician	Chief physician in 24 h	4 weeks	Yes; appeals of doctor's decision of involuntary care are made to Administrative Court
Finland	Mental health act 1990	Mental disease	Need for treatment or serious danger to one's health	Doctor employed in public health service or licensed physician or chief municipal medical officer	Within 3 days by a psychiatrist or trainee examines or three independent doctors	4 days of observation	By patient, next of kin, supervisor of commission
Norway	Amendment to the Mental Health Act; LOV–2012–06–22–48 Mental Health Care Act 1999 2007	Serious mental disorder	The prospects of their health being restored or significantly improved considerably reduced; it is highly probable that the condition of the person concerned will significantly deteriorate in the very near future; constituting an obvious and serious risk to their own life and health or those of others	Responsible mental health professional	Two physicians, one of whom shall be independent of the responsible institution	10 days	Yes; by the patient and their next of kin
Denmark	LBK nr 1729 af 02/12/2010 (Act on the use of coercion in psychiatry)	Someone who is supposed to be insane	The prospect of healing or a significant and decisive improvement in the condition will otherwise be significantly impaired or the patient presents an imminent and significant danger to themselves or others	Physician; the statement must not be issued by a doctor who is employed at the psychiatric hospital or the psychiatric ward where the hospitalization takes place	Chief physician in 48 h	–	Yes
Romania	Mental Health Law and protection of persons with mental disorders. Law 487/2002	Person with severe mental disorders: a person with mental disorders who is unable to understand the meaning and consequences of their behavior, so that they need immediate psychiatric help	The patient's behavior presents an imminent danger of harm to themselves or to others; the patient does not have the psychic ability to understand the condition of the illness and the necessity of setting up medical treatment and has no legal representative or is not accompanied by a conventional representative	The family doctor or the psychiatrist specialist who takes care of this person; the family of the patient; representatives of the local public administration with attributions in the social–medical and public order domain; the gendarmerie or firemen, as well as the prosecutor; the civil court	Psychiatrist informs legal representative special committee: two psychiatrists and one specialist or a representative of civil society	Within 24 h of the psychiatric evaluation, the proposal for involuntary admission shall be examined by a special committee established within 48 h	Yes

(Continued)

TABLE 1 | Continued

Country	Legislation	Diagnosis	Other criteria	Proposal	Validation	Duration	Ability to appeal
Russia	Law on Mental Healthcare and Guarantees of the Citizens' Rights in the Course of Care Provision 1993	Mental illness	Patients have to exhibit dangerous behavior toward themselves or others, they must be helpless and unable to provide for their basic daily needs, and there is a danger of "essential harm" to their mental health if they do not receive mental care	One psychiatrist	A commission of psychiatrists	48 h for assessment; documentation is sent to the local court, which has 5 days to review it; need for admission reevaluated every month for 6 months; then every 6 months; then every year	Yes; within 10 days from admission

for an involuntary admission in the UK (15), where there are two types of criteria based on the length of the hospitalization. Detention for assessment can last up to 28 days and requires that the patient suffer from a mental disorder, which, at the pertinent time, requires assessment for their health or safety or for the protection of others. In the second case, regarding hospitalizations for treatment up to 6 months, renewable, there are the same criteria mentioned above, with the addition of the availability of treatment. In England and Wales, procedurally, there is no immediate obligation to revise the admitting doctor's decision. Patients may request a review to the Mental Health Review Tribunals of the decision posthospitalization. Reviews take place automatically after 6 months and then after every 3 years of continuous admission (5).

Scotland has similar criteria but also considers the patient's significantly impaired ability to make decisions regarding medical treatment (26). The procedures are quite different as, in Scotland, doctors can propose detention that the tribunal implements, while in England and Wales, relatives and police can also apply for third-party detention that doctors implement. The introduction of Supervised Community Treatment and Community Treatment Orders and the right to be supported by an independent Mental Health Advocate is an important recent change.

Northern Ireland (27) bases its involuntary admission on the presence of a mental disorder plus serious risk to oneself or others and the necessity of treatment (28). The first evaluator must be a psychiatrist, and proposals and validations of involuntary admission are made by doctors and appeals are made to the Mental Health Review Tribunal. In 2018, the criteria for discharge by the Mental Health Review Tribunal changed to be less restrictive.

Italy, Spain, and Sweden are the only countries in which the danger to oneself or others is not considered a criterion for involuntary treatment. However, they do require, in addition to the presence of a mental disorder, "necessity" for treatment.

An Italian law regarding "Voluntary and Obligatory Health Checks and Treatments for Mental Illness" provides that involuntary treatment can be implemented as a hospital stay: only if there are psychic alterations such as to require urgent therapeutic interventions that are not accepted by the patient, and there are no conditions and circumstances that allow alternative measures to be taken (29). This limitation of freedom takes place with a view to safeguarding another constitutional relief—that of the right to health. It is interesting to note that judgments of the Italian Court of Cassation and the Italian Constitutional Court hold different positions regarding the duty of the psychiatrist to ensure public safety (9). More specifically, there is a divide between the idea of the psychiatrist being responsible for public safety with regard to their patients and that of the responsibility being within the ambit of the police authority. Any doctor can propose a compulsory medical treatment if the conditions are met. The validation of this procedure must be done by a psychiatrist of the public service and provides for a forced 7-day, renewable, hospitalization. This document is sent to the mayor's office, which makes a validation ordinance within 48 h.

There is no separate law exclusively for the treatment of mental disorders in Spain, but there is an insertion in a civil law that regulates the rights and dignity of the person with regard to medical and biological interventions (30). This law does not propose guidelines, nor does it indicate precise requirements necessary for involuntary treatment. Chapter II, Article 763 regards involuntary admission for mental disorders and does not speak of the involuntariness of the treatment, but of the inability to take decisions and care for oneself. As a consequence of this, involuntary admission implies that the psychiatrist responsible for the patient has the authority to order any treatment that falls under their professional responsibility (31, 32). Spain requires the first evaluator to be a psychiatrist (15). There are no defined laws regarding the maximum duration for mandatory (initial) treatments (15).

The criteria in Portugal[3] are that the patient suffers from a serious mental disorder, which causes them to be a danger to themselves or others, refuses treatment, or is incapable of giving consent, and the lack of treatment could result in significant deterioration of their condition. The final decision of compulsory hospitalization is taken by a judge at the request of psychiatrists. The institution at which involuntary admission is carried out must communicate the admission to the court and a judge must request a psychiatric evaluation of the patient and decide within 48 h on the validity of the admission. The patient must be informed of their rights, especially with regard to appealing a decision (33).

In Greece, the regulations issued in 1992 authorized involuntary admission when there was an inability to judge one's own health interests or if the nonadmission could lead to ineffective treatment or aggravation of the disease (34, 35). The dangerousness criterion is sufficient for an involuntary admission (15). The law provides for standard and emergency procedures. The first requires two individual assessments by psychiatrists to be completed prior to admission. Once the psychiatrists have completed their reports, the closest relative brings them to a judge authorized to issue a warrant for police to escort the patient to a hospital for admission. The emergency procedure overrides the requirement of the initial psychiatric assessments and allows a family member to apply directly to the judge. It is important to note that the emergency procedure is almost invariably the one used. In the absence of the "closest relative," the procedure for requesting a mental health assessment is done *ex ufficio*: Upon notification by the police or concerned subject, the judge makes the request and communicates this order in writing to the police who bring the individual in for assessment. Once the individual arrives to the hospital, they are assessed by two qualified psychiatrists (35, 36).

In Belgium, the law states that protective measures may not be taken in the absence of any other appropriate treatment unless: the person concerned has a mental disorder (not including substance abuse), their condition requires urgent treatment, or they seriously endanger themselves or others. Any interested person may address a request to a Justice of the Peace who, after a hearing with the patient and all relevant persons, reviews the medical and social information, and makes a decision. During the hospitalization, the chief medical officer may prescribe an aftercare regimen for a maximum duration of 1 year (37).

In the Netherlands, the law contains two different sections for compulsory admission. The first procedure regards a brief hospitalization due to imminent danger for oneself and others and is prepared by the mayor together with a certificate written by the doctor. The other procedure is performed by a judge and relates to long-term hospitalizations for patients with severe mental disorders that constitute a danger to themselves or others, including severe negligence or social inadequacy. After discharge, treatment in the community is generally available (38).

In France, the law provides for two modalities of involuntary hospitalization: admission at the request of a third party in case of imminent peril, and admission by decision of a representative of the state. The criteria for the first are that the gravity of the mental disorder or episode makes consent impossible and the patient's mental state requires immediate care and medical observation. The director of the medical facility takes the admission decision on the basis of two medical certificates. At the end of the initial period of admission, hospitalization can extended for 1 month, renewable. Admission by decision of the representative of the state concerns people whose mental disorders require care and compromise the security interests of the people or undermine the public order in a serious way. The representative of the state takes the admission decision in view of the psychiatric certificates (39).

In Germany, coercive interventions in psychiatry are regulated through the federal laws of guardianship, *Betreuungsrecht*, valid everywhere in the country, and in public laws with slightly different regulations in the 16 German federal states, *Bundesländer (*40*)*. An overall tendency to emphasize civil rights is the most common characteristic of the legal mental health frameworks in Germany. The German Constitutional Court found that the law regarding involuntary pharmacological treatments was unconstitutional as written but that it could be applied in restricted circumstances to people who were unable to give consent, following a court decision based on the opinion of an independent expert (38). Compulsory admission can be required by a court order or, in some federal states, by a decision of the police, and more informally (but not infrequently) by psychological pressure from doctors and relatives. Hospitalization is defined by three types of court decisions: hospitalization in the field of forensic psychiatry, civil shelter under the guardianship law for danger to oneself or others, and civil hospitalization under public law due to acute danger for oneself or others (38). After the reunification of Germany, an improved nationwide guardianship law was passed in 1992, which shaped a new generation of state commitment laws in effect today. By adopting the basic philosophy of the national guardianship law, the Federal States adjusted their legal frameworks by placing a much stronger emphasis on the constitutional and basic human rights or safeguards of mentally ill patients as well as on the principles of community-based mental health care. The decision of the National Constitutional Court of Germany confirmed an overall "right to be ill" and exempted society at large from being responsible for improving the condition of citizens by infringing upon their personal freedom. Some State Acts permit coercive treatments in life-threatening emergencies; others restrict this only to cases in which the life of another person might be in acute

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[3] Law 36/98.

danger. There are controversial positions even within Federal States and Higher Regional Court (31).

The Third Section (on the Protection of Adults) of the 2013 Swiss Civil Code states that a person suffering from a mental disorder, mental disability, or serious neglect may be committed to an appropriate institution if the required treatment or care cannot be provided otherwise, and the burden the patient places on family members and third parties and their protection must be taken into account. The Adult Protection Authority is responsible for ordering hospitalization and discharge, but the law invested the administrative authority of the Swiss Federal States (cantons) with the power to delegate the responsibility for hospitalization orders to the doctors. In 2013, a revised federal legislation came into force that was in line with international provisions. The aim was to reduce involuntary admissions and increase attention on human rights, e.g., by introducing advance directives or requiring the involvement of a legal representative. The majority of the cantons continue to delegate hospitalization powers to the doctors and the cantons assess the legitimacy of the hospitalization after 6 weeks. This study confirms that only 2% of admissions were prepared by the cantons and that the revised law did not affect the length of hospitalization (41).

The 1991 Swedish law on Psychiatric Compulsory Care established mandatory criteria for involuntary treatment: the establishment of a severe mental disorder, an absolute (essential) need for care, the patient refuses or cannot make a full judgment on the need for care, and there is a risk of harming themselves or others due to the severe mental disorder (42, 43). A decision on admission for compulsory care may not be taken without a medical certificate by a doctor in public service responsible for conducting examinations for health certificates. The question of admission must be settled within 24 h of arrival at the hospital. The admission decision is made by the chief physician of the psychiatric care unit and must not be made by the doctor who issued the health certificate. If the patient needs compulsory care beyond 4 weeks from the date of the admission decision, an application for consent must be made to the administrative court.

The Finnish Mental Health Act considers the general "right to receive care" rather than on individual civil liberties. The criteria are the presence of a mental illness, the need for treatment due to serious danger to one's health, dangerousness, and outpatient services not being available or being inadequate (31, 44). The dangerousness criterion is sufficient for an involuntary admission (15). The patient's opinion about their need for treatment is obtained before a decision is made, and is documented in their records. The final decision of compulsory admission requires that three independent doctors consider it justified (31).

In Norway, mental health care is provided on the basis of consent pursuant to the provisions in the Act relating to Patients' Rights (45). On the basis of information from the medical examination, the responsible mental health professional will assess whether the following conditions for compulsory care are satisfied: voluntary mental health care has been tried, the patient has been examined by two physicians (one of whom shall be independent of the responsible institution), the patient is suffering from a serious mental disorder and application of compulsory care is necessary, it is probable that their condition will significantly deteriorate in the very near future, or they constitute an obvious and serious risk to themselves or others on account of their mental disorder. The responsible mental health professional will make a decision on the basis of an examination. The patient may appeal a decision to apply compulsory mental health care for up to 3 months after the care has terminated. Compulsory observation may not be carried out for more than 10 days from the start of the observation; then, the patient's consent is needed. Compulsory care may also be provided on an outpatient basis when this is a better alternative for the patient.

In Denmark, the law recommends avoiding the use of coercion as far as possible (46). Admissions to psychiatric wards and pharmacological treatments should take place with the patient's consent, and lesser interventions should be used when possible. Forced hospitalization may only take place if the patient is insane, and there is the possibility that the nonintervention would significantly compromise the healing process, or if the patient presents a significant danger to themselves or others. Anyone can call the police, who then alert a doctor to visit the patient. Involuntary admission of a person admitted to a psychiatric ward must be done only if the chief physician considers the conditions met. The chief's decision must be taken no later than 48 h from the time of admission.

Historical sociopolitical conditions strongly influenced psychiatry and the management of the conditions of involuntarily admitted patients in Eastern Europe. In the 1990s, Eastern European countries used involuntary admissions as a political tool and a means of detention by the secret services. For example, in Romania, in the time of Ceausescu, one of the methods of oppression of political dissidents was mandatory hospitalization with politically motivated false diagnoses, made by abuses of power, which caused physical and psychic damage. Romania's legislative decree 313/1980 established that a single psychiatric opinion was sufficient to order an involuntary hospitalization, although it is important to note that often the doctors were under government pressure (47). Article 14 of the relevant mental health law specifies that in the assessment of mental health, the psychiatrist must not take into account nonclinical criteria, such as political, economic, social, racial, and religious conflicts; family or professional conflicts; or nonconformism toward dominant moral, social, cultural, and religious mores in society (48).

In Russia, reforms to the mental healthcare system took place during the last decade of the 20th century against a background of great social and economic change. The legal regulation of mental healthcare and psychiatric care in the Russian Federation is principally through the Law on Mental Healthcare and Guarantees of the Citizens' Rights in the Course of Care Provision. That law was developed in accordance with principles recommended by the United Nations, and came into force on 1 January 1993. The criteria for involuntary hospitalization are as follows: patients must exhibit dangerous behavior toward themselves or others, they must be helpless and unable to provide for their basic daily needs, and there is a danger of "essential harm" to their mental health if they do not receive mental care. A psychiatrist, who must provide a detailed description of the patient's mental condition, makes the decision. A commission of psychiatrists must assess, within 48 h, whether the decision was justified, and the patient has the right to invite any specialist to participate in this process. If the admission is considered justified, documentation is sent to the local court within the next 24 h and the court has 5 days to review it. In the next 10 days, the patient, his representative, the director of the mental health facility, or an organization authorized to protect the patient's rights may appeal against the judge's decision regarding the hospitalization. The patient's need for hospitalization should be reevaluated every month for the first 6 months. From then on, it should be reevaluated every 6 months. After 6 months, the commission sends the decision (regarding the necessity for continued hospitalization) to the local court, and any further continuation of treatment is approved annually by the judge (49).

The Americas

USA

It has been noted in many states, particularly in California, that requiring more restrictive criteria for the possibility of involuntary hospitalization has significantly increased the number of people detained in prison (see **Table 2**). Some authors argue that favoring a dangerousness criterion, since the 1970s in the USA, has led to a criminalization of the disease (50). In the western world, detained populations have 2 to 4 times more psychosis and depression and 10 times more antisocial disorders than the regular populations. In the USA, in the 1990s, about half of the inmates had mental disorders (51). People with mental illness are detained in prison in the USA more than in any other country, and prison becomes, for them, a kind of de facto "Mental Health Asylum" (50). Contemporaneously with the promulgation of the 1963 Community Mental Health Centers Act, the USA moved away from the necessity of treatment model to the dangerousness model.

In 1964, Washington State set the conditions for involuntary hospitalization as follows. The person, other than having a diagnosed mental illness, has to pose a threat to themselves or others (actually, or as an imminent probable risk), or has an illness that impedes them from being able to fulfill their basic survival needs. In 1966, the American Supreme Court underlined the necessity for the dangerousness criterion, establishing less restrictive criteria for nondangerous patients. The dangerousness criterion is applied in a wide spectrum ranging from exclusively physical damage to a broader risk that may also include the risk of acts that are materially dangerous for oneself and others or to the ability to provide for oneself, and the risk to one's health (1). This overlap is implicit in the "dangerousness" criterion present in much legislation, which is sometimes ascribed or not to a mental disorder. In the legislation of many countries such as Canada, the USA, and Australia, it is specified that the mental illness must be such as to seriously compromise one's ability to react appropriately to one's environment or to determine a deteriorated mental function (15). These elements imply a temporary loss of decision-making capacity, which represents the fundamental requirement in order to disregard the requirement of informed consent.

The conflict between the principles of beneficence and autonomy is easily overcome only when there is a clear lack of autonomy in the patient's decisions, which *inter alia* involuntary treatment proposes to restore. In fact, the refusal of treatment can be interpreted as a symptom of the disease and the patient is supposed to hypothetically or ideally give consent. Autonomy is often assessed in favor of compulsory treatment because of the desire to restore autonomy and decision–making capacity, even though it represents a serious risk for the patient–doctor relationship and the therapeutic alliance (52).

In 1860, the legal requirement for hospitalization was the presence of a mental disorder and the prescription of a treatment. Therefore, carrying out admissions according to the principle of *parens patriae* was simple. The reaction to this led, in the 20th century, to precede the admission by request of a lawyer, and it was then reestablished that the decision had to be first taken by doctors and then approved by judges. In 1951, the National Institute of Mental Health published the "Draft Act Governing Hospitalization of the Mentally Ill," which reestablished the psychiatrist's power of decision at admission. In addition to redefining criteria, it implemented more guarantees for hospitalized patients and limited the duration for admissions from 2 days to 2 weeks. Extended hospitalization required a hearing before a judge, in which the patient would be assisted by a legal representative (1). Over the past decade, many national laws have been created to protect the rights of patients with psychiatric disorders or to facilitate access to care. An example of this is the Wellstone–Domenici Mental Health Parity and Addiction Equity Act of 2008, which supports the importance of a coverage for mental pathology equal to that for surgical or internal medical pathologies and which thus guarantees full access to psychiatric care, both outpatient and hospitalization. Another example is the 2012 Protection and Advocacy for Individual Rights Act, which promotes and protects the human and legal rights of people with disabilities in every US state. The establishment of procedures for involuntary hospitalization is delegated to individual state legislation.

In Illinois, anyone can petition for third–party involuntary treatment, but it must be widely documented by a first certificate compiled by a doctor or a psychologist and a second psychiatrist must examine the patient within the next 24 h and the documents must be sent to the institution's admissions lawyers. Hospitalization may also occur by court order supplemented by a petition or certificate, by a court hearing, and upon examination by another psychiatrist. The law provides for a legal defense service and an authority that can investigate on its own initiative or in response to patient complaints of abuse. These guarantees have been met with some perplexity by psychiatrists because of the difficulty in performing involuntary hospitalizations and the substantial intrusion of legal bodies into the doctor–patient relationship (16).

California promulgated similar legislation for which members of a crisis team, or other professional figures designated by the state, could hospitalize someone in an institution designated by the state for up to 72 h for treatment and evaluation. Following that initial period, and after informing the patient of their rights, a 14-day hospitalization is permitted with medical certification, renewable for another 14 days if the patient is still a danger to themselves. If the patient is considered to be a danger to others, staff can contact the court for authorization of further treatment

TABLE 2 | Legislation, criteria, and procedures in the Americas.

Country	Legislation	Diagnosis	Other criteria	Proposal	Validation	Duration	Ability to appeal
California, USA	Civil Commitment laws, also known as Court–ordered–treatment	Severe mental disorder	Dangerous to self/others; unable to provide for basic personal needs for food, clothing or shelter	Members of a crisis team; other professional figures	Physicians	72 h for evaluation; 14 days of detention renewable for a maximum of 90 days	Yes
Washington, USA	Involuntary Treatment Act (Revised Code of Washington, Title 71, Chapter 71.05: Mental Illness)	Mental disorder or substance use disorder	Danger to self/others; danger of physical harm from failure to provide for essential human needs; severe deterioration in routine functioning as seen in loss of cognitive or volitional control	Third party	Designated mental health professional or a Court hearing	Initial detention up to 72 h; detention up to 14 days renewable for 90 or 180 days	Yes
Alberta, Canada	Mental Health Act: legislation for the province of Alberta 2012	Mental disorder as a disorder of thought, mood, perception, orientation, or memory that grossly impairs capacity to recognize reality or meet ordinary demands of life	Harm to oneself or others; substantial mental or physical deterioration	Anyone	Physicians; renewals require two physicians (at least one psychiatrist)	Assessment: 24 h; hospitalization: 1 month renewable for a maximum of 6 months	Yes; to the Review Panel
British Columbia, Canada	Mental health Act 1996	Person with a mental disorder	The mental disorder seriously impairs the ability to react appropriately to the environment; requires care in a facility to protect the person or others. Danger not required	Anyone	Physicians; police (in emergency)	First certificate: 48 h; second certificate: 1 month renewable for a maximum of 3 months	Yes; to the Mental Health Review Board. Possibility of conditional leave
Manitoba, Canada	The Mental Health Act 1998	Mental disease as a substantial disorder of thinking, mood, perception, orientation, or memory that grossly impairs judgment and behavior, ability to recognize reality	Risk to cause serious harm to oneself or others; the patient is unwilling or is not mentally competent to consent to a voluntary psychiatric assessment	Physicians; anyone	Medical Director; Officer of the Peace	Involuntary admission certificate 21 days. First renewal 3 months and all subsequent renewals 3 months	Yes; to the Mental Health Review Board
New Brunswick, Canada	Mental Health Act 2010	Mental disorder as a disorder that grossly impairs behavior and judgment and the ability to recognize reality	The recent behavior presents a substantial risk of imminent physical or psychological harm to oneself or others	Psychiatrist to the chairman of the tribunal for admission order	Assessment: physician. Admission order of the tribunal shall in writing order that the person be admitted to a psychiatric facility as an involuntary patient	Assessment: 72 h. First certificate: detention 1 month; second certificate: detention 2 months renewable for a maximum of 3 months	Yes; to the Chairman of the Review Board
Newfoundland and Labrador, Canada	Mental Health Care and Treatment Act, SNL 2006	Mental disorder as a disorder of thought, mood, perception, orientation, or memory that impairs judgment or behavior, ability to recognize reality	Risk to cause harm to oneself or others; possible deterioration; the patient is unable to make decisions regarding their need for treatment or care and supervision	Anyone	Judge under the authority of two certificates. Renewals made by physicians	Assessment: 72 h; first detention: 30 days, renewable for a maximum of 90 days	Yes; to the Mental Health Care and Treatment Review Board

(Continued)

TABLE 2 | Continued

Country	Legislation	Diagnosis	Other criteria	Proposal	Validation	Duration	Ability to appeal
Nova Scotia, Canada	Involuntary Psychiatric Treatment Act 2005, amended in 2008	Mental disorder as a disorder of thought, mood, perception, orientation, or memory that impairs judgment or behavior, ability to recognize reality	Risk to cause serious harm to oneself or others; possible deterioration; necessity of psychiatric inpatient treatment; no capacity to make admission and treatment decisions	Anyone can make a request to a Judge	Two certificates from any officer of the peace are sufficient for detention; admission by psychiatrist	Assessment: 24 h; admission: 1 month renewable for a maximum of 3 months	Yes; to the Review Board
Ontario, Canada	Mental Health Act R.S.O. 1990 (Consolidation Period: 2010)	Mental disorder as any disease or disability of the mind	Threat or attempt to cause bodily harm to oneself or others; lack of competence to care for oneself	Anyone (can bring evidence) to a justice of peace	Physician; Judge of peace, police	Assessment: 72 h; admission 2 weeks; renewable for a maximum of 3 months	Yes; to the Board
Prince Edward Island, Canada	Mental Health Act 2010	Mental disorder as a disorder of thought, mood, perception, orientation, or memory that impairs judgment or behavior, ability to recognize reality	The disorder requires hospitalization for safety of the person or others; the patient is unable to consent to psychiatric assessment	Anyone can make an application to a Judge	Judge; Officer of the Peace	Assessment: 24 h; admission: 28 days, renewable for a maximum of 12 months	Yes; to the Review Board
Quebec, Canada	An Act respecting the Protection of persons whose mental state presents a danger to themselves or to others 2002	Mental state that presents an immediate danger to oneself or others	Danger to themselves or others	A member of a crisis intervention unit, person having parental authority	Assessment. Practicing physician operating a local community service center; Officer of the Peace. Admission: Court	Assessment: 72 h; admission: 21 days	Yes; to the Administrative Tribunal of Quebec
Saskatchewan, Canada	The Mental Health Services Act 2006	Mental disorder as a disorder of thought, perception, feelings, or behavior that seriously impairs a person's judgment, ability to recognize reality	Person unable to make informed decisions about their need for treatment and care; risk to harm oneself or others; possible physical or mental deterioration	Anyone	Assessment: Judge of the Provincial Court warrant, Constable, Peace Officer; Admission on medical certificates	First admission: 21 days renewable; long–term detention: 1 year	Yes; to the Majesty's Court of Queen's Bench
Yukon, Canada	Mental Health 2002	Mental disorder as a substantial disorder of thought, mood, orientation, or memory that grossly impairs judgment, behavior, ability to recognize reality	Threat or attempt to cause bodily harm to oneself or others; lack of competence to care for oneself, possible physical impairment	Anyone can request the Judge to make an order for involuntary examination by a physician	Validation: Judge; Officer of the Peace. Admission: physicians	Assessment: 24 h; admission: 21 days renewable	Yes; to the Supreme Court
Jamaica	Mental Health Care Act 2009 Parliament of Jamaica	–	Need for treatment, danger to society	Treating physician or relative of the patient (only in cases of emergency)	Director of a psychiatric hospital or psychiatric ward	7 days, renewable	–
Argentina	Law nr 26/657 of 2010	–	Need for treatment and danger to oneself and others	A member of the hospital team where hospitalization takes place and a psychiatrist within 48 h	Judge	30 days, renewable. After the first 7 days, a judge sends the documentation to the Body responsible for the protection of psychiatric patients	–
Brazil	1934	–	Inability to care for oneself, danger and moral risk to society	–	–	Unspecified duration, there are many hospitals and community residential care clinics	–

up to a maximum of 90 days. Each hospitalization requires a complex procedure to avoid indefinite admissions. Involuntary admissions due to severe disability require a court procedure and can last for a maximum of 1 year. The Mental Health Information Service provides patients with an ombudsman who informs them of their rights (18).

Compulsory treatment without hospitalization is a relatively modern trend in the USA. Such coercive treatment decreases the arrests of people with mental disorders, improves communication, and shortens the duration of necessary hospitalizations (1). The requirements are the presence of a mental disorder, need for treatment, a patient with poor insight and poor adherence, and a probability of danger toward oneself and others (53).

Canada

Most Canadian jurisdictions have evolved the dangerousness criterion into a broader "harm" criterion and introduced, as an alternative, "likelihood of significant mental or physical deterioration." These broader harm criteria have been found by courts to be in accordance with the Canadian Charter of Rights and Freedoms (54). Three provinces also require the person not to be fully capable of making an admission or treatment decision. Often the judge represents the first interlocutor for initial requests by anyone and can provide an examination order as is frequently necessary for a treatment decision when there is difficulty in obtaining the consent of the person or their representative. Admission validation is often carried out by the judicial authority on the basis of medical certificates but is sometimes done directly by doctors (e.g., as in Nova Scotia). All provinces provide for reviews at the request of the patient or other interested persons, and appeals against the decision of the review board are almost always foreseen. The process of assessing the legality of hospitalization (having a court hearing and the right to consult a lawyer) sometimes has a beneficial effect on the patient's acceptance of treatment. Thus, the opportunity to make extensive use of the law is an important therapeutic factor (55).

Central and Latin America

To make the difficult transition from psychiatric hospitals to general hospitals and local services, the Jamaican government has set up a network of specialized nurses, called "mental health officers," who are responsible for providing follow–up assistance to patients after discharge. Involuntary treatment is used as little as possible, and hospitalization durations are generally short and limited to the time of crisis. However, popular access to treatment and medicines is limited and drugs currently in use in western countries are hard to find. The health care service keeps a list of patients who have difficulty following prescribed therapy for this lack of access, or for lack of adherence to treatment, and of all patients who missed their last checkups. This list is used to send nurses to the patient's home to ensure their health conditions (56).

Argentina created a new law on the rights of psychiatric patients in 2010, which specifies that 10% of health expenditure must be used for a transition from custodial to community psychiatry. It also prohibits the construction of new psychiatric hospitals, instead shifting efforts to placing patients in beds in the general hospitals and strengthening services in the territory. Hospitalization is to be carried out under conditions of urgency, and the two criteria for a compulsory admission are as follows: danger for oneself or others, and a patient's lack of understanding of their state and a consequent inability to express consent to the care (57). Contrarily, in Brazil, the criteria for involuntary treatment are expressed in a law of 1934 (but are not explicitly stated in the current law) as imminent danger to oneself or others, "moral" risk to society (for example, inadequate sexual or financial behavior), or inability to take care of oneself. Access to psychiatric treatment is not ensured in Brazil, and patients often remain at home in desolate conditions, on the street, or even sometimes in prison. There are three types of hospitalization: voluntary admission where the patient consents to treatment, involuntary admission where there is only partial consent, and forced admission in the event that the patient denies consent. Forced hospitalization occurs when necessary, while involuntary admission must be authorized by a judge (58).

Oceania and Asia

New Zealand requires the presence of serious danger to the safety of oneself or others, seriously diminished capacity to take care of oneself, or serious danger to their health (see **Table 3**). Anyone may apply to the Director of Area Mental Health Services for an assessment, which is determined by doctors as the Compulsory Treatment Order (community treatment order or an inpatient order) is decided by a court. The Mental Health Act of 1992 introduces community treatment orders in New Zealand. Clinicians often consider them to be a useful strategy for patients with schizophrenia and major affective disorders, as many scholars have identified the need to move beyond hospital utilization rates as a measure of efficacy (59).

In Australia, each jurisdiction has its own mental health act that regulates the involuntary commitment and treatment of people suffering from mental illness. Although every jurisdiction has its own definitions, generally the presence of a mental illness, a risk of serious harm to the person or to others, and the provision of treatment for that illness are required. Hospitalization has to be the least restrictive alternative to ensure appropriate treatment to the patient (60). Procedures for compulsory assessment and admission vary as well among jurisdiction: for example, the Victoria Mental Health Act No. 26 of 2014 states that an Assessment Order can be made by a registered medical or mental health practitioner to enable a person to be compulsorily examined or detained after an evaluation by an authorized psychiatrist. A Temporary Treatment Order is made by an authorized psychiatrist, and a Treatment Order is made by a tribunal. A patient may seek a second psychiatric opinion at any time.

The new Statue of the State of Israel allows for involuntary treatment for people with mental disorders that cause deterioration in judgment or in the ability to recognize reality, which causes severe emotional injury to others. The district psychiatrist can order an involuntary psychiatric evaluation of the subject. Hospitalization shall last no more than 7 days, with the exception of the possibility

TABLE 3 | Legislation, criteria, and procedures in Asia and Oceania.

Country	Legislation	Diagnosis	Other criteria	Proposal	Validation	Duration	Ability to appeal
New Zealand	Mental Health (Compulsory Assessment and Treatment) Act 1992 No 46 (as at 21 February 2018)	Mental disorder: abnormal state of mind characterized by delusions, or by disorders of mood or perceptions or volition or cognition of such a degree that fit criteria for compulsory assessment and treatment	1) Poses a serious danger to the safety of that person or of others or 2) seriously diminishes the capacity of that person to take care of himself or herself or poses a serious danger to their health	Anyone duly authorized may apply to the director of area Mental Health Services for an assessment (with a certificate by a health practitioner). The duly authorized officer or the director of Area Mental Health Services must ask an assessment examination by a psychiatrist or a medical practitioner.	Assessment health practitioner, responsible clinician. Compulsory Treatment Order: The Court (apply by the responsible clinician)	First period of assessment: 5 days. Further period of assessment: 14 days. Compulsory Treatment: 6 months. After review possible renew: 6 months twice. If the court then further extends the order, the extension shall have effect indefinitely	Yes; to the family court Judge or any District Court Judge
Australia	Different legislation for involuntary commitments and treatments among Australian Jurisdictions	Mental illness	Risk of serious harm to the person or to others and provision of treatment for that illness	Procedures vary among jurisdiction. For example, Victoria Mental Health Act states that an Assessment Order can be made by a registered medical or mental health practitioner to enable a person to be compulsorily examined or detained	The assessment must be made by an authorized psychiatrist who can issue a Temporary treatment Order to detain and treat the patient in a designated mental health service. Treatment order is made by the tribunal	Assessment Order: 72 h Temporary treatment Order: 28 days Treatment Order: 6 months	Yes
Israel	Law on care of the mental health patients 1991	Inability to exercise judgment and to criticize reality	Immediate risk to endanger themselves or another person. Refuse to be examined by a psychiatrist	District psychiatrist	–	7 days, extendable by the chief psychiatrist or District Psychiatric Committee	Yes; to the Psychiatric committee
Taiwan	Mental Health Act of Taiwan 1990, amended in 2007	Psychotic state	Unable to adhere to treatment; danger to themselves or others	–	Two designated psychiatrists	60 days; possible extension of another 60 days	–
China	Mental health law of the People's Republic of China, 2012	Severe mental disorder	Self-harm, behavior that harmed or endangered the safety of others	Family members, employers, local police	One psychiatrist	Not specified	Yes
Japan	Law Related to Mental Health and Welfare of the Person with Mental Disorder, 2006	Compulsory admission: Mental disorder	Risk to harm themselves or others	Any party or the police has to notify the person to the prefectural governor	Two designated physicians	Initially 4 weeks; continuation not defined	Yes; to the Psychiatric review committee
		Admission for medical care and protection: Mental disorder	–	The person responsible for their protection (guardian)	One designated physician		

(Continued)

TABLE 3 | Continued

Country	Legislation	Diagnosis	Other criteria	Proposal	Validation	Duration	Ability to appeal
India	The Mental Healthcare Act, 2017 NO. 10 OF 2017	Mental disorder	Recently threatened or attempted to harm themselves, behaved in a violent manner toward others, have caused someone to fear for their safety, to have shown an inability to take care of themselves at a level which put them at risk of harm	Patient's representative	Mental health professional or a general practitioner for the initial admission; after that assessment by two separate psychiatrists	30 days for the initial admission; after that 90 days, renewable up to 180 days	Yes; to the Concerned Board
Korea	Mental health Act No. 12935, 2014	Severe mental illness	Danger to harm themselves or others	Anyone with the consent of a physician and a police officer	One psychiatrist	Emergency hospitalization: 72 h; after psychiatric assessment: up to 6 months	Yes
Malaysia	Laws of Malaysia, ACT 615, Mental Health act 2001	Mental disorder	Admission necessary for assessment and treatment to protect health and safety of patient and others	Request from a relative, recommendation of a medical officer or a registered doctor	Medical director of the psychiatric hospital with the assessment made by medical officer or registered practitioner	24 h for the initial assessment; after that 1 month extensible up to 3 months	Yes; the patient or relatives can submit a request to the medical director for the discharge
Iran	No separate mental health legislation	Severe mental disorder	Serious risk to themselves or others	–	Forensic Doctor	Up to 2 months	–
Pakistan	Mental Health Ordinance for Pakistan 2001	Mental illness	Admission necessary for the safety and health of the patient or the protection of others	–	Two medical officers, one of whom shall be a psychiatrist	Admission for: 1) Assessment: 28 days; 2) Treatment: 6 months 3) Emergency admission: 72 h 4) Emergency holding: 24 h	Yes; before the Court
Thailand	Mental Health Act, B.E. 2551 (2008)	Mental disorder	Threatening condition and need for treatment	Family member, caregivers. Anyone who thinks that a person needs treatment should report to an administrator or police officer who must bring the patient to the nearest hospital	A doctor and a nurse for preliminary diagnosis; infirmary board of the hospital for the admission	48 h for the evaluation; initial duration 90 days, extensible for another 90 days	Yes; to the Appeal commission

that the chief psychiatrist of the district may extend the admission for another week. An appeal against the district psychiatrist's decision can be made by any person (not necessarily by the patient or a relative) to the Psychiatric Committee (61).

In Taiwan, the Mental Health Act, introduced in 1990 and amended in 2007, legally defined the criteria for involuntary treatment as a patient in a psychotic state who is unable to adhere to treatments and is a danger to themselves or others (62). Compulsory hospitalization for severe mental illness should be determined by two designated psychiatrists (63). Psychiatrists in Taiwan expect family members to participate in treatment decisions: Patients are often persuaded by family members to sign for admission and treatment, so the proportion of involuntary hospitalizations (7.3 per 100,000) is low, compared with other developed countries (62).

In China, when persons with a suspected mental disorder harm themselves or others, or endanger the safety of others, close family members, employers, or local police shall take them to a medical facility for a psychiatric assessment (64). A psychiatrist must make the admission decision. There are no separate legal definitions for hospitalization and involuntary treatment, and mandatory treatment beyond hospitalization is not allowed. Treatment can be imposed if the guardian or family approves; otherwise, it should not be administered. If the patients or their guardians disagree with the result of the diagnostic assessment, they may request a diagnostic reassessment and an independent, legally binding certification of the case (64). The law does not specify the initial interval or the revaluation interval (15).

In Japan, there are two types of involuntary hospitalization: a compulsory admission indicated by two designated doctors, and admission for medical care and protection (65). Only the first of these requires the patient to be a danger to themselves or others if they are not hospitalized. In the first type of compulsory admission, the patient must have a mental disorder and be at risk to hurt themselves or others unless hospitalized (66). The second type of involuntary admission states that the administrator of the mental hospital may admit a person without their consent if the person responsible for their protection consents to such hospitalization, based on the examination by the designated physician. The initial duration of involuntary treatment is 4 weeks, the duration of continuation is not defined, and, outside of hospitalization, there is no allowance of other mandatory treatment. Decisions are reviewed by a psychiatric review committee whose members take into consideration any discharge requests from the patient or their guardians (15).

In India, according to the Mental Healthcare Act nr. 10 of 2017, the person must suffer from a mental disorder of such severity to put themselves or others at risk of harm and have shown an inability to take care of themselves (67). A mental health care professional may admit a patient to an institution, upon request by the patient's representative, if the criteria are met in a recent assessment, by a mental health professional, or by a general practitioner. The involuntarily admitted patient may request a review of the admission decision by the "Concerned Board."

The Korean Mental Health Act No. 12935 of 30 December 2014 allows for involuntary admission if a psychiatrist determines that the patient suffers from a severe mental illness of such a grade and nature that it requires hospitalization in a mental health institute and if the hospitalization is necessary for the health or safety of the patient or others. When the situation is particularly urgent, anyone who suspects that a mentally ill person presents a risk to themselves or others may request their emergency hospitalization with the consent of a physician and a police officer. The duration of emergency hospitalization can last up to 72 h, before requiring a psychiatrist to establish the need for continued admission (68).

In Malaysia, the criterion is that a patient must have a mental disorder that is grave enough to require admission to psychiatric hospital for assessment or treatment in the interest of their health or safety or to protect others. The law specifically states that no consent is required to administer psychiatric drugs. The patient or relatives can submit a request to the medical director for the discharge of an involuntary patient. A patient who has been discharged may be required by the medical director to undergo community care treatment at a government community mental health center (69).

The situation in Indonesia for persons with mental illness is far from satisfying from a human rights point of view. Basic mental health services are unavailable in many parts of the country, and the primary psychiatric treatments are custodial in nature. Involuntary treatment is common even though there is no real legal basis for it. A person can be brought to a hospital and committed without their consent by anyone who feels negatively affected by their behavior (70).

The lack of human resources and governmental investment in mental health services in Cambodia forces the families of mentally ill patients to deal with their illnesses without the support of adequate medical assistance. When mental disability is severe, many family members are forced to resort to chaining or caging patients as a solution (a phenomenon that seems to involve 10–40% of psychiatric patients). Many mentally ill patients are put in prison or in detention facilities that operate outside the criminal system and where drug addicts and other "undesirables" such as homeless people, prostitutes, and the mentally disabled are illegally detained. Individuals who are detained are not accused of any crime and do not have the right to confer with a lawyer or to request a review of their detention. Treatment in these centers is brutal: involving chains, beatings, and overcrowding, and people can be detained for months or years (71).

Iran requires the presence of a severe mental disorder and a serious risk to themselves or others. A forensic doctor must carry out the assessment regarding whether the criteria for involuntary treatment are present, and if so, they shall determine the duration of the admission, up to a maximum of 2 months (72).

The "Mental Health Ordinance of 2001" regulates mental health care in Pakistan, and the duration of involuntary treatment depends on the context. A patient can appeal against an admission decision before the Court. This new law reduced the period of forced detention by the police and magistrates from 10 h to a maximum of 72 h, which has minimized abuse of the system.

Another important clause provides for a psychiatric assessment for all blasphemy defendants to ensure protection and to curb the high number of psychiatric patients who are punished and tried under the “blasphemy laws” (73).

A patient in Thailand can be subject to mandatory treatments when they suffer from a mental disorder and are in a threatening condition and need treatment. If the patient is unable to consent to treatment, consent is provided by a family member or caregiver. If the presence of a mental disorder is ascertained, the “Infirmary Board” decides whether to admit the patient or order them to seek treatment outside if they are not in a state of threat. The patient or caretaker can apply to the appeal commission within 30 days of admission (74).

Africa

The current mental health situations on the African continent vary widely. We roughly distinguish sub-Saharan Africa from the countries of the Maghreb. The latter, together with Somalia and Sudan, have joined the WHO Mental Health Atlas, and some of them (Algeria, Egypt, Morocco, and Sudan) have an autonomous legislative system on mental health. These countries have committed themselves to reviewing the principles on which mental health laws are based in order to adapt to WHO standards (14). Despite these intentions, the rights of the sick are not often recognized and respected in many countries. Often, the main criterion for which a patient is hospitalized is the state of danger to themselves or others, although requests by family members who cannot take care of the patient at the time of crisis are another frequent reason for hospitalization (75).

In Algeria, the first mental health law dates back to French colonization. Before that, the sick were brought to the *maristans*, asylums dating back to the Ottoman Empire. At the beginning of the colonial era, patients were instead brought to psychiatric hospitals in the south of France until 1912, when psychiatric hospitals were built in Algeria. After independence, Algeria presented a bill that essentially followed the French model. In 1985, a second mental health bill came into force, which still applies today. According to this law, there are two types of involuntary admission: hospitalization by written request of a family member or legal guardian, and admission required by the local governor (*wali*), based on a medical certificate attesting an imminent risk to the patient or others or that the patient is currently unable to give his or her consent. The involuntary hospitalization has a maximum duration of 6 months and can be renewed by a doctor who must submit the request for continuation of treatment to a commission headed by the *wali* (76).

In Libya, the health system is inadequate and without resources due to the current civil war. There are only two psychiatric hospitals in the country, and the conditions of hospitalized patients are very poor: hygiene is neglected, procedures are antiquated and implemented without taking into account the rights of patients, and hospitalizations (almost all involuntary) are transformed into long-term stays of months and sometimes years. Patients often come to services with chronic illnesses and often late, only when their family is no longer able to manage them. This is due mainly to the stigma associated with mental illness. Family members initially prefer to consult healers and then turn to the family doctor, and only when these attempts fail, they turn to a psychiatrist. Libya’s current legislation on mental health came into force in 1975 and has not been revised (77).

The situation is also precarious in sub–Saharan Africa, although many countries try to adapt to the principles and criteria of the South African Mental Care Act of 2002. Unfortunately, the scarcity of resources invested in individual national health systems and the deeply rooted traditional cultures have not allowed many countries to protect and regulate the rights of psychiatric patients yet. It should be noted that some countries, such as South Africa, are moving toward modernization. In many others, hospitals and health care are present almost exclusively in large cities, leaving rural areas almost completely lacking in services (78). The belief present in many rural villages is that mental illness is the work of a djinn (a spirit) that possesses the person and upsets the mind. This causes people to turn to ancient traditions and rituals in the hope of expelling the malignant entity. In many countries, for example, the sick are stripped and chained to poles outside the houses; in others, healers are called to try to free the sick through rituals of black magic (79).

There is an interesting story of Gregoire Ahongbonon called “the African Basaglia,” a tire maker born in Benin who, during a trip, noticed a malnourished boy chained because of his illness. Ahongbonon released him and, with the help of a nurse, began to free many others and to form a kind of community care for psychiatric patients. Currently, there seem to be thousands of people living, or who have lived, in such communities. However, the comparison with Basaglia seems in reality not very fitting. Ahongbonon did not propose a passage from a custodial to a community psychiatry but instead acted by linking popular beliefs and legends to a possibility of medical care; in this way, perhaps, we could think him more similar to Pinel (80).

Criteria for Involuntary Care With Regard to Risk of Suicide

It is convenient to emphasize that in the jurisprudence inherent to the treatment of mental illness, the danger for oneself and others is generally considered nearly equal. The psychiatrist is responsible for the prevention of self-injurious acts as well as those who injure others. This naturally raises the problem of individual freedom even in the absence of material damage to third parties. Suicide is not a crime in the vast majority of legal systems, and India has introduced a new bill, which mentions the decriminalization of suicide attempts (81). It states that there is a serious stress in those who make the attempt, and such people should not be tried and punished. Furthermore, it is noted that the government should provide treatment and rehabilitation for these persons, and take measures to reduce their suicidal risk (82). In Nepal, attempted suicide is illegal: People who attempt suicide are imprisoned or fined (83). In the Western world, current legislation regarding suicide has become less punitive (84).

The extreme measures of prevention demanded of psychiatrists are a consequence of the times following Esquirol (1821) who interpreted suicide as a medical problem that occurs as the consequence of a mental disorder. There is an open debate on this univocal interpretation of suicide, although this interpretation is supported by many Western academics. Moscicki states that a psychiatric disorder is a necessary condition for suicide, and Jamison asserts that there is "the unequivocal presence of a serious psychopathology in those who die by their own hand." Contrarily, some authors, especially in Asia, criticize the medicalization of suicide by claiming that only some of the people who commit suicide suffer from mental disorders. A report in Korea states that "the current suicide epidemic in Korea has social origins" (84). In the WHO Report on Preventing Suicide: a Global Imperative, involuntary treatment does not figure in the prevention of suicide, although it is allowed in many countries, including England and Wales. Compulsory medical treatment can sometimes actually increase suicide risk by discouraging treatment requests for fear of being detained. Regardless, the WHO recommends that requests for help should be encouraged. Among other things, the high risk of suicide was noted after resignation due to the experience of discrimination and dehumanization of hospitalization (85).

Article 14 of the UN Convention on the Rights of Persons with Disabilities (CRPD), entitled: Liberty and security of person, provides that:

"1. States Parties shall ensure that persons with disabilities, on an equal basis with others:

a) Enjoy the right to liberty and security of person;

b) Are not deprived of their liberty unlawfully or arbitrarily, and that any deprivation of liberty is in conformity with the law, and that the existence of a disability shall in no case justify a deprivation of liberty.

2. States Parties shall ensure that if persons with disabilities are deprived of their liberty through any process, they are, on an equal basis with others, entitled to guarantees in accordance with international human rights law and shall be treated in compliance with the objectives and principles of the present Convention, including by provision of reasonable accommodation" (86).

According to that article, the criterion of danger to oneself and others, linked to actual or perceived impairment, is not a sufficient reason for compulsory treatment. However, most legal systems (excluding, for example, Italy and Spain) accept that prohibiting compulsory treatment contravenes people's rights, such as their right to treatment to avoid suicide. In fact, this prevention constitutes a frequent reason for obligatory treatment. In a study conducted in Belgium on 346 patients subject to involuntary treatment, 45.1% of them were considered to be a danger to themselves (87).

There are two clinical problems in suicide prevention, one of which pertains to the difficulty in predicting suicide risk. A recent meta-analysis revealed that in a 5-year follow-up, nearly half of suicides were considered low-risk patients, while 95% of high-risk patients did not die by suicide (85). The other problem considers that preventing suicide with coercive measures can hinder a psychotherapeutic path. This is due to the repercussions of a communicative and emotional gap that the coercive measure contains, which is often not easy to elaborate in the relationship. In this context, the symbolic and relational, rather than legal, significance of the Ulysses contract is important as it provides for a prior consent to treatment (10). Psychiatrists can sometimes find themselves in a painful contrast between their legal responsibility and the desire to cure.

The Vienna Declaration and Program of Action on Human Rights, adopted by the World Conference on Human Rights in June 1993, provided at paragraph 64 of Chapter 6 ("The Right of the Disabled Person") that "the place of disabled persons is everywhere." Following that principle, the CRPD, adopted on 13 December 2006, and its later interpretation through the Committee's Guidelines on Article 14 of the Convention (adopted September 2015), continue the long road to full equality, respecting the particularities of disabled people (see, in particular, paragraph e of the Preamble and Articles 3, 5, 12, 14, and 15 of the CRPD). These rules are intended to combat society's fear of disability and mental illness, and to eliminate the consequent stigma. National legislators, psychiatrists, and jurists are called to follow this road. With regard to the broad debate, generated by the extreme positions taken by the CRPD Committee (e.g., that involuntary admission and involuntary treatment are illegal) in light of the above considerations, we believe jurists and psychiatrists have to interpret the national provisions, as far as possible, in line with the CRPD and its Guidelines (88–91). Any justified exception must be a last possible course of action. On the other hand, we should probably consider as a positive exception also those situations in which involuntary admission and treatment concern people in a state of social marginalization or existential loneliness for which this option may paradoxically represent the only possibility of access to the treatments that potentially open to a path without which the situation could become increasingly painful and dangerous.

DISCUSSION

Although most countries around the world are trying to make progress in psychiatric procedures and legislation, we have seen how varied the situation is. In Africa, the lack of progress can be attributed to multiple causes. For example, stigma is still strongly present in many countries (as it is even in Western countries); famines, epidemics, wars, and political instability often do not allow for focus on improvements; and lack of funds as well as of the proper mentality and infrastructure also contributes to the stagnation.

In Latin America, the situation is different: Many governments are concentrating their efforts on transforming structures, making them more livable, and setting up departments within general hospitals for psychiatric patients. Some countries have allocated a considerable share of health funds to psychiatry. Despite this, we are still far from the passage in the mind and in the material reality from a custodial psychiatry to a psychiatry that protects the rights of the patient while providing appropriate care.

In Europe, legislation emphasizes the exceptional nature of compulsory medical treatment. Australia and some Asian countries comply with western regulations, while in other Eastern countries, the mentality and regulatory framework remains in the custodial mold. It is, however, true that the treatment of the mentally ill is a fundamental element for the assessment of the pluralist democracy level of each legal system. In less developed countries, the stigma of the psychiatric patient determines that the treatment is, in fact, entrusted completely to the family and contact with the psychiatrist takes place only in situations of imperative urgency, which often means that the first contact of care results in a coercive measure. In these areas, greater social support for patients with mental illness would be desirable. As has been implemented already in some countries, it is important, globally, to increase from early on society's awareness of mental illness so that people with mental disorders have a lived experience of greater reception and can cope (as far as possible) with mental pain in a more supportive group manner. There are two critical issues concerning mandatory treatment: the breach of the self-determination principle and the risk of breakdown of the therapeutic relationship. If the context of mental illness is the only area in which the refusal of treatment is often identified as a symptom of the disease, it is important to evaluate, in a multidimensional view, the decision-making capacity of the patient (9).

The injury to self-determination causes a wound that is difficult to process. In this regard, it is noteworthy that even patients who subsequently considered a compulsory admission to be justified maintained a feeling of anger about the event. In this light, advance treatment directives (such as Ulysses contracts) can play a significant role: In fact, various authors highlight how they can help promote self-determination and the ability of the patient to make decisions (92). The ability to imagine a potential future crisis and its resolution can enhance the patient's insight on their pathology. It seems that advanced directives reduce involuntary treatments, helping patients better understand the need for crisis prevention and ways to decrease violent acts. This early consent is a valid tool for deescalating crisis: Knowing that a given intervention, even if it causes discomfort, has previously been agreed to by the patient in discussion with medical staff makes it more acceptable compared to an *ex novo* coercive intervention.

The central role of communication in therapeutic relationships and its substantial destruction in emergency coercive interventions lead one to consider the resumption of the interrupted communication postcrisis or the possibility of using advanced directives. The greatest risk of coercive intervention in the psychiatric field is constituted by the absence of the recognition of emotions during the implementation and by the consequent communication impasse between the psychiatrist and the patient. This could create a lacuna in the experience of both the patient, whose crisis is emptied of meaning while requiring urgent intervention, and the psychiatrist, which can be difficult to process for both of them.

It would be interesting to explore the therapeutic role of procedures in which the patient communicates with various interlocutors. The more articulated procedure actually determines a dialogue with a significant relational meaning and is opposite to the abandonment anxiety that involuntary admission can cause. Hospitalization, in addition to representing a physical distance from the family, often represents an interruption of communication for the patient. This interruption, inherent in involuntary admission, can also stir up the persecutory anxieties of being a monster excluded from human assembly. Procedures that provide for discussions regarding hospitalization can acquire the symbolic value of a reintegration into the patient's humanity.

Patient Experiences

Some studies underline the patient's experience of involuntary treatment, in particular with regard to the respect for their dignity. The Universal Declaration of Human Rights gives dignity a central role, stating "all human beings are born free and equal in dignity and rights." In the UK, Mental Health Act of 1959[4] emphasizes, in addition to the right of the person to receive medical treatment and the need for public protection, the right to dignity and freedom (93). This act was accepted as an act of social welfare. Title I of the Charter of Fundamental Rights of the European Union[5], entitled "Dignity," is composed of five articles. Article 3, entitled "Right to the integrity of the person," states in paragraph 2(a) that "[I]n the fields of medicine and biology, the following must be respected in particular: (a) the free and informed consent of the person concerned, according to the procedures laid down by law" (94). Article 4 of the ECHR, identical to Article 3 of the CEDU, prohibits degrading or inhuman treatment. The sense of loss of power and autonomy, the reduction of self–esteem, and the main desire to be treated with dignity and respect by the staff can be seen in the semistructured interviews of patients who have been subject to involuntary treatments. Reduction of the coercive element and patient involvement contributes to reduction in the feeling of loss of dignity (93). Therefore, advance directives, which represent an important relational element, lessen feelings of coercion (95). The painful consideration of the relativity of the concept of freedom is opportune in cases in which, paradoxically, dignity would be more affected by the lack of treatment of marginalized people living in degrading conditions, easy victims of criminality. This also applies to the suffering of patients and third parties for violent acts carried out in the acute phase.

Hospitalization seems to be associated with high levels of perceived humiliation and consequent anger (96, 97). The lived experience of humiliation seems to be greater in schizophrenic patients with depressive comorbidity and in those with low education and/or lacking employment (98). This element has inevitable consequences on the therapeutic relationship and on the patient's adherence to the treatment plan. Therefore, future efforts must be made to minimize the use of coercive measures that breach the principle of self–determination and impede doctor–patient communication. A Swedish study observed that hospitalization and coercive care are experienced by the patient as a loss of freedom, where the patient is not involved and in which no one cares for them or explains what is happening. Alternatively, some patients feel respected and cared for by the staff, which may facilitate their request to take personal responsibility for being involved in their care. Differently, sometimes the patient can feel relieved at not being involved in the decision–making process as it absolves them from duties and responsibilities when they are

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[4] Revised from 1983 to 2007.

[5] With effect on 1 December 2009, binding 28 Member States (including the United Kingdom).

not well (43). In any case, objective legal status and subjective feelings are not equivalent: Formal legal status is not the only etiological factor in the variability of the perception of coercion (95). In general, if it can be assumed that the greater the sense of coercion, the worse the clinical outcome for the person in care, other results could be that negative hospitalization experiences do not influence the outcome (9, 99). Informal coercion also plays an important role. Psychiatrists interviewed in the study considered informal coercion to be effective in the therapeutic process and with future adherence. It should be noted that the use of informal coercion can be underestimated as it is sometimes used unintentionally. When informal coercion is accompanied by high levels of perceived coercion and a sensation of disparity, the therapeutic relationship may be affected by an interruption of the therapy. Conversely, benefits such as increased adherence, promotion of clinical stability, and avoidance of relapse occur when there is a combination of a low level of perceived coercion and a sensation of fairness and justice (100). A study conducted in Pennsylvania and Virginia observed that approximately 10% of the voluntarily admitted patients reported that they had felt forced into admission during negotiations with the hospital staff (101). Gardner and Lidz noted that even patients who considered their hospitalization justified continued to experience anger with regard to their admission as a result of the damage caused by coercive elements and the consequent loss of autonomy (102).

Role of the Family in Health Treatments

In many parts of the world where health systems are limited or nonexistent, family members are the only resource for people with mental disorders. While in the European countries there is great attention to privacy, in other traditions this aspect takes on less importance. In many parts of India, for example, a family member is required to stay in the hospital to ensure that the patient does not leave, to cook for them, and to provide for the patient's hygiene. This role, taken on by the family member, infringes on the patient's right to privacy. Most laws have clauses allowing for involuntary treatment upon request by family members, although their involvement can put them in a position of conflict with the patient (103). The familial relationship is an important element even when not related to decision–making power but when the family has the ability to generate the initial request for the hospitalization. Often, the patient's family members prefer to be kept out of the implementation of involuntary treatment because of the repercussions for their relationship. The differences among countries with regard to pressure on hospitalization are noteworthy. For example, in Europe, relatives in Bulgaria exert more pressure on admissions, while in Italy, relatives tend to avoid requesting hospitalization (104). In Japan, compulsory hospitalization is generally ordered by the Prefecture Governor, but if a family member consents, all that is required is that the patient has a mental disorder and needs hospitalization. In fact, traditionally, the family is the primary decision-making body for its members. In India, hospitalization is carried out by request of a relative or a friend if two doctors agree on the need in the interest of the sick person (15).

The singer Frank Zappa once said: "the biggest problem in the world is mental health." To date, many countries are tackling this problem by adapting their legislative systems to offer potential prevention strategies and appropriate care for people with mental disorders. There is much to do in the psychiatric field to ensure care, dignity, and rights for patients, but perhaps, despite the economic disparities, cultural traditions, and related stigma in various countries, we begin to take the first steps in the right direction.

AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct, and intellectual contribution to the work, and approved it for publication.

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Refusing Medication Therapy in Involuntary Inpatient Treatment—A Multiperspective Qualitative Study

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Objective: Between June 2012 and February 2013, two decisions by the German Federal Constitutional Court restricted the so-far common practice to use involuntary medication in inpatients who were involuntarily hospitalized. Up to then, involuntary medication was justified by a judge's decision on involuntary hospitalization. It could be applied according to clinical judgment even against the declared will of a patient. Since then, all domestic laws related to involuntary treatment had to be revised. For several months, involuntary medication was allowed only in an emergency. We were interested in the impact of the changed legal framework on the experiences of inpatients, their relatives, and clinical professionals during that time.

Methods: Thirty-two interviews were analyzed qualitatively using a grounded theory methodology framework.

Results: As a consequence of the restrictions to involuntary medication, special efforts by nursing and medical staff were required concerning de-escalation, ward management, and the promotion of treatment commitment in inpatients who refused medication. Family caregivers were also under strong pressure. They wanted to help and to protect their relatives, but some also welcomed the use of coercion if the patient refused treatment. Most of the interviewed patients had not even noticed that their rights to refuse medication had been strengthened. They complained primarily about the involuntary hospital stay and the associated limitations of their everyday lives. While patients and family members evaluated the refusal of medication from a biographical perspective, the mental health care professionals' focus was on the patients' symptoms, and they understood the situation from a professional perspective. It was obvious that, in any of the four perspectives, the problem of feeling restricted was crucial and that all groups strived to gain back their scope of action.

Conclusion: The temporary ban on involuntary medication questioned the hitherto common routines in inpatient treatment, in particular when patients refused to take medication. Each of the different groups did not feel good about the situation, for different reasons, however. As a consequence, it might be indispensable to increase awareness of the different perspectives and to focus the efforts on the establishment of nonviolent treatment structures and practices.

Keywords: compulsory treatment, involuntary treatment, coercion, medication refusal, qualitative analysis

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INTRODUCTION

In 2011, the German Federal Constitutional Court imposed sharp restrictions on the use of compulsory treatment in mental health hospitals by two decisions (1, 2). In a subsequent decision from June 2012, the federal supreme court stated that compulsory treatment was not sufficiently legitimized by any of the existing 16 federal state laws, or by the federal guardianship law that allows hospitalization for a variety of social and health reasons (3). This decision created a legal vacuum, which only allowed enforced medication in terms of emergency treatment, legitimized by a state of immediate emergency (§ 34 StGB). However, emergency treatment is restricted to a single treatment in an acute life-threatening crisis. After a reform of the guardianship law in February 2013 and of the Mental Health Laws (PsychKHGs) of the 16 federal states between 2015 and 2018, compulsory treatment in patients with lack of insight into their illness is permitted again but only after judicial approval with strict procedural requirements (e.g., after a distinct court decision, which is based on the expertise of an independent psychiatrist; if there is a danger to the patient's or others' health or life, after considerable efforts to persuade the patient to have treatment have failed) (4).

This temporary legal gap provided us with a quasi-experimental situation in which to study how all different actors involved were able to cope with drug refusal in the ward when the option of coercive medication treatment was no longer available. Quantitative analyses of routine data showed that during that period, the number of aggressive incidents as well as the use of seclusion and restraint increased. After the new legislation had come into force, the levels dropped to the level before the ban of involuntary medication (5). Chart analyses of patients who were treated in the period before and during the ban showed that during the ban, there were more restrictions of freedom, while dosages of antipsychotic medication at discharge and the small percentage of those who did not take any medication at discharge remained stable (6).

These results indicate that the actors involved had to deal with significant changes and challenges at that time. Patients may have enjoyed the freedom to simply refuse the offered medication without the risk of involuntary medication. Doctors and nurses may have had to give up the usual routines and find other ways to get patients to take the prescribed medications. Caregivers may have found it confusing to see their family member being kept in the ward without receiving any medication.

Thus, the aim of this study was to explore how representatives of each of these four groups experienced the refusal of medication when the option of involuntary medication was not available anymore. How did they conceptualize their situation? What were the main challenges reported, and what opportunities were seen? How did the actors react? How did they interact with others? Which conflicts arose? Which solutions were found? We chose a qualitative approach in order to explore and to collate the varying perspectives of our respondents, and we deliberately allowed a broad focus in the narratives. In particular, we aimed at finding starting points for reconciling the positions in the antagonism between the patients' right to self-determination and the professional commitment to avert damage from the patients.

MATERIALS AND METHODS

Participants

Four groups of participants were chosen for the interviews: patients who currently or previously refused antipsychotic medication during inpatient treatment, family members of patients who actually or previously had refused medication in inpatient treatment, and finally, physicians and nursing staff who had experiences with patients who refused medication. The selection of interviewees was guided by the assumption that these groups were affected the most by the changed legal framework.

With one exception, all patients included in the study were currently in inpatient treatment. They had to be diagnosed with schizophrenia or schizoaffective disorder (ICD-10: F20.x or F25.x) or bipolar disorder (ICD-10: F31.x) (7). Besides organic mental disorders, these are the diagnostic groups most often involved in compulsory medication treatment (8). The participants had to have sufficient cognitive abilities and German language skills to be able to participate in the interviews. Participating hospital staff had to be experienced in patients who had been subjected to involuntary treatment, i.e., nearly all of these interviewees were working at psychiatric acute units. The interviewed family members did not have to be related to participating patients, although some actually were. In an extensive preliminary conversation, we verified that all participants understood the procedures and aims of the study.

The search for eligible participants took place according to the snowball principle. Patients were first contacted by the ward staff, who looked for eligible patients meeting the inclusion criteria. They were asked for permission to be contacted by the interviewer. Only then did the interviewer contact them, explain the study, and ask them to give informed consent to participate in the study. The participating hospital staff was addressed directly by the interviewer, or a contact was arranged by colleagues. Family members were approached only after their ill relatives in the ward agreed, or they were addressed directly at meetings of self-help groups.

We intended to use a strategy of purposeful sampling. This approach is widely used in qualitative research in order to get the broadest possible views on an issue while the number of interviews is limited (9, 10). This means we were looking for participants who were experienced in the phenomenon to be investigated (medication refusal) but at the same time represented a variety of experiences within the interviewees' groups. So, after a few interviews had been conducted, transcribed, screened, and annotated with comments, we reflected on the inherent perspectives of the interviewees. We made up our minds if there were any important aspects missing that had not been covered by the participants. Then we continued the search for eligible participants and added new interviews to the sample. For example, after several interviews with the hospital staff who were critical about the legal changes, we chose to find also some mental health professionals who welcomed the change. After several interviews with patients very critical about their medication, we searched for patients who eventually accepted taking antipsychotics. For this aim, we also interviewed some experts outside the hospital.

Data Gathering

We conducted guideline-based problem-centered interviews in an open, casual manner (11). The interviews started with a statement explaining the aim of the study: "This study wants to explore your experience with (your relative/patients) refusing to take the medication on ward. I am interested in the circumstances, how it came about, and how you and your environment dealt with the situation. I am also interested in how you evaluate and judge the situation now." The interviews covered primarily the issues the interviewee wanted to talk about, but the guidelines served as a checklist for relevant topics that had not yet been covered during the course of the interview. The guidelines comprised the following topics: consequences of the juridical situation for the individual; visible implications on structures and processes in the hospital; effects on the relationships between therapists, nurses, patients, and relatives, motives of treatment refusal; handling of the consequences; and suggestions for resolution or improvement of unsatisfactory situations.

All interviews were audio recorded and verbally transcribed. Interviewees were given pseudonyms. The mean length of one interview was 21 min.

Data Analysis

We analyzed the interviews in a qualitative manner by using a reference frame of grounded theory methodology (GTM) (12–15). Due to practical reasons, we deviated from strict GTM at some points and modified the method. This relates to the sampling of the participants (for technical reasons, the time of recruitment was limited) and to the restriction of the analysis to a central topic shared by all participating groups. The analytical process was supported and documented by using the software atlas.ti (16). After the open coding, the different groups' perspectives were conflated in a model based on a paradigm of Strauss and Corbin (13). This paradigm included a central phenomenon, the causes and context of the phenomenon, the direct consequences of the phenomenon, the actions being taken, intervening factors influencing the actions, and the consequences of actions (cf. **Figure 1**). As a result of the heterogeneous interviews, we chose to define the refusal of medication as the central phenomenon. To ensure intersubjectivity, the coding and the analysis were conducted in close cooperation between the involved researchers. Doubtful cases were discussed until a common solution was reached. The process of analysis and the reflections upon it were documented by collection of emails and by research diaries.

Ethical Aspects

The study started only after the aim of the study and its procedures had been described in detail to the participant and after he or she had given written informed consent. Confidentiality and anonymity was ensured by pseudonymization already during transcription. The study's design and procedures were approved by the medical ethics committee of Ulm University (appl. no. 44/13).

RESULTS

Participants

Eleven patients participated in the study. Their mean age was 43 years (25 to 60 years), six were male, 82% had a schizophrenia spectrum disorder, and 18% had an affective disorder. They had an average of 10 hospitalizations (1 to 30). The eight participating family members had a mean age of 44 years (19 to 72 years), three were male, and five were female. Their roles were father (two), mother (one), sister (one), spouse (two), and daughter (two). The seven nurses had a mean age of 40 (26 to 49 years), five were male, and two were female. Their professional experience in psychiatry ranged from 3 to 36 years (average, 20 years). The five physicians and one psychologist in a doctor's role were all male. Their mean age was 46 (30 to 55 years). Their professional experience ranged from 2 to 29 years.

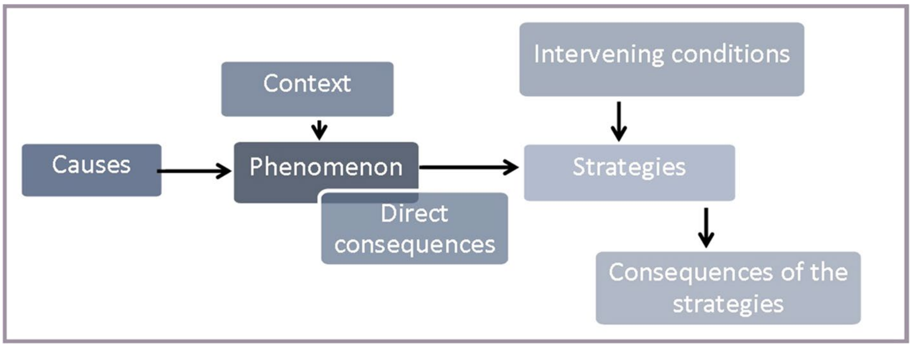

FIGURE 1 | Research paradigm according to Strauss and Corbin (13, p. 78).

Content

For the evaluation of the overall results, the verbal content of the individual elements of the research paradigm (e.g., “causes”) is compared group by group.

An overview of all findings is provided in **Table 1**[1].

Central Phenomenon, Reasons, and Motives

All interviewees of the four groups were asked about the refusal of medication. Accordingly, we determined this issue as the central (common) phenomenon of the analysis and as the starting point of an action model according to the work of Strauss and Corbin (13). The use of an action model was helpful to disclose motives, reasons, consequences, actions, intervening conditions that shaped the actions, and finally, the consequences of actions. The narratives developed around this central element, some in a similar story line, some in rather divergent narratives. In all groups, the phenomenon “refusal of medication” was described and constructed in a similar way. It could include a mere “no” to medication but also an irregular use of the medication (e.g., taking less than prescribed or not taking it every day), cheating when taking the medication, or taking it involuntarily only in reaction to strong external pressure.

Figure 2 shows two typical, complementary examples of the analyses, one of a patient who refuses to take a higher dosage of his medication and one of a doctor dealing with such a situation. In this example, a vicious circle arises when the patient’s actions (e.g., discussions with doctors) to defend his interests (e.g., avoid being prescribed a higher dosage, enjoy new partnership without feeling restricted by medication) are regarded as a direct consequence of the phenomenon by the professionals (e.g., increased symptoms such as agitation) and as evidence for the need to increase the efforts to make the patient take more medication in order to relax. These efforts are taken as evidence by the patient that professionals rarely listen to his needs and just want to tranquillize him.

> “I just want to live again without this handbrake” (Franz, patient)

The main motives for refusal according to patients and family members were different conceptualizations of what was the problem to be treated. Some patients did not think they had a problem at all. Some thought they had other problems and medication treatment was not the adequate therapy. They did not feel understood by professional helpers. These narratives were substantiated by memories of being subjected to coercion and negative experiences with former inpatient treatment, drug treatment, and encounters with therapists. Family members reported similar observations. Patients and family members also talked about impairments of functioning, which they attributed to the medication. Some interviewees not only blamed antipsychotics but also were negative about the use of chemical substances in general. Drug attitudes included the fear of stigmatization by being considered mentally ill because they were taking medication. They also included a general distrust of the benefits of medication, and sometimes, there was a desire not to interfere with the pleasant effects of the condition by taking antipsychotics. On the patients’ side, there was a strong desire to make decisions about one’s own health independently and not allow others to dictate them.

> “Many claim that they were primarily made ill by psychiatry” (Heiner, doctor)

The views of the interviewed nursing staff and the doctors were consistent with these explanations of medication refusal. However, in their understanding, the patients’ different definition of the problem or their doubts as to whether they needed to be treated at all was part of the concept “lack of insight into the illness”. In the eyes of the professionals, this was associated with an impairment of insight into the long-term consequences of an untreated psychotic disorder. According to the interviewees, another reason for noncompliance was patients’ distrust, often in response to previous negative experiences with the health care system. Some interviewees said that sometimes they (or the hospital or the medication) were held responsible for an interrupted or completely destroyed biography. Medication would have made them sick. Accordingly, patients would not want to take it. All professionals also mentioned the changed legal situation. Some said it would encourage the patients’ ambitions to defend their autonomy by refusing drug treatment.

Consequences of Medication Refusal

> “So my mother kept pointing this out to me, take the meds, take the meds, I have not taken them often, there was also quarrel in the family about it…” (Jean-Jacques, patient)

Interviewees in all four groups similarly reported negative consequences of medication refusal or discontinuation. Positive consequences were rarely reported. A few patients claimed to feel more energetic and alive without medication. But even these patients told of negative consequences. They were more often involved in conflicts with others, and others were afraid or did not understand them. In addition, interviewed patients felt at constant risk of being involuntarily hospitalized and subjected to other coercive measures that some had previously experienced. Many patients reported extensively on previous experiences with compulsive medication. They found it humiliating and were worried that this might happen again.

> “…they simply do not function properly out there, they do not get along with their family, their social structures break, they lose their flat, lose their job…” (Andy, doctor)

Apart from the deterioration of the patient’s condition, professionals and family members mentioned the risk

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[1] An extended version of the results and codes can be found in Hüther et al. (17). The appendix including the codes with verbal examples (in German) can be freely accessed at the URL http://www.psychiatrie-verlag.de/buecher/detail/book-detail/behandlungsverweigerung-patientenautonomie-und-zwangsmedikation-1.html.

TABLE 1 | Overview of results.

	Patients	Family caregivers	Nursing staff	Doctors and therapists
Phenomenon	Refusal or discontinuation of medication or complete refusal of treatment	Refusal or discontinuation of medication or complete refusal of treatment	Refusal or discontinuation of medication or complete refusal of treatment	Refusal or discontinuation of medication or complete refusal of treatment
Reasons	Striving for autonomy Conceptualization of the problem and of recovery Medication attitudes and experiences Stigma of mental illness	Lack of insight into illness and need of treatment Negative experiences with mental health care Side effects of medication Living circumstances	Striving for autonomy Lack of insight into illness and need of treatment Side effects of medication Mistrust and allegations against the mental health care system	Lack of insight into illness and need of treatment Lack of insight into the consequences of no treatment Positive experience of symptoms Mistrust and allegations against the mental health care system
Consequences of phenomenon	Negative consequences of lack of medication (self/others)→ symptoms/conflicts Negative consequences of reaction of others → fear and coercion Positive consequences → feeling good	Negative consequences for the patient → deterioration of symptoms, conflicts, use of coercion Negative consequences for family → stress, alienation, deterioration of relationship, frustration, resignation Negative consequences for doctor → helplessness	Negative long- and short-term consequences for the patient (from deterioration of symptoms to social decline and impaired societal participation) Negative consequences for the environment (family, nursing staff, doctors, fellow patients) Negative consequences for ward atmosphere	Negative long- and short-term consequences (from deterioration of symptoms to social decline) Negative consequences for the family
Conceptualization of problem	Involuntary hospitalization Experience of coercive measures (present and past) Fear of impending coercive measures and of being threatened to take medication	Own feelings of helplessness, burden of illness history to the family Negative consequences of refusal of professional treatment by ill family member, especially refusal of medication New burden to the family due to changed legal situation that affects the options in inpatient treatment	Involuntary inpatients needing adequate treatment but refusing to take medication Changed legal situation limiting one's options of professional acting and thus conflicting with understanding of one's professional role and ethics Restrictions in action options leading to conflicts in the ward and to an increase in workload (management of noise, danger, conflicts, etc).	Involuntary inpatients needing adequate treatment but refusing to take medication Changed legal situation limiting one's options of professional acting and thus conflicting with understanding of one's professional role and ethics—opportunity for a change Keeping untreated inpatients on a ward leading to conflicts with fellow patients, employees, and relatives
Goals	Escape the other-directed situation and decide about one's own life again and about how to deal with the illness	Help the family member Get help and find relief for oneself	Provide the patient with adequate treatment to relieve suffering Maintain smooth ward management to make all inpatients feel safe and recover	Provide the patient with adequate treatment to relieve suffering, prevent deterioration, and restore the capacity for self-determination Have available all the necessary measures to do the job in a professionally and ethical way

(Continued)

TABLE 1 | Continued

	Patients	Family caregivers	Nursing staff	Doctors and therapists
Strategies	Cooperative strategies (talking, negotiation, yielding) Confrontational strategies (refusal, insistence, protest rebellion, legal action) Learning to live with and beyond illness Dealing with family caregivers	Coping with illness of the patient (emotionally and cognitively) Coping with stress/self-care Dealing with patient (support vs. control) Seeking and involving professional help → initiation and support of inpatient treatment	Patient-centered strategies (building a relationship, involvement in treatment decisions, individual approaches) Pressure to make the patient take the medication De-escalation Protection of fellow patients Coercive measures Efforts in increasing team cooperation Leaving the patient untreated (increased attention to the need of intervention) Involvement of family members in treatment	Patient-centered strategies (building a trustful relationship, information, negotiation, shared decision-making approaches…) Medication management (balancing risks and benefits of no medication, management of side effects, accompanied discontinuation) Alternatives to medication treatment Alternatives to coercion Improvement of framing conditions in the ward and in the hospital (e.g., rooms, atmosphere, staffing) Involuntary medication Discharge without medication treatment Involvement of family members in treatment
Influential factors	Acceptance of (involuntary) hospitalization Acceptance of medication treatment Former experiences with coercion and medication Relationship with family Relationship with doctor and clinical staff Personality/character	Conceptualization of and experience with illness Knowledge and acceptance of inpatient treatment Experience with and attitudes towards involuntary hospitalization Attitudes towards medication Trust in professional competence Experiences in the psychiatric ward Emotions Economic resources Relationship dynamics within the family Perception of insight and responsiveness of patient	Condition of the patient, character, previous experiences with patient Trustful relationship between patient and staff Personal and professional competences and attitudes of staff members (e.g., de-escalation) Resources at the workplace (e.g., staffing, space) Professional and individual attitudes towards use of coercive measures Ward atmosphere/ward policy Hospital policy	Condition of the patient, previous experiences Society (role expectations, image of mental illness) Attitudes towards use of medication Understanding of their own professional role and professional ethics
Consequences of strategies	Cooperative strategies (taking medication) → compromises achieved, less conflict within family, positive and negative side effects of medication Confrontational strategies → no treatment, experience of coercion in the ward, success in court Not being allowed to leave the hospital → frustration and disappointment Being subjected to coercive measures → frustration, anger, fear; might have been justified; might have been stressful for professionals	Seeking professional help → relief and hope vs. feeling rejected Pressure and control → mistrust in patient, conflicts vs. patient gives in without conviction Efforts to engage the patient in therapy → successful vs. disappointment when repeatedly unsuccessful Support and protection → sometimes stress, sometimes patient rejects support, improvement of understanding between patient and staff	Patient-centered approaches → often successful in engaging patient in treatment Use of pressure → sometimes successful in promoting cooperation, often not sustainable Use of seclusion/mechanical restraint → stressful for staff and patients, harm to therapeutic relationship, subsequent cooperation in some, protection of others Use of involuntary medication → stressful for staff and patients, humiliating, harm to relationship vs. improvement of symptoms Leaving the patient without treatment → stress in staff, patient, fellow patients, and family members	Patient-centered approaches → successful, though time-consuming Use of pressure and coercion → positive and negative effects (improvement of symptoms, restoring ability to communicate vs. traumatization and harm of trust and relationship) Leaving patient untreated due to legal restrictions → no improvement, deterioration, subsequent harm to others, allegations of some patients; conflicting with own professional and ethical norms; frustration and anger in family caregivers and nursing staff

(Continued)

TABLE 1 | Continued

	Patients	Family caregivers	Nursing staff	Doctors and therapists
Others	Mental health professionals → Disrespect patients' autonomy → frustration, powerlessness, humiliation, trauma → Respect patients' autonomy → negotiation → compromise/solutions *Dependent on* → Attitudes towards medication → Understanding of professional role → Interest in patient Family → Pressure → conflicts, blame, mistrust, sometimes (retrospectively) thankfulness → Support → improvement of relationship, thankfulness *Dependent on* → Trust and respect within family (support or control)	Patient → Cooperates → hope vs. doubts → Does not cooperate → disappointment *Dependent on* → Willingness of patient to receive treatment → Inner familiar relationship and trust → Patient's character Doctors and nursing staff → Pressure/coercion → promotes short-term compliance, long-term cooperation questionable, danger of traumatization → Persistence in convincing the patient to engage in treatment → successful → Discharge without treatment → burden for families → Involvement of family vs. too little involvement → relief and increase in knowledge vs. helplessness, feeling rejected, disappointment *Dependent on* → Restrictive legal frame → helplessness in professionals	Patients → Give in and take medication → symptoms improve → Take their rights to refuse/take legal action → enjoy their increased power → negative consequences for ward atmosphere *Dependent on* → Insight and willingness to receive treatment → Trust and relationship with caregivers → Knowledge of legal situation Doctors → Weigh the risk of involuntary medication against the risk of leaving without medication → Take legal action → Involve family members in treatment *Dependent on* → Therapeutic relationship → Changed legal frame Family members → Reproaches to the ward when patient is discharged prematurely → staff feel misunderstood *Dependent on* → Expectations in the hospital to cure the patient	Patients → Negotiate persistently but give in → improvement in symptoms, relief for others → Motivate other patients to refuse medication → negative consequences for ward atmosphere → Take legal actions → Are burdensome for their families *Dependent on* → Willingness to receiving treatment/insight/experiences → Current symptoms and perception of situation → Family members do not set limits Nursing staff → Individual patient-centered approaches to the patient → successful in building of trust *Dependent on* → Individual and professional competences → Previous experiences with patient Family members → Not setting limits to patient → conflicts in the family → deterioration of disorder

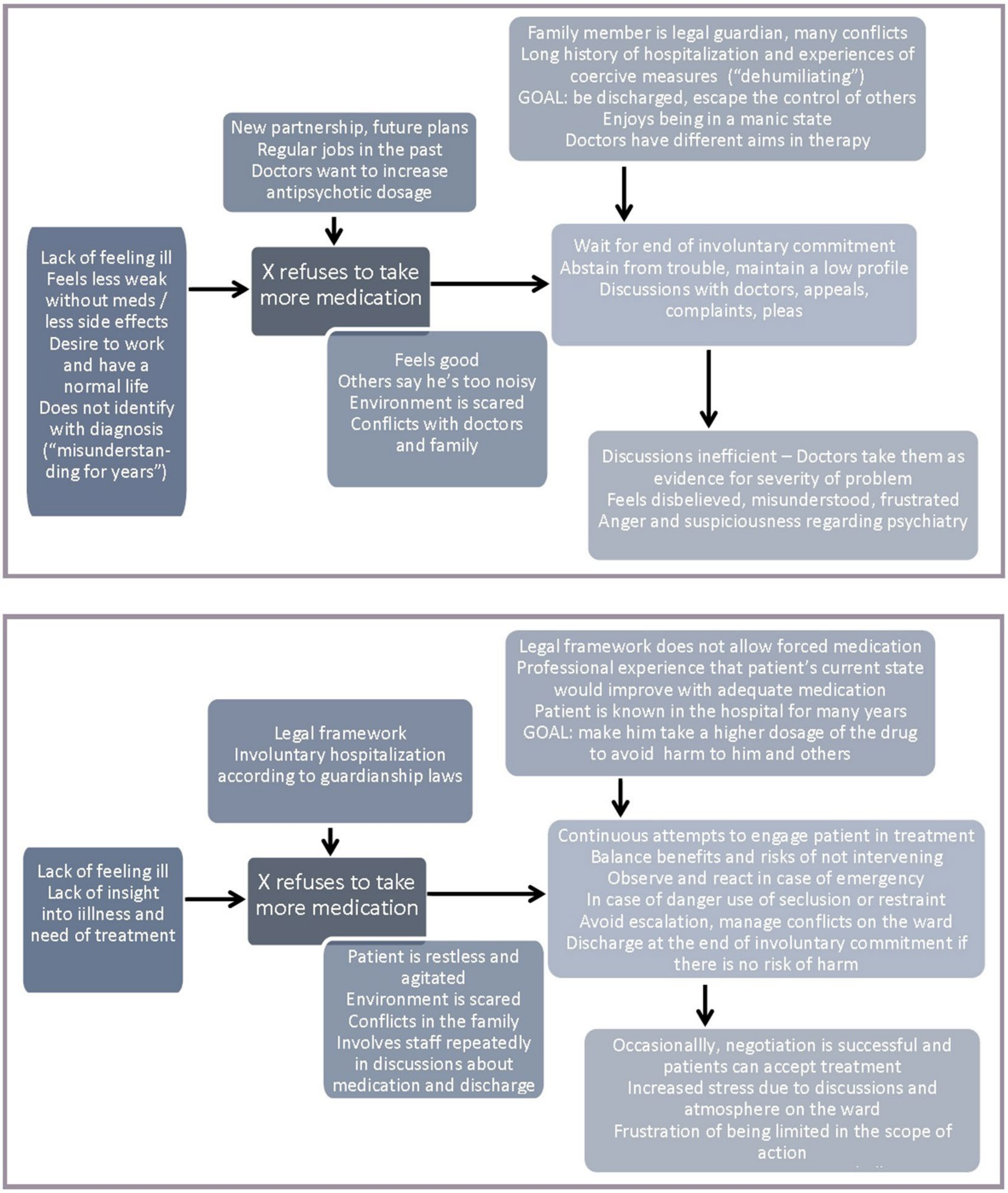

FIGURE 2 | Two typical complementary examples: patient (above) and doctor (below).

of harmful long-term consequences or social decline. Persisting symptoms due to refusal of treatment also had an impact on the social environment of patients, especially with regard to family and friends (loss of confidence, conflicts, worries, resignation, hopelessness, and fears of the future). This was also noticed by doctors and staff in the ward. They reported that the refusal of medication led to longer hospital stays of patients with untreated symptoms. This not only complicated the work of health care professionals but also affected the interactions in the ward, the teams, and fellow patients.

Focus, Strategies, and Consequences

> "But, what's outside, when I'm back at my family doctor's, that's different" (Gertrude, patient)

As actors of the four perspectives had different focuses and different interests, they were also using different strategies and actions to cope with the situation. The patients referred to the involuntary hospitalization, the compulsion to take medications, and the threat of being treated against their will as their main problems. Accordingly, one of their priorities was the question of how to withstand the pressure and escape the foreign-controlled situation. Many actions related to how patients managed to continue to refuse medication and how the staff tried to make them give in. Patients talked about their struggles, arguments, and discussions with doctors, nurses, and relatives to convince them that they needed other treatment, if any (e.g., more talk). Some reported that they had finally given up and taken the medicine, although they were not convinced of the medical benefit. They did it only to avoid the risk of being involuntarily drugged, to increase the possibility of early discharge from the hospital, and to escape the control of others.

All of the interviewed patients were involved in an individual process of weighing costs (e.g., medication side effects or general discomfort with drugs) and benefits (e.g., regaining autonomy after discharge). Some even said that now they were certain that they needed antipsychotic drug therapy to prevent relapse. Finding a way to deal with the disease without making it the center of one's own life has been considered by some as an important step in achieving an inner arrangement. Another line of conflict related to dealing with family members. The patients often followed various strategies to keep their distance so as not to be controlled. This, in turn, was noted by relatives and increased their sense of losing control of the situation, the sadness of losing touch with the patient, mistrust, anger, and worry about the future.

> "I just wish that everything goes well, and hope and trust that someday his insight will come" (Peter, father)

Most of the relatives described feelings of helplessness and talked about their burden of disease, which they often had faced for years without the prospect of change for the better. On the one hand, they reported on how they had tried to support their ill family member for a long time in coping with everyday life and with the disease, through close control or by supporting the patient's desire for independence. On the other hand, the experience of powerlessness was omnipresent.

Families talked about their efforts to engage the patient in treatment, through pressure or empathy and gentle persuasion. They sought help in the professional system. Some initiated involuntary hospitalization and then felt insecure and bad about this step. Following the admission of their family member to the hospital, they tried to stay in touch with doctors or to participate in treatment decisions, with mixed results. Some felt rejected by the professionals, and they missed more detailed information about the treatment process, mainly due to a lack of time. Others took on a mediating role between their family member who refused to speak and the professionals by translating the perspectives of each side to the other, in order to strengthen cooperation between the two. Some families advocated coercive measures and compulsory medication to get the patient into treatment. At the same time, it hurt them, and they felt uncomfortable. An important issue for almost all family members was their own coping with the disease and the current tense situation, and how they tried to take care of themselves (e.g., trying to remember the "real" person with a biography behind the alienated son or daughter, trying to find a healthy distance, seeking support for oneself, struggling for an inner acceptance of the situation, trying to get information and make sense of the disease).

> "This depends entirely on the patient, but the fact that you can treat later will ultimately delay the entire treatment. It takes longer in the end." (Patricia, nurse)

From the doctors' and nurses' perspective, the problem had a different focus: There was a patient in the ward who refused the type of treatment that, according to professional experience, would likely help him or her recover. Due to the changed legal situation, involuntary medication could only be used in an emergency. This led to a conflict between the self-conception of the professional role and the legal restrictions to do what is necessary for medical and ethical reasons. Moreover, not only the involuntary patient with severe symptoms was affected. The staff reported that the situation had an impact on the other patients and on the ward atmosphere in general. On the one hand, the nursing staff tried to increase the patient's motivation to take the medications offered, which included building trust and reducing fears and concerns, and on the other hand, they tried to manage the ward in such a way that the other patients were not too affected and could recover.

The interviewees described their ongoing efforts to individually address the patient, establish good relationships, build trust, and seek a shared solution. Most of the time, such an individual approach proved successful. Furthermore, the staff members explained their strategies to resolve tense situations at the ward, calm down agitated patients, and de-escalate conflicts. They reported on trainings in these practices. They also talked about situations where de-escalation did not work anymore. They attempted to avert immediate harm from the other patients or the agitated patient by using coercive measures such as mechanical restraint or seclusion. These procedures follow a strict routine familiar to every staff member. It was reported that coercive measures were stressful for all participants involved, such as staff members and patients, and there was a general commitment to avoid them. However, some interviewees stated that the experience of coercion was sometimes the starting point for the person concerned to finally allow medication treatment. Good cooperation within the team was mentioned by the members to ensure good and responsible ward management and treatment. Transparent and clear communication within the team was a crucial prerequisite to remain able to act and to avoid team conflicts under difficult working conditions. Although this has always been important, the new challenges of the changed legal situation, in which the use of involuntary medication was very limited, made it even more significant.

> "…and after a few weeks or maybe even after a few months of tough negotiation and staying with it, in almost all cases a consensual treatment planning has emerged" (Ferdinand, doctor)

As mentioned above, physicians faced the same dilemma as nurses—patients who (according to professional knowledge and experience) would benefit from the medication decidedly refused it, and the legal restrictions made it almost impossible to use the necessary drugs against the patient's will. The interviewed physicians reported their efforts to convince patients of drug treatment through various means, ranging from verbal pressure to negotiation, patient-centered communication, and shared decision-making. Preconditions were efforts to build trust and establish a sustainable working relationship. As the nurses had already reported, increased efforts to address individuals individually were considered helpful and promising. However, interviewees pointed out that these procedures were resource-intensive and time-consuming, time that would have to be taken from other patients. Thus, the interviewed physicians described how they weighed the benefits and risks of leaving a patient unmedicated for at least some time, and confined themselves to monitoring the patient more closely in order to intervene immediately in case of deterioration. Some doctors and nurses said it gave them a hard time to wait for an emergency that would finally legitimize the application of the appropriate medication. They all had in mind that it was only one year earlier that there was no doubt about doing what the situation would have required.

When there were no more reasons to keep an untreated patient in the ward involuntarily, doctors sometimes decided to discharge him or her. This, in turn, was a major challenge for relatives who had hoped to get help for their family member and hand over responsibility to the hospital for some time. It was an unsatisfactory and frustrating solution for the doctors, as they expected no improvement in the patient's symptoms without treatment. They pointed to the risk of chronification and increasing functional impairments. The use of involuntary medication was limited to emergencies. In some cases, the doctors said they had tried to obtain juridical permission to use it. They saw the risk of traumatization as a result of coercive measures restricting freedom, such as seclusion or restraint, which could negatively impact the future therapeutic relationship, the willingness to consider medical advice, and future help-seeking behavior. However, there was also the experience that in some patients, the use of involuntary medication was the beginning of a successful drug treatment.

Influencing Factors

> "It has been the purest horror for me, always been, the idea I would have to go back in there, and so I have clearly said to my sister, do not bring me to psychiatry" (Elvis, patient)

The most important influencing factors for the patients were past and present experiences with the mental health care system, experiences with the voluntariness of the admission and the stay, encounters with the actors involved in the admission, encounters in the ward, previous experiences with therapy procedures, and the current therapy offers. Moreover, the acceptance of inpatient treatment and attitudes towards medication (antipsychotics, but also drugs in general) had an impact on how patients responded to attempts to engage them in medication treatment. Other important influential factors were confidence in the competence of the doctor, the impression of being understood, and sympathy. Some patients also attributed their behavior to their individual character. While the interviewees of the other groups described it as "lack of insight," patients who refused to take the medication seemed to be absolutely sure of their decision, even more so since they believed that their problem was rooted in their biography and was different from what the doctors claimed. However, there were also some patients who in retrospect said that now they knew they needed medication to get better.

> "No, but she is no longer herself in that point. I quite understand the whole thing as an illness. I know what she was like before." (Rose, sister)

According to hospital staff and family members, the ability to empathize, understanding, and the quality of the relationship were key factors in interacting with each patient. A major influence on most family members was the experience of a long history of repeated illness episodes with varying degrees of hope and frustration. The actions of family members were often determined by their emotions such as compassion, concern, or anger. But also cognitive factors such as mental health literacy, illness concepts and concepts of recovery, knowledge about the drug treatment, and their own attitude to the use of medication had an impact. Trust in the expertise of the mental health professionals, as well as experiences with inpatient treatment and the impression of the ward atmosphere, also influenced how relatives made efforts or supported others' efforts to convince the patient of the need to take medication. In some cases, economic issues such as financial options also played a role. Some parents reported that their children's economic dependency was an efficient leverage to make them engage in treatment.

> "But this fundamental paternalistic attitude, that is, the idea of my right to treatment is above the personality right of the patient, of course you can't do that" (Angie, doctor)

The interviewed professionals added to the abovementioned factors the actual condition of the patient and the assessment of current and future risk of harm. Nearly all respondents talked about their understanding of their professional roles, role expectations of society, professional ethics, and their professional experience, which guided their behavior and their ideas of what to do. Each clinical practice guideline recommends that patients with a psychotic disorder should be provided with adequate antipsychotic medication. Withholding this therapy would therefore be against good practice.

However, they considered the changes in the legal framework as limiting their options to treat patients appropriately (if necessary, even against the patients' will). At the same time, the change was seen by some interviewees as a catalyst to reflect on the use of coercion in inpatient treatment and to question paternalism-driven long-standing clinical practices and attitudes in treatment. According to the respondents, it has encouraged efforts to improve communication, interaction, and negotiation with patients, aiming for a viable solution and a common decision on the right treatment. Strategies and actions were thus influenced not only by individual and professional attitudes but also by political and societal developments. In addition, some interviewees identified workplace conditions (sufficient staff, ward composition and occupancy, space, ward spirit, etc).

Perception of Others

> "I often get the impression that psychiatrists think drugs regulate everything…" (Jean-Jacques, patient)

The interviewed patients presented many examples of how they felt disrespected during inpatient treatment. Disrespect was perceived when doctors or nurses demonstrated authoritarian behavior, verbal pressure, etc. Part of the problem, according to the patients, was that mental health professionals seemed to be so strongly committed to using medication to treat mental health problems that they would not listen to the patients. However, many patients also recalled other interactions with dedicated physicians who took their time to explain and negotiate therapy options. This made the patients feel respected and accept recommendations more easily. According to the interviewees, it depends on the attitude of the doctor, the understanding of the professional role, and the individual interest to comprehend the needs of a patient holistically. With respect to their relatives, some interviewees reported how they felt supported, and others how they felt controlled and under pressure. Some believed that they were seeing some kind of coalition or conspiracy between their parents and the doctors, leading to mistrust and secrecy. Some patients assumed that their relatives' behavior was motivated by their intention to help. Others suspected ambitions to dominate the patient, or lack of understanding in their family.

> "Nah, my God, just a little bit of explanation. How to help, or what to do." (Antonio, spouse)

The interviewed family members talked in detail about cooperative or less cooperative actions of their ill relative, which they often attributed to his or her character, personality, and biography. Often the stories went back to the childhood of the patients. Nearly all interviewees related current behavior to the patient's history and previous negative experiences with physicians, with inpatient treatment, and with coercive measures. There was a strong desire to examine and understand what had gone wrong in the past and to understand the meaning of the disorder. Some interviewees reflected on their family relationships. They suspected that this also played a role in the behavior of their ill family member. They talked about continued rejection and mistrust of the patient, and how much they were affected. Moreover, they felt ashamed and disappointed with regard to some of the patient's behavior, and they were mostly worried about the future.

With regard to the professionals' actions and strategies to get the patient engaged in treatment, the family members had made varying observations—staff members who were very committed and interacted empathetically with the patient and staff members who were overworked and not responsive. As a consequence of the changed legal situation, some patients had been discharged prematurely when they were no longer at risk of harming themselves or others. The families found this an additional burden, especially as they had hoped to hand over responsibility and get help. A father concluded that obviously, the doctors were powerless, too. In addition, many family members complained that they were not involved in therapy decisions. Some missed getting a basic understanding about the disorder, the treatment, and the proceedings in the ward. They reported their experience that doctors or staff did not have enough time to talk to them and respond to their questions and concerns. The use of coercive measures was perceived as a double-edged sword. On the one hand, family members noted a short-term improvement. On the other hand, they reported that the effect was unsustainable and had not changed the insight, and because of this experience, patients were even more negative regarding compliance with treatment recommendations.

> "Then it's hard for the relatives, because they actually bring them to get them cured so they can live outside" (Johanna, nurse)

Health care professionals talked mainly about the changed legal situation and its consequences for inpatient care, ward management, and ward atmosphere. Agitated, involuntarily hospitalized patients who resisted treatment were perceived as a major challenge for ward management. The recovery of other inpatients was affected by an excited and restless ward atmosphere. Many discussions and the need for permanent observation and spontaneous intervention to avert harm had resulted in exhaustion of personal and professional capacities. In both groups, doctors and nursing staff, some interviewees also talked of the burden on family caregivers. Some reported that they were accused of not doing enough, e.g., discharging the patient prematurely. For the interviewees, this was a frustrating situation. One nurse put it this way: "They just do not understand that our hands are tied."

Perception of the Legal Situation

> "And the flip side of the matter is, so to speak, that nobody cares anymore" (Amanda, doctor)

Few of the interviewed patients had even noticed that the legal situation had changed. Most said they had not heard of it, or they said they did not care. However, some of the family members said they had been informed by the nurses or doctors. The prospect that their relatives could not be treated according to the state of the art or might even be discharged prematurely without adequate treatment made them feel desperate, helpless, and alone.

Most nurses reported how much the legal situation had changed their daily work, i.e., more violent incidents, an increase of seclusion and restraint, the loss of an important lever to increase motivation to take medication, conflicts in the teams, and an overall increase of workload. Ward management and efforts to ensure safe conditions for everyone took up a lot of resources. In their opinion, the loss of the option of involuntary medication ultimately harmed the patients and their families. Nevertheless, some nurses were positive about the situation. They saw this as an opportunity for overdue critical reflection on coercive practices, routines, and attitudes in contemporary psychiatry—everyone was literally called upon to strive for more focus on the individual patient and had to be creative in getting patients to cooperate in treatment. In some cases, however, legal certainty and new laws would be required to allow coercive medication under certain conditions to increase the scope of action.

The doctors reported the same problems with ward management as the nurses. The ward atmosphere and the working conditions were impaired. There was much frustration about being hindered from treating patients who obviously needed medication to get better. They emphasized the negative consequences of the temporary ban on involuntary medication for their patients, their families, and society. But in this group, too, we gathered voices that welcomed the situation as a decisive push to overcome paternalistic structures and routines in psychiatry.

DISCUSSION

The study was conducted under very unique conditions, namely, the unusual legislative framework for involuntary treatment. Patients could refuse treatment despite being involuntarily hospitalized. Our aim was to explore by the means of a qualitative analysis how representatives of each of the four involved groups experienced the refusal of medication under these conditions, what kind of problems they were facing, and which solutions emerged. In this special situation, we had also implicitly hoped to learn about alternative reactions to the well-known problem of medication refusal.

We can summarize three main findings: 1) The change in the legislative framework was perceived completely differently and had a different significance in the four groups. 2) The patients' and family members' views on medication refusal during involuntary hospitalization were characterized by a biographical, individual perspective. In turn, doctors and nurses shared a professional, medical, and situational perspective. The divergence of perspectives had an impact on problem definition, goals, and solutions. It was a serious obstacle to mutual understanding. 3) According to the interviewees' reports, continued efforts to address the patient individually, to improve the relationship, and to have respectful communication on equal terms might contribute to make the patient engage in treatment and to avoid escalation in the ward—at least in some cases. On an organizational level, professionals were positive about questioning and rethinking coercive practices in psychiatry, but they also hoped for a timely revision of the legal framework, allowing a wider scope of action again.

We were surprised to learn that only a few of the interviewed patients had even realized that they could refuse medication treatment without having to worry about forced medication. This was in contrast to concerns of the mental health professionals that some patients actually abused their new liberties. The real concerns of the patients were related to the involuntary hospitalization, the associated restrictions, and how to regain control of their own lives. It is known that the perception of coercion is higher in involuntarily than in most voluntarily hospitalized patients (18), and that it is of particular importance in involuntarily hospitalized inpatients to stay in control and maintain a sense of autonomy (19, 20). As expressed by our respondents, too, perceived loss of autonomy went hand in hand with a more negative relationship between the patients and the clinicians (21). Often enough, along with the situation of involuntariness, unpleasant memories of previous hospitalizations and coercion experiences emerged (22, 23). During the involuntary hospital stay, coercion was a permanent latent menace. The ban on involuntary medication was probably not perceived as a real change, since the other measures like seclusion or restraint could still be used. Family members confirmed the patients' experiences and concerns, but they also reported how much they had hoped to find help in the hospital. Some advocated for the use of coercion, if necessary. The legal changes only played a role when families were disappointed to hear that professionals felt hog-tied and they feared a deterioration of the patient.

In contrast, nurses' and doctors' interviews focused mainly on the consequences of the changed legal framework and the manifold related problems. These included concerns that patients might not recover without medication, problems with ward management due to increased aggression, reflections on societal consequences, and inner conflicts of not being able to practice in accordance with professional values.

In fact, during the ban on involuntary medication, there had been a considerable increase in aggressive behavior and in the use of seclusion and restraint, seclusion in particular. As our respondents already reported, suspension of involuntary medication was compensated for by other coercive measures. After the new legislation was set into practice, their numbers decreased again. The laws allowed for involuntary medication again, however, with strict requirements (5). It is hard to determine the exact decline in involuntary medication, because there are no systematic assessments of the prevalence in Germany before the legal framework had changed. According to estimations in the early 2000s, 2% to 8% of all admissions were affected (24). A study in 32 hospitals in Southern Germany in 2016, i.e., after the change, found that involuntary medication affected 0% to 2.5% of all admissions (median, 0.4%) (25). It is difficult to compare the data across hospitals and countries because the frequency of the use of different coercive measures varies considerably across countries due to different laws and cultural sensitivities (26, 27).

While the doctors' and nurses' perspective was focused on exacerbating symptoms and the management of unmedicated patients, the patients and their families experienced the situation within a biographical frame characterized by reports of individual illness history, family background, and previous experiences. There was no evidence that refusing medication was intentionally continued during hospitalization as a consequence of the changed legal situation. There are a multitude of reasons for nonadherence in schizophrenia patients that have been studied so far (28). According to their interview study in patients with schizophrenia, Gibson et al. (29) interpret nonadherence as a kind of patients' treatment choice in order to live well in response to day-to-day challenges of ordinary living. This provides a good description of how our interviewed patients dealt with the medication. Within the biographical context, it appeared more like the result or style of individual coping with the disorder and of the patients' definition of the "real" problems that had to be fixed (e.g., trauma, conflicts, depression, no job). Mental health professionals might think of the potential long-term harm of untreated psychosis, particularly in first-episode patients (e.g., 30). However, our interviewees perceived the professionals as being virtually obsessed with medication treatment. Some asked if the doctors had nothing else to offer. Although not elaborated, their expectations of an adequate treatment to their problems were somehow different, and patients felt put off with (in their view) a simplistic solution: pills.

Doctors and nurses, in turn, were striving to act according to professional competences and experiences as well as to professional ethics. To deny a patient a medication that might help and prevent harm is perceived as contradictory to the ethical values of beneficence and non-maleficence (31). In this regard, the concept of "poor insight into illness" is often used as a rationale to override the patient's will ("if he had some insight, he would see the need for treatment"), and to use involuntary medication to restore insight. It might be favorable for the doctor–patient communication to query the conception of poor insight as an all-or-nothing characteristic or just a symptom. For example, in their comprehensive review, Lysaker et al. conceptualize it "not just as the consequence of a failure to notice a problem, grasp a fact or accept a label, but as a failure to make consensually valid sense of complex and potentially traumatic experiences" (32) (p. 18). This approach suggests that it is not enough to rely on education when dealing with poor insight or hope for natural improvement of insight by medication interventions. What is needed is assistance in a fundamental integration process. Effective treatments might target the metacognitive processes involved in poor insight, i.e., guide people with serious mental illness to reflect and make personal meaning of experiences of mental illness (32).

Finally, the relatives seemed to be caught in the middle. They had a biographical perspective, but they were also caregivers who had acquired some health literacy. They struggled for empathy with the patient but also to keep a healthy distance and learn about the disease. Schizophrenia in a family member is a massive burden on family caregivers (33, 34). Many of our respondents were at the end of their strength, and involuntary hospitalization offered some kind of relief and hope. However, their expectations were only partly met by the professionals, whose limited scope of action led to disappointment and irritation. Similar to other studies, caregivers rated involuntary hospitalization as less invasive than patients (35, 36), although there were also concerns about the right treatment of their family member. As has been described in other studies, a delay in receiving help resulted in conflicting emotions and frustration (37). The proceedings in the ward were often perceived as intransparent, especially when professionals apparently did not take the time for communication. The changed legal conditions challenged the families' confidence in institutional help even more, in particular when patients were discharged without medication. In those cases, even when they expressed their understanding of the doctors, the family members felt powerless and pushed around without a say.

The interview study in this specific setting highlighted the increased pressure on staff members and families when the usual routines had become inoperative. With regard to discovering new practices and solutions in this changed situation to avoid coercion, our success was as limited. The respondents referred to practices to promote de-escalation that are already described in literature, such as efforts to calm down the patient by communication, increase trust, and establish a working relationship (38–40). Patients indicated they were more likely to cooperate in treatment when they had the impression they were taken seriously and when others refrained from authoritarian behavior. In the first place, it might be helpful to acknowledge the patients' different perspectives and their conceptualization of the situation at each point in the coercive process (41). According to other studies, successful communication with inpatients is supported by a focus on the patient's concerns, positive regard and personal respect, appropriate involvement of patients in decision-making, genuineness with a personal touch, and the use of a psychological treatment model (42). These ingredients for improvement of cooperation were also reported in our interviews with nurses and doctors. Even though the loss of the lever of involuntary treatment was regretted by some of our respondents, it is also perceived as a chance to work on doing the job differently and to engage in the transformation of a psychiatry that can refrain from coercion.

The ban on involuntary medication had caused many discussions on the wards. It might have increased self-reflection, and it definitely challenged the routines, procedures, and attitudes in the mental health care system. As a consequence of the changed legislation in the federal state of Baden-Wuerttemberg, it has been mandatory since 2015 to collect data on coercive measures in psychiatric hospitals and to supply these data to a central register (25). Although coercive measures are still in use in psychiatry, this register allows monitoring possible changes and evaluating interventions. Moreover, there is more transparency for the public. Since former coercive experiences rest in the patients' memory for a long time, it is indispensable to provide the nursing and medical staff with the necessary guidelines for dealing with coercion and aggression in the least harmful way. One of the newest guidelines includes a systematic collection of possible single or complex interventions that all have proven to be successful in reducing aspects of coercion (38). These are only some steps to improve the situation, and of course, there also has to be a general change in treatment culture. The vast amount of literature and current research on coercion underlines the universal need for a change.

LIMITATIONS

The study has several limitations dealing with methodological issues: We had chosen an approach of theoretical sampling in order to assess as many different aspects of the problem to be investigated as possible. However, due to technical reasons, the sample was mainly recruited in one hospital, and only a few additional voices from the outside were intentionally selected to enrich the sample of views (13). The study would have profited from taking a broader perspective in recruitment, i.e., other hospitals with different working styles or common experiences.

Regarding the patient sample, it has to be noted that our interviewees were seemingly able to give informed consent and understand the aim of the study. In line with Carpenter et al. (43), we saw no reason to exclude people who were impaired by their disorder in some of their capabilities but were perfectly able to understand the study. A few interview partners showed formal thought disorders like perseverations or tangential answers, which impeded the analysis in some texts. However, one crucial shortcoming of the study was the fact that we were not able to talk to patients who were currently deeply absorbed by delusions and distorted perceptions of reality. Of course, these would have been exactly the patients who were the main target of professionals' intentions of using involuntary medication in order to restore their ability to make responsible decisions.

There are other sampling issues: The majority of the interviewed nurses and all of the interviewed doctors were male. Thus, a specific female professional perspective is definitely missing. Moreover, the very heterogeneous reports in the group of the family members indicated that we did not reach theoretical saturation in this group (13). Besides, for technical reasons, the period for searching for interview partners was limited; thus, we did not include additional interview partners after a primary analysis. This would have been necessary to verify our results by new text content.

Another problem was changes in the legislation during the period of the interviews. From February 2013 on, it was again allowed to use involuntary medication according to the law of guardianship, after juridical approval with high requirements concerning the procedures. Part of the interviews was conducted after this reform. The concerned interviewees reported retrospectively about the situation, and this limits the comparability with the interviews before the change.

We decided to use a research paradigm (13) as a heuristic tool for finding and structuring the multitude of aspects in the texts. As a so-called central phenomenon, we defined the issue that appeared in all interviews: refusal of medication. By this approach, we limited our analysis deliberately to aspects of medication treatment. However, refusing medication had a different significance among the different actors and in the reported chains of action, which is reflected in the results. A different approach for obtaining equally meaningful results might have been the identification of core concepts in the different perspectives (e.g., constructions of recovery).

CONCLUSION

The temporary ban of involuntary treatment during inpatient treatment has led to many discussions among practitioners about how to control and manage the situation. Although there were no new solutions to the problem of patients refusing medication treatment, our study shows that it is indispensable to be aware of the fundamentally different perspectives of mental health professionals, inpatients, and family caregivers. Efforts are required to implement collaborative structures and client-centered approaches as well as a critical reflection on usual practices and attitudes, while not losing sight of the burdened families. Reconciliation of the diverging perspectives seems to be difficult but not impossible. It is all about relationships and communication.

ETHICS STATEMENT

The study started only after the aim of the study and its procedures had been described in detail to the participant and after he or she had given written informed consent. Confidentiality and anonymity were ensured by pseudonymization already during transcription. The study's design and procedures were approved by the medical ethics committee of Ulm University (appl. no. 44/13).

AUTHOR CONTRIBUTIONS

SJ, FH, and TS designed the study and wrote the protocol. FH conducted the interviews. SJ and FH undertook the analysis. FH wrote her doctoral thesis on the study. SJ wrote the first draft of the manuscript based on this thesis. All the authors commented on the manuscript. All the authors contributed to and have approved the final manuscript.

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Trust and Community Treatment Orders

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There are conflicting views about the benefits of community treatment orders (CTOs) for people with mental illness. While there is a significant literature on the coercive nature of CTOs, there is less on the impact that CTOs have upon trust. A recovery-oriented approach requires a trusting therapeutic relationship and the coercion inherent in the CTO process may make it difficult for trust to be built, nurtured, and sustained between workers and patients. Our aim was therefore to examine the role of trust within the CTO experience for mental health workers and patients on CTOs.

Methods: We conducted a thematic discourse analysis of 8 in-depth interviews with people who were currently on a CTO and 10 interviews with multi-disciplinary mental health workers in Adelaide, Australia (total N = 18 interviews). The interviews were coded and analyzed with the assistance of a patient representative. The findings reveal the challenges and opportunities for trust within the coercive relationship of a CTO.

Findings: We found that patients have diverse experiences of CTOs and that trust or mistrust played an import role in whether or not they found the CTO beneficial.

Keywords: community treatment orders, vulnerability, trust, recovery, engagement (involvement)

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> I can have different kinds of trust: that you will treat me fairly, that you will have my interests at heart, that you will do me no harm. But if I do not trust your word, can I have genuine trust in the first three? If there is no confidence in the truthfulness of others, is there any way to assess their fairness, their intentions to help or to harm? How, then, can they be trusted? *Whatever* matters to human beings, trust is the atmosphere in which it thrives. (1, p. 31)

Bok points out that there are many kinds of trust and that they are fundamental to human relationships and value. As she observes, the principle of veracity, or in other words the obligation to tell the truth and keep your word, is the foundation upon which other forms of trust are built: if you cannot trust someone to tell you the truth and keep to their word, then that undermines the other kinds of trust that you can have in someone. This is a prerequisite for healthy interactions with other human beings in our homes, neighborhoods, and community, and it could be considered a fundamental need—on a par with physical safety.

When we appreciate how central trust is to all human interaction, it raises questions about how and whether trust can thrive within a relationship that was instigated by a Community Treatment Order (CTO). The participants in our study were based in South Australia and reflected upon their experiences of CTOs as they are implemented by that state's 2009 Mental Health Act (2). Many Commonwealth jurisdictions, such as England and Wales, Canada, New Zealand, and other Australian states, have CTO regimes. While there are differences in the powers that CTOs enable, how they are authorized, and how they fit within other mental health legalization, what they have in common is that they provide a legal authority whereby involuntary mental health treatment can be administered to patients in the community (3). Many jurisdictions have legislation that enables involuntary mental health treatment in the community, although in the United States and some European countries CTOs are called Outpatient Commitment schemes (4, 5).

From a patient perspective, CTOs give mental health workers the power to coerce, and indeed force, them to have treatment that they do not want. This situation creates vulnerability, and while vulnerability may in some contexts provide a foundation for the extension of trust, it can also create power imbalances that make it difficult for trust to thrive. From a mental health worker's perspective, the fact that a patient is being treated *via* a CTO implies that they cannot be relied upon to comply with proposed treatment, do not understand what their treatment requires, and do not have insight into their illness nor understand why treatment is appropriate. These factors may lead to the conclusion that a patient is "not trustworthy" with respect to treatment or "worthy" of the power to choose freely. While any care plan formulated as part of a CTO should be based around the preferences of the patient, it is an order imposed by the state that provides the power to coerce a patient into receiving treatment in their own home. When we think about how trust forms and functions within our personal relationships, with our friends and family, these seem quite different from how trust functions within a therapeutic relationship that is not chosen.

Rights-based mental health legislation emphasizes the importance of a recovery-oriented focus, meaning that everything done should be done with the end of facilitating the recovery of a patient with a mental illness (6–9). Given that a significant element of recovery from mental illness is restoring the ability to take control of one's life, there is a tension in being coerced to accept treatment that someone else thinks will aid your recovery. There is, therefore, the paradoxical possibility of restricting a patient's autonomy *via* a CTO with the therapeutic purpose of nurturing their autonomy. The effectiveness of CTOs in facilitating recovery has also been extensively reported on and some report that there is insufficient evidence for believing they are any better at improving quality of life than voluntary care (10–13).

While "coercion" is an important issue for mental health and was emphasized in the 1960s by antipsychiatrists such as Szasz (14), it is only in more recent years that there has been broader study of its impact and extensive discussion in the literature (15–18). This literature indicates that coercion exists on a spectrum from encouragement and persuasion to threats (17) and that coercion always requires careful and sound justification.

There is also a growing literature on the coercive nature of CTOs (19–22), much of which expresses reservations about whether the coercive nature of CTOs will be helpful to all patients, whether CTOs may, in fact, cause more harm to service and treatment engagement, and whether alternatives to CTOs might be possible and preferable for some patients. However, other qualitative studies have found that the safety net or "safeguarding" elements of CTOs are valuable for some patients (19). Recent qualitative studies from Norway (5, 23) and the UK (24) have confirmed that patients experience CTOs as coercive but found that there is no single patient or health care worker view about CTOs.

One aspect of the CTO process that remains underexplored in the literature is the impact of CTOs on trust between patients and workers. During the coding of 18 qualitative interviews with psychiatrists, community mental health case managers and patients from South Australia, trust emerged as a key theme. This paper explores how discussions of trust were used by the participants to explain their experiences with the CTO process. Based on the research data presented in this paper, we examine how CTOs create particular challenges for the creation and maintenance of trust, which is problematic since trust is an essential component of the empowerment required for a recovery-oriented approach (25).

We found that the different forms of trust that Bok distinguishes featured in the views of some participants: trust in someone's word, trust that you will be treated fairly, trust that you will do me no harm, and trust that you have my interests at heart. These forms of trust were both present and absent in the interviews, and in the final section of the paper, we explore the implications of these findings by considering theoretical work on the preconditions of trust. We will show how there can be a relationship between vulnerability and the need for trust. At an interpersonal level, trust requires, in addition to veracity, the belief that a person will take into account our interests. We conclude by suggesting that what makes trust possible implies ways forward for those trying to nurture trust within the context of a CTO. Some patients were able to trust partly because they believed that their health care worker was being honest and open with them. Some others enlisted the support of health care workers not involved in the CTO process and that enabled a different perspective upon care. Conversely, some of the patient participants who did not trust their mental health worker thought they were not being spoken to honestly, that their interests were not viewed as that important, and that what they said was not heard or believed.

METHODOLOGY

This paper reports on a subset of findings from a broader qualitative study of patients' and workers' experience of CTOs. Qualitative interviews were chosen as the main method of data collection because they allowed deep examination of the understandings of the research participants, and revealed the meanings that participants applied to their experiences of the CTO process. While analyzing the interview data from the broader study, the researchers found that participants frequently referred to trust, a lack of trust, or compromised trust, and the researchers noticed that perceptions of trust appeared to motivate particular types of actions or levels of engagement by patients and workers during the CTO process. This paper explores the dynamics of trust within the qualitative interview data collected from patients and workers.

SAMPLE AND RECRUITMENT

Patient participants were women and men, aged 18 years and over, living in Adelaide, South Australia. All were patients of the State-funded clinical mental health services, currently on a CTO and beyond the first 6 months of the CTO, recruited *via* their mental health community case managers who determined their ability to provide informed consent and not pose any risks during the interview. The researchers provided information about the study in a presentation to the community mental health team who were then asked to identify potential patient participants from their caseloads and provide them with an information sheet and consent form. This method of recruitment may have introduced some bias, with workers perhaps more likely to refer patients who would report positive experiences. However, the data collected from the patients reflected a mix of positive and negative views about a range of topics, as well as a diversity of CTO experiences, so the authors are confident that the findings were not impacted considerably by selection bias. In order to limit the influence of the referring workers, and to facilitate patient autonomy, in most cases, the patient participants contacted the lead researcher independently of the case manager. This also helped to ensure anonymity of their participation. In a small number of cases, the patient participant was happy for the case manager to provide their contact details to the lead researcher. The lead researcher then contacted the patient participant to arrange a time and place to meet to conduct an interview. All patients were advised that they could withdraw at any time during the study and that this would not be divulged to their case managers. The exclusion criteria for the patient interviews were:

- intellectual or cognitive disability that renders the person unable to provide informed consent;
- current suicidality or other risk as determined by the mental health services; and
- case-note alert signifying two-person contact was required.

Overall, nine patients were asked to participate in the research; eight accepted and one declined.

Mental health worker participants were drawn from the professions of psychiatry, nursing, occupational therapy, and social work, that is, they were either community treating doctors or community case managers. The worker participants were all currently employed for 5 years or more. This was important to ensure an established degree of experience and involvement in CTO applications and administration. They were recruited *via* a general email sent to the service's clinical lead for distribution to staff. The workers all contacted the researcher directly, and information about their participation was not shared with their employer or colleagues. This supported data quality by ensuring that the workers felt able to freely express their views without their employer knowing what views they had expressed. Overall, 10 workers contacted the researcher and all agreed to participate.

Permission for the study was obtained from the clinical and service directors for region's mental health services. Ethics approval was granted by the SA Heath Human Research Ethics Committee.

DATA COLLECTION

An interview guide informed by a literature review was developed in consultation with a project reference group (see **Box 1**). The lead researcher, who conducted all interviews to ensure consistency, is a mental health patient advocate (someone with direct consumer and family carer lived experience of mental illness) and has over a decade of experience as a mental health worker. A patient with experience of CTOs was a member of the research team from its beginning.

The research was explained, informed consent was confirmed, and a consent form was signed by all patient and worker participants prior to commencement of interviews. For patients,

BOX 1 | Interview Guide

Workers

1) Describe what you think of CTOs for people with mental illness. Benefits? Concerns?
2) Describe your own experience of delivering treatment and care to patients on a CTO.
3) What factors do you consider in determining the level of involvement of the person and their decision-making capacity when applying for a CTO and/or providing treatment and care during the time that they are on a CTO?
4) Describe your experience of the Guardianship Board hearing process and of applying for a CTO, or providing input to an application to the Board.
5) What types of support do you provide to patients while they are on a CTO?
6) Are there circumstances that prevent you from providing the support you would like to provide to patients on a CTO? Explain.
7) What do you perceive as the impacts for patients of being on a CTO? Benefits? Problems? Impacts for you/the service/others?
8) Are you involved in the development of mental health care plans for patients on a CTO? If so, your experience of these and processes followed? Client copy? How often reviewed? Your perception of what patients think about them?
9) How could MH services improve how they provide support to people on a CTO?
10) Do you have any other comments to make about your experience of providing treatment and care to people on a CTO?

Patients

1) Describe how you came to be on a CTO. How long? Others? Recollections of interactions with mental health staff and Guardianship Board hearing?
2) Describe your experience of receiving contact with MHS since being on a CTO. Case manager? Psychiatrist? Other support people?
3) Describe the level of involvement in making or sharing decisions about your treatment since being on a CTO. Examples? How you felt about this?
4) Describe the level of involvement in making or sharing decision about other parts of your life since being on a CTO. (e.g., Psychosocial support needs). Examples? How you felt about this?
5) What support does the mental health case manager provide to you as part of their contact with you?
6) What do you perceive as the impacts for you of being on a CTO? Benefits? Problems?
7) Do you have a mental health care plan? Your view of it? Have you seen it/got a copy? How often is it reviewed with you? Your involvement in its review?
8) Do you feel that your life has changed since being on a CTO? Why? Why not? If so, what has changed?
9) How could mental health services improve how they provide support to people on a CTO?
10) Do you have any other comments to make about your experience of being on a CTO?

interviews occurred in their home (n = 4), a public location where the patient felt comfortable (n = 2), or the lead researcher's office (n = 2). All worker interviews (n = 10) occurred in a private office at their service during their usual working hours and at a time convenient for them. All interviews were audio-recorded with consent, and professionally transcribed to ensure accuracy of the data, except for two patients who requested that an audio-recording device not be used. Perhaps coincidentally, these two participants also chose to undertake the interview in a public location away from their home. They were happy for the researcher to collect them from their home and return them there after the interview. Extensive notes were taken during the interviews with these participants. Trust increased during the course of the interviews, and the lead researcher was invited into the patient's homes following the interviews. Due to the potential to discuss highly sensitive information about their experience of being on a CTO or administering a CTO, participants were offered support to link with existing supports or services (e.g., Case managers for patients or Employee Assistance Program for workers); however, none reported needing this assistance.

Following the interviews, all participants were provided with the opportunity to view and verify the accuracy of the interview transcript/interviewer notes and to further reflect on or edit their comments. Two participants (Jenny and Joan) took the opportunity to review their transcript, and the changes they made were minor, relating mainly to correcting expression and expanding on their comments. One participant, in particular, provided a detailed letter accompanied by extensive artwork to the lead researcher, re-emphasizing the points that they had discussed during their interview. Aspects of the transcripts relating to trust were not edited by any of the participants. The researchers met routinely to discuss the meaning of the data as interviews proceeded. Where possible, these sessions were audio-recorded to capture the dialogue. Reflective notes were made after each interview to capture the context of the interview and to record the interviewers' observations.

DATA ANALYSIS

Initially, the researchers performed open-coding of four randomly chosen interview transcripts (two patient and two worker transcripts), independently of each other. They then met to discuss and debate their assigned codes to establish an agreed coding framework. At this point, it was determined by all researchers that trust had emerged from the data as a key theme, and trust was included within the coding framework as a focus of the analysis. For the purposes of coding, we viewed trust as "the firm belief in the competence of an entity to act dependably, securely and reliably within a specified context" (26). This concept of trust was used to code all remaining interviews with the assistance of NVIVO 10 software. Following an initial round of open-coding where relevant segments of the patient and worker interviews were grouped under the broad theme of "trust," selective coding was then applied. This involved close examination of the data to identify key themes in participants' discussions, to explore how trust or a lack of trust motivated particular actions and thoughts, and to tease apart differences and similarities in how the workers and patients understood trust during their engagement with CTO processes As such, the coding process involved applying a constructionist lens, which helped to understand the meanings applied to trust, and how trust dynamics influenced the interactions between patients and workers (27). Once approximately three quarters of all interviews were coded in this way, the researchers met again to discuss and determine core and sub-themes relevant to the patient and worker interviews. Some of these themes were the same across both sets of interviews, while other themes were relevant only to either the worker or patient interviews, which reflected important differences between the perspectives expressed. The member of the research team with patient experience of CTOs provided critical comments that were incorporated into the coding of the interviews and the interpretation of the data. Once all interviews were coded, the research team met again to finalize the themes. As this was an exploratory study in an area that has not been researched before, we were not aiming for data saturation. Several of the themes that were developed during the analysis have been used as subheadings within the findings section.

FINDINGS

Trust emerged as a rich and complex theme. It was clear that several patients derived benefits from being on a CTO, and it appears that, for some, such benefits increased their trust in the potential for the CTO, the system, or particular workers to help them. In the following, we summarize the main trust-related ideas that emerged from the coding. Pseudonyms have been used for the patients and workers.

THE COMMUNITY TREATMENT ORDER BEING BENEFICIAL AND HOW THAT MIGHT INCREASE TRUST

A number of patients who found the CTO to be positive commented upon the way in which communication had occurred.

> He's got a way of kind of reflecting things, simple truths back to me; he won't kind of over-exaggerate a simple truth.
>
> *Thomas*

This observation resonates with the work of Sissela Bok, who highlighted how feeling that you are being told the truth is the bedrock upon which other forms of trust are built (1). Other patients spoke about how they had confidence that those caring for them would look after their broader needs and also be there if their condition worsened.

> C was very good, like, getting my clothes and paying my bills and keeping on top of that.
>
> *Joan*

> You know, knowing that if you do get sick and that you guys can realise hey you've gone off your meds and that and you're getting sick and that, you have that you know hey we can grab you and bring you in and you know get you back and on the right path again.
>
> *John*

FORCED CONSULTATIONS: IMPLICATIONS FOR TRUST

Conversely, the CTO process forced some patients to see particular workers even if these workers did not meet the needs of the patients. Mistrust emerged as a key theme during discussions of such forced consultations. Patients reported mistrusting whether the worker they had been forced to see would represent them with honesty and genuine regard for their needs: the inverse of two of Bok's kinds of trust. An example of such mistrust was expressed during a discussion about communications with the Guardianship Board.

> I did not last session but the session before, and I've been told I have to see him, and I don't want to see him. I don't know why he treats me like that, why he makes false statements about me, and I'd prefer to see Dr Andrews … I've written to the Premier again and the Minister of Health and I've said, look, Dr Ball is angry at me, he makes vicious cruel statements about me, and nothing's been done.
>
> *Joan*

This observation suggests that withholding trust and casting suspicion on the true intent of the worker is one strategy a patient can use to retain some control within an otherwise disempowering situation, where the removal of choice and autonomy may threaten the safety of the patient. The expression of suspicion also appears as a tool that allows the patient to distance herself from the worker and from the version of reality being described by the worker because she considers them potentially unsafe. As such, maintaining distance through withholding trust is about the only strand of control/power left available to the patient.

This highlights the use of trust or mistrust as an expression of control for otherwise disempowered patients within the CTO process and as a tool that patients can use to mediate their interactions with a coercive system. The perception that a worker could not be trusted to tell the truth about the patient was nested within a set of other experiences about the care given while on the CTO.

> I don't understand, I never will. I never will understand why the CTOs, why the false statements, why no counselling, talking to me, why the anger, why the vicious cruel statements - I'll say that again—but I'll never understand…
>
> *Joan*

COMMUNITY TREATMENT ORDERS AND AN ENVIRONMENT OF DISTRUST

Some patients experienced what seemed like a near-complete exhaustion of trust in the institution and workers acting under their CTO. They described experiences in which they felt adrift and unable to exert any influence over their care.

> It's a complete breakdown in trust.
> I felt exhausted, as if I'd asked for the world.
> Didn't know who to trust. Staff were split over the way I was being treated. Some would support me and others didn't. They would tell me what they thought about each other and were split opinions over the quality of care I was receiving. One said to me "They treated you like shit"… Re KW—I won't be in the same room with her on my own. I can't trust anything she says. She twists my words and actions. I'll only see her if my friend is also present now.
>
> *Jenny*

While for some the experience of a CTO was one where they were being coerced into having treatment that they did not want, they viewed communication within that coercive relationship to be important and they would try to initiate it. One patient tried to initiate communication and trust, even if it was just so that the mental health worker understood what the coerced treatment they were offering was like for that patient.

> I don't want her to come, but at the same time I want to be able to be - you know, to be able to tell them how the drug's affecting me, because they've put me on this drug. I think now they have an obligation to listen to me how it's affecting me since they put it on me and therefore against my will.
>
> *Jenny*

For some patients, the exhaustion of trust not only was about their relationship with a worker but also was connected with a broader view about the institution that enacts CTOs and the assumptions within it. They viewed the structures behind CTOs as coercive and saw this as a violation of their autonomy over their life and home.

> I associate her with, I call it the Mental Sickness Industry. I associate her with that. I associate her with trauma. I had the police come around to my house once and they were hassling me, the Mental - I call it Mental Sickness Industry, that's what I call it. They were harassing me about taking medication and drugs and stuff because I didn't get to an appointment because - and basically, she was there and so I associate her with that and I associate her with being violated in my own home. Like, I'm happy to have you in my home because you asked permission, you didn't force your way in here. You respect my autonomy…
>
> *Jenny*

There were instances where the coercive nature of CTOs meant that it was hard for patients to trust workers that they otherwise might have trusted. This was because they were perceived to be agents of a coercive authority, and even though they seemed like good people, they could not be trusted.

DISTRUST THAT WORKERS KNOW OR UNDERSTAND THEM

In addition to the distrust that was instilled by CTOs, some patients did not trust their workers to know them as another human being or understand their experiences.

> Because, no Dr Ball—I don't know why Dr Ball is persevering and determined to put me on a CTO. He doesn't know me. I haven't had proper consults with him for a long time, and the consults that I did have with him he says, "I'll do what I want to do."
>
> *Joan*

> I just didn't talk to anyone and the doctors and that they'd have—you know from what I heard, you know they would have a ward round and that and just didn't know how to get me out of this mute type situation and that's how I was for a number of years. You know and they tried everything to try and—not because—not scare me or anything, you know they didn't know how to wake up.
>
> *John*

SEEKING WORKERS NOT INVOLVED IN THE COMMUNITY TREATMENT ORDER

Although CTOs should include a negotiated treatment plan that ensures patients will have access to workers and therapy that will aid their recovery, some patients reported pursuing contact with workers who were outside of the CTO relationship, that is, they were showing a desire and capacity to trust certain individuals and services.

> Oh yes, Salvation Army. I went—I go there for support because sometimes I'm short of money, and I know them because I've done voluntary work there before, and they had a brochure, 'Get a referral to a psychologist', so I took that in and they contacted the psychologists which is near my home, and thank goodness Dr Coombs could see me because I was quite in shock at being locked up, and I would just stay home, I wouldn't even contact my friends. So they did a referral to my GP and they fitted me in, and then Dr Coombs went on maternity leave so Dr David took over, and every time I go there I talk and talk and talk.
>
> *Joan*

NO SECOND CHANCE AT TRUST

Trust can be relevant to whether you think that a worker will listen and take seriously what you say. Within the context of a CTO, some patients described how once trust had gone, they would not trust again.

> … there wasn't a second chance at trust because I told you the first time when I was on the medication I didn't feel that, because I'd heard that Orders could be made and I was threatened with that, but the first person that brought that up is Dr Lee herself in a funny sense, that if I don't take my medication that an Order can be made to do that, so that builds an instinctive fear so you don't want to tend to open up to say, 'It's not the medication, it's something to do with my alcohol and nicotine patches,' and I think maybe in her sense she's never said to me but she probably doesn't realise that you can shut somebody from wanting to say more things rather than if you're threatened with an Order, you know what I mean? And then that's when you tend to go underground and say, 'Well I'll try and do it on my own' so you have less support because you can't open up and ask for support.
>
> *Vicky*

WORKER PERCEPTION ABOUT WHO SHOULD BE PUT ON A COMMUNITY TREATMENT ORDER

While trust did not feature explicitly in the workers' experiences of CTOs, they did describe why they thought CTOs were necessary and, in doing so, suggested that there are often problems with the worker–patient relationship because of a lack of insight by the patient. As such, the workers did not trust that patients were fully able to grasp the implications of their illness or what was required to treat their deficits. The implication of this is that some workers seemed oblivious to the impact of the CTO process on the patient's level of trust in them, and instead interpreted and dismissed patient resistance as an individualized pathology, or personal deficit that could be addressed through expert care.

> Complete lack of insight which means that they don't necessarily see any connection between either their symptoms or the way they're experiencing things and the need to take treatment and so, in my experience, if there is this complete absence of insight then the use of the CTO does in fact often allow people to almost progress through life without any insight but be reasonably treated and live reasonable lives…
>
> Well if in fact you have a person on your caseload who has a very severe illness, and I will say that in terms of applying for a CTO it is in general only persons who

> have a very severe illness that I would ever contemplate applying to the Board. For someone who has a mild illness this in general I would not.
>
> *Judith (Social Worker)*

Some mental health workers made observations that suggested that they thought the illnesses being treated *via* CTOs were so serious that they precluded the development of meaningful and trust-based relationships. In effect, the severity of mental illness ruled out "recovery" as an outcome and meant that a smaller step toward mental health was a more realistic goal.

> Well, in general, yes, I mean, let's be real, I mean, why would I wish to go around putting CTOs on people? It's a huge amount of work, it's something that you really only do after you have exhausted all possibilities. If during that year people can come to some understanding of their own situation and agree to involve themselves with the medical profession and medication, and also some other recovery sort of type focused actions. I mean, I've got one lady on my caseload who I think—this was all before she came onto my caseload—but I think she might have had about five or six CTOs in her time and she was very self-damaging, self-harming, didn't cope at all but, at one stage she had a series of them and she recovered enough to be able to take control of some of her own medical responsibilities and it worked well.
>
> *Judith (Social Worker)*

While it is clear that CTOs make a patient-centered approach difficult, some mental health workers have found ways to be honest and communicate within a CTO.

> Absolutely. Well I mean sometimes you sort of think, say, take my arsonist friend, I didn't think twice about just saying, 'Well, this is your opinion, you understand you've got an illness but you also state very clearly, and thank you very much for your honesty, but you will not take your medication without it, so we'll go to the Guardianship Board and we can discuss that there.'
>
> *Judith (Social Worker)*

Despite the honesty expressed by this worker, the power imbalances inherent in the relationship are conveyed through their language. The use of "my arsonist friend" is congenial, but could also be taken to flag the nature of this patient's problems and to label them as an "arsonist." Of course, it may be that this patient *is* an arsonist, but this label means that the patient becomes viewed *via* the workers' interpretation of them. While "friend" in this context is likely to have been used for benevolent reasons, it can also be taken to imply a belittling of the patient.

Views about why some patients are compliant while under a CTO and others not were sometimes justified by features taken to be attributes of the patient and those around them such as friends who may be somehow complicit and untrustworthy too.

> CTOs are useful for people who are inherently well socialised and obliging and who are told that they have a legal obligation to participate in treatment. That sub-set of people might be more likely to participate in treatment because of the symbolic value of a CTO but, for people who are determined to evade CTOs and particularly if they have a support network who are able to support them in so doing, CTOs are of limited utility, you're empowered to inject somebody with medication if they're in your presence, it doesn't stop somebody from hiding or running away.
>
> *Tim (Psychiatrist)*

ENGAGEMENT GROUNDED IN TRUST AS AN AIM

Some of the mental health workers expressed concerns about the influence that a CTO could have upon their ability to be perceived as trustworthy and authentic, hence to engage effectively with patients. Implicit within such views is the concept of trust: both that the patient will trust what the mental health worker says, their motivation, and their understanding, and that this will result in the worker trusting that the patient will follow through with treatment they have agreed upon. For some mental health workers, the difficulties in establishing a trusting relationship caused by the use of a CTO, and concern about being complicit with the coercive process, were such that they would actively resist their use for some patients.

> …but often I've disagreed with CTOs because I think a lot of the good work and people wanting to improve their quality of life is down to engagement, and I think if people are given the opportunity to work with somebody they've worked with before, then they don't need a Community Treatment Order, and I think that sounds idealistic in many ways as well…
>
> Absolutely, and it's really hard and you walk a fine line as well with people on a Community Treatment Order about engagement - really hard. Many a time I've refused, out of an engagement perspective, to complete the CTO applications. The doctors have asked me and I've said, 'no, I don't support the Community Treatment Order and I'm not going to complete the work,' and the patient wouldn't even necessarily know that I had actually filled the paperwork in, but I know that I filled the paperwork in and that just seems morally wrong to me when I don't agree with the Community Treatment Order.
>
> *Laura (Nurse)*

DISCUSSION

Our participants' reflections about CTOs illustrated Bok's point about trust in another's word as central to all forms of trust. They illustrated the other forms of trust that she mentioned: trust that you will be treated fairly, trust that someone has your interest at heart, and participants also reported on slightly different senses of trust. Being able to trust that a mental health worker will understand or believe what you are saying emerged as an important experience for some patients.

The interviews showed how being required to see a specific mental health worker can result in a loss of patient trust in the worker and the system. While all mental health workers are likely to want their patients to see they are working toward their interests and trust them, as Baier points out, trust does not work by us merely asking or inviting the person to do so.

> "Trust me!" is for most of us an invitation which we cannot accept at will—either we do already trust the one who says it, in which case it serves at best as reassurance… (28, p. 244)

Given that workers see themselves as being there to help, it might be thought that patients should and will trust them. However, a trusting relationship needs to be built and sustained, and the first vital step in this process is by being truthful, open, and generous with time in communication. When the therapeutic relationship occurs within a CTO, that creates difficulties for creating and sustaining trust between patient and mental health worker.

It is clear that patients have the capacity to trust and probably would like to be able to trust their mental health worker. But the nature of care within a CTO relationship for many of the patients that we interviewed made this difficult. Some patients sought independently the contact of other workers with whom they developed productive trusting relationships. There is a growing literature on the value of peer specialists (former patients who have experienced recovery) for building empathy and relationships within a mental health team (29). With a good induction to the workplace, peer specialists have been shown to integrate well with the mental health team and improve the experience of patients (30, 31).

Some patients took the coercive nature of the CTO to mean that their worker and the system did not trust them to do what they should be doing. So, from the worker's perspective, a CTO is a solution to the uncertainty of the future and takes the role that might otherwise be played by trust. Niklaus Lumann observes that there is a conceptual relationship between trust and vulnerability: trust is a way of controlling for the uncertainties that the future holds.

The problem of trust therefore consists in the fact that the future contains far more possibilities than could ever be realized in the present and hence be realized in the past (32).

Intuitively, vulnerability is a crucial concept we associate with any form of treatment for mental illness that occurs within the context of mental health legislations. That is true both in the way that mental health legislation and CTOs can trump the right to refuse medical treatment and in the attempts made by legislators to protect the vulnerability of patients treated under such schemes *via* reviews or appeals. As Lumann observes, vulnerability is important much more generally too in that all of us are vulnerable to the multitude of events that could occur in the future and trust can function as a way of controlling and narrowing down those events. So, as Lumann observes, institutions and generalized systems develop so as to control this vulnerability. Giddens develops similar ideas and shows how trust can bridge the gap between the known and the unknown (33). Within a given societal structure or institution, individuals can initiate the creation of trust, but the rules that govern institutions can also provide a basis for the creation of trust when individuals are unfamiliar with each other.

This analysis raises a question about what happens when a process, such as a CTO, is coercive and counterproductive to the creation of trust. While some processes create trust between unknown actors, is it possible for workers and patient who do not know each other to trust? Because patients have no say in who cares for them *via* the CTO, they may be expected to engage with completely unfamiliar people with whom bonds of trust have been neither formed nor tested. Because of this, patients will base their assumptions about trustworthiness on the processes and system with which they are expected to engage and these assumptions could create additional challenges for creating trust. For this population, there might be added complications and a heightened need to be mindful of these concerns, given that they may be struggling to distinguish reality from delusional thinking when deciding who they can trust.

The CTO process authorizes involuntary treatment, and this means that treatment can be imposed upon patients *via* coercion. While care planning is a requirement for a CTO in most jurisdictions, the rules that govern them are perceived as serving the needs of the system rather than the needs or wants of the patient (34, 35). Therefore, patients may use their experience of this system as the basis for understanding how trustworthy particular individuals are likely to be. The result is that our inherent willingness to trust a mental health worker and service even when they operate in a trustworthy system (governed by standards, ethics, and training) is damaged. CTOs risk creating distrust in a health care system and the actors within this system becoming imbued with the same lack of trustworthiness. So, when trust does grow within the context of a CTO process, it is in spite of this process, as actors have overcome the distrust created by a coercive process.

The way that a CTO controls future possibilities by specifying what will happen if a patient does not comply with the order removes a vulnerability and the need to rely upon trust, risks constructing patients as inherently untrustworthy, and that seems diametrically opposed to a recovery-oriented approach. Nonetheless, that pessimistic conclusion does not take into account that some patients, such as Thomas and John, had more positive experiences of CTOs and believed what their worker said and that they heard him.

If CTOs are to better utilize the ability of patients to trust, then reflection upon the nature of trust in relationships that are not freely chosen seems important. A number of the patients felt distrust because they perceived workers to be too busy to focus upon them and that their worker did not seem to be aware of the significance of having someone in their home and giving them medication that they did not want. Time and open communication that engages and creates space for the patient's views to be heard seem like ways that this can be improved, even if trust continues to be difficult to establish. It might also be useful to reflect upon what leads us to the judgment that we can trust someone. While trust fulfils a set of particular functions within an institution, its preconditions and function in interpersonal relationships are different.

> …trust is not simply a reliance on another to act in a certain way; it involves a belief that for some reason - from self-interest, moral considerations, or affection—we can count on the other to pay attention to us and to our interests. (36, p. 6)

While health care workers treating a patient who is on a CTO have significant power over that patient, and ultimately possess the ability to coerce them into accepting treatment, finding a way to show that they are also motivated to pay attention to the patient and their interests, for reasons other than what is required by the CTO, seems to be of fundamental importance. Perhaps the first step toward interpersonal trust is that which Bok draws our attention to: if we cannot believe what someone says to us, nor that they will do what they say, then it is hard to see how any meaningful interpersonal trust can develop. This process likely works both ways, with workers not believing what the patient on a CTO says, or what they say they will do with regard to "compliance" with treatment. So, a starting point for workers who want to mitigate the challenges created by a CTO is to make sure they take the time to openly, respectfully, and honestly communicate with the patient about their treatment. A mental health care worker who demonstrates their honesty and reliability to a patient might still have to do things that the patient does not want, but at least their reasons will be transparent and they have taken the first and most important step toward creating a trust-based relationship. If that happens, then it might be possible for patients to reciprocate and be frank and open with their health care worker. Under such conditions, trust seems likely to grow and the relationship become more recovery-oriented and more satisfying for the health care worker, as well as better for the patient, as both build hope, through trust, that recovery is possible.

CONCLUSIONS

This paper has illustrated how trust, while complex, can be central to the interactions between mental health workers and patients who are subject to CTOs. While the interviews are qualitatively very rich, because the study involved a small number of participants, it is important to not generalize and make claims about the experiences of all workers and patients involved in CTOs. Nonetheless, we have shown how trust can be difficult to create and sustain within the bounds of a CTO and it would be surprising if others did not have similar experiences. There was a relationship between trust and whether patients found the CTO to be beneficial or harmful. While it will always be challenging to nurture trust within what is a coercive relationship, some of the patients and mental health workers did make this happen and reflecting upon what can help is important. Being sensitive to the power imbalance in such a relationship and what it might mean for interpreting what a patient says and thinks seems key. Mental health care workers will often also need to counteract the experiences that a patient has of the system that they work within and that can create additional interpersonal challenges for the worker.

This study illustrates how mental health workers and patients share a common aim in wishing recovery to be an endpoint of treatment and a CTO. Clearly, some patients were very unhappy with CTOs, but many of their concerns can be framed as the failure of the CTO to be recovery-oriented. For patients who experienced the CTOs as being positive and recovery-oriented, trusting and be trusted by their mental health worker emerged as a key theme. While this is a challenging area for mental health workers, finding ways to build a relationship in which trust can grow makes sense as a way to adopt and recovery-oriented emphasis. However, the basic building blocks on trust can occur within a CTO and focusing upon these might lead to a more recovery-oriented relationship. Creating a humane relationship is fundamental for the skills of health care workers to be effective in helping those mental illnesses work toward recovery. Sissela Bok is correct that trust is the bedrock upon which healthy human relationships are built and that this is as true for CTOs as it is in our other relationships.

ETHICS STATEMENT

This study was carried out in accordance with the recommendations of the "South Australia Health Human Research Ethics Committee" with written informed consent from all subjects. All subjects gave written informed consent in accordance with the Declaration of Helsinki. The protocol was approved by the "South Australia Health Human Research Ethics Committee."

AUTHOR CONTRIBUTIONS

JM, SL, and TD-C all contributed to the writing of this paper. They all saw and approved the paper before it was submitted. SL conducted the fieldwork. SL and TD-C conducted the coding.

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Perceived Coercion Among Patients Admitted in Psychiatric Wards: Italian Results of the EUNOMIA Study

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The decision to use coercive measures (restraint, seclusion and forced medication) in psychiatric practice is controversial in mental health care. The EUNOMIA study was funded by the European Commission and carried out in 11 countries in order to develop European recommendations for good clinical practice on the use of coercive measures. The aim of the study is to identify sociodemographic and clinical predictors of the levels of perceived coercion in a sample of Italian patients with severe mental disorders at hospital admission.

A total of 294 patients were recruited in five Italian psychiatric hospitals and screened with the MacArthur Perceived Coercion Scale to explore the levels of perceived coercion. Patients were assessed three times: within the first seven days after admission as well as after 1 and 3 months. At each time point, data on changes of perceived coercion, assessed by the Cantril Ladder of Perceived Coercion Scale, information on coercive measures received during hospitalization and the levels of satisfaction with the received treatments were collected.

According to the multivariable regression model, being compulsorily admitted (OR: 2.5; 95% CI: 1.3–3.3, p < .000), being male (OR: 0.7; 95% CI: 0.9-1.4; p < .01), being older (OR: 0.03; 95% CI: 0.01–0.06) and less satisfied with received treatments (OR: -0.2; 95% CI: -0.3 to -0.1; p < .05) are all associated with higher levels of perceived coercion, even after controlling for the use of any coercive measure during hospitalization.

Satisfaction with received treatment predicts the levels of perceived coercion and this should represent an important challenge for mental health professionals.

Keywords: perceived coercion, involuntary admission, formal coercion, Cantril Ladder, severe mental disorder

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INTRODUCTION

Formal coercion is defined as coercion exercised within the regulations of a given mental health legislation (1). In the framework of formal coercion, different types of coercive measures are included, namely involuntary admission, forced pharmacological treatments, use of physical restraint, and isolation (2, 3).

The use of coercive measures represents a controversial and highly debated issue in mental health. Adopting formal coercion could be necessary to provide treatments to patients with a poor level of insight, those not able to seek for psychiatric help and those who cannot receive the needed treatments (4). However, it has been pointed out that coercive treatments are less effective than voluntary ones and can lead to patients' distrust, reduced satisfaction with received treatments and decreased level of engagement with mental health services (5, 6).

Patients are increasingly recognized as key decision makers in mental health care (7). Allowing patients to choose treatments and have a say in their care could be associated with a better outcome and increased medication adherence (8, 9). Therefore, it is important to evaluate and assess patients' subjective experience of feeling coerced, defined as "perceived coercion" (2, 10).

Little is known about the impact of perceived coercion on clinical outcomes after discharge. Katsakou et al. (11) found that satisfaction with treatment among involuntary patients was associated with high levels of perceived coercion during admission and treatment, rather than with the documented extent of coercive measures. Priebe et al. (12) documented that patients' views on treatment within the first week are a relevant indicator for the long-term prognosis of involuntarily admitted patients. The formal legal admission status and the use of coercive measures are often not directly associated with the subjective experience of being coerced (13, 10), and perceived coercion is a more accurate measure of coercion (14). Several studies have showed that patients' subjective experience of coercion in hospital is mostly related to the perceived "negative pressure" at admission (i.e., use of threats and of force), to the feeling of not being involved in decisions regarding admission, and to the feeling of being treated with no respect and no consideration (4, 15, 16). However, Gardner et al. (17) have highlighted that the levels of perceived coercion at admission tend to be stable over time, even when patients' opinions about the actual need of admission improve. Available data on determinants of patients' perceived coercion at admission in psychiatric wards are conflicting.

Not surprisingly, several studies (18, 19, 20) have shown that involuntarily admitted patients perceive higher levels of coercion compared to those voluntarily admitted. However, perceived coercion is only partially related to the formal status of admission, and it is confounded by several socio-demographic and clinical variables, including age, ethnicity (perceived coercion is higher in non-white populations), diagnosis, insight of the illness and severity of symptoms (10, 21, 22). To our knowledge, no study has been carried out on perceived coercion in Italy, the country with the longest experience of community mental health care. This paper aims to 1) identify the sociodemographic and clinical characteristics associated with high levels of perceived coercion at admission in psychiatric wards and 2) assess the relationship between the levels of perceived coercion at admission and the levels of satisfaction with received care after three months of hospitalization in a sample of Italian patients with severe mental disorders.

MATERIALS AND METHODS

Data reported in this study have been collected within the "European evaluation of coercion in psychiatry and harmonization of best clinical practice (EUNOMIA) project," funded by the European Commission and carried out in 11 European countries (Bulgaria, Czech Republic, Germany, Greece, Italy, Lithuania, Poland, Slovakia, Spain, Sweden and UK). The characteristics of participating mental health facilities, aims, and methods of the whole study have been reported in detail elsewhere (3, 23). For the purposes of this manuscript, we included data on patients recruited in five Italian psychiatric wards (Naples, Salerno, Nocera Inferiore, Sant'Angelo dei Lombardi, Polla).

In order to be eligible for the study, patients should have high levels of subjective experience of feeling coerced (perceived coercion) at admission. The patients' subjective experience of being coerced at enrollment was assessed with the Mac Arthur Scale for Perceived Coercion (24). Patients with a score >3 from the MacArthur Perceived Coercion Scale were recruited. All instruments, including the MacArthur Scale, have been translated and back-translated before recruitment. Patients affected by dementia, alcohol or drug acute intoxication, eating disorders requiring forced nutrition or severe cognitive impairment were excluded from the study. All enrolled patients received adequate information on the study's aims and provided written informed consent to participate in the study.

Patients were assessed three times: within the first seven days after admission (T0), after one month (T1) and after three months (T2). Sociodemographic characteristics have been collected with an ad-hoc schedule. Diagnoses were recorded at discharge according to the ICD-10 criteria and have been grouped into the following: 1) schizophrenia and other psychotic disorders (F20-F29); 2) affective disorders (F30-F39); and 3) other disorders. Patients' global functioning was assessed with the Global Assessment of Functioning (GAF, 25) and the severity of psychiatric symptoms with the Brief Psychiatric Rating Scale (BPRS), 24-item version (26).

At baseline, the levels of perceived coercion have been evaluated using the "perceived coercion" items from the MacArthur Admission Experience Survey (patient interview version), while at T1 and T2 the levels of perceived coercion and pressures concerning hospital admission have been evaluated using the Cantril Ladder of Perceived Coercion and items from the Nordic Study on Coercion (patient interview version) (27–29). The Cantril Ladder is rated on a 10-point Likert scale, from 1 (minimum level of perceived coercion) to 10 (maximum level of perceived coercion).

At T2, the Client's Assessment of Treatment (CAT) and an ad-hoc schedule on the use of mental health services after discharge and on patients' opinions regarding the decision of the index hospitalization (e.g., "who decided in favor of hospitalization?") were used (29). The CAT evaluates patients' satisfaction with treatment during the previous three months. It consists of seven items, exploring satisfaction with received treatments, with the treating clinician and with other mental health professionals, with medications, with other received treatments, and the level of satisfaction with the global received care. Each item is rated on a 10-point Likert scale, from 0 ("not at all") to 10 ("yes entirely").

As part of the assessment procedure, an ad-hoc schedule was used to collect information on coercive measures. According to the study protocol (29), coercive measures were defined as follows: seclusion is the involuntary placement of an individual alone in a locked room; restraint is the fixation of at least one of the patient's limbs by a mechanical device or at least one limb being held by staff for longer than 15 minutes; forced medication refers to activities which use restraint or high psychological pressure to administer medication against the patient's will; involuntary detention is defined by any of the following criteria: a) the patient is initially admitted on a legally voluntary basis and withdraws his consent to hospitalization at a later stage; b) the legally defined time period (different between countries) in which the hospital is allowed to initially detain a patient without applying for a decision of the responsible legal authorities has passed; or c) the detention is based on the authorization of legal authorities.

All other details regarding the study protocol have been published elsewhere (29).

ETHICAL STANDARDS

The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008.

STATISTICAL ANALYSES

The socio-demographic and clinical characteristics of voluntary and involuntary admitted patients were compared using chi-square or t-test for independent samples, as appropriate. Pearson's rho was used to evaluate correlations between the levels of perceived coercion and the levels of satisfaction with treatments.

In order to identify predictors of the levels of perceived coercion, a linear regression model has been performed using the score at the Cantril Ladder as the main outcome. Before performing the regression model, normal distribution was checked and confirmed. Therefore, a linear regression model was developed, entering in the model several socio-demographic and clinical variables identified from previous studies in the field.

Statistical analyses were performed using the Statistical Package for Social Sciences (SPSS), version 17.0. For all analyses, the level of statistical significance was set at $p < .05$.

RESULTS

Sample Description

The global sample consists of 294 patients, whose main sociodemographic and clinical characteristics are shown in **Table 1**. The majority of patients (N = 165; 56%) were voluntarily admitted and suffered from psychosis (62.7%), with a prevalence of positive and manic symptoms at BPRS. Most of the patients had been previously admitted in psychiatric wards (78.6%) (**Table 1**). Compulsorily admitted patients were more frequently male ($p < .001$), employed ($p < .01$), with higher levels of positive and manic/hostility symptoms ($p < .000$) and lower depression/anxiety symptoms ($p < .001$) (**Table 1**).

At baseline, patients reported a considerably high level of perceived coercion, with a mean score of 7.3 ± 2.4 at the Cantril Ladder of Perceived Coercion scale. Regarding patients' perceived coercion and pressure at admission, 20% of voluntary admitted patients reported that the decision for admission was made by other people. In particular, they attributed the decision to be hospitalized to other people (69%), mainly close relatives (80%), mental health professionals (16%), police officers (2.5%), friends or colleagues (1.5%). Only 16% of these patients spontaneously

TABLE 1 | Socio-demographic and clinical characteristics of the sample (N = 294).

	Total sample (n = 294)	Voluntarily admitted patients (N = 165)	Compulsorily admitted patients (n = 129)	p-value
Gender, male, % (N)	52.7 (155)	55.8 (92)	34.9 (45)	.001
Age, years, M (± sd)	39.9 (10.5)	40.5 (10.7)	39 (10.3)	NS
Married, yes, % (N)	24.8 (73)	27.3 (45)	21.7 (28=	NS
Diagnosis, % (N)				
Schizophrenia and other psychotic disorders	62.7 (183)	59.4 (98)	66.9 (85)	NS
Affective disorders	23.3 (68)	26.1 (43)	19.7 (25)	NS
Other	14 (41)	14.5 (24)	13.4 (17)	NS
Employed, yes, % (N)	16.6 (48)	11.7 (20)	24.6 (31)	.01
Years of education, M (± sd)	15.9 (3.8)	15.7 (4)	16.1 (3.5)	NS
Previous hospitalizations, yes, % (N)	78.6 (231)	83.6 (138)	72.1 (93)	NS
Previous compulsory hospitalizations, yes, % (N)	70.0 (204)	35.1 (57)	57.4 (77)	.000
BPRS subscales (score range: 1-7)				
Positive symptoms, M (± sd)	3.2 (1.3)	2.9 (1.3)	3.7 (1.2)	.000
Negative symptoms, M (± sd)	2.6 (1.1)	2.5 (1.1)	2.7 (1.2)	NS
Manic/excitement symptoms, M (± sd)	3.7 (1.4)	2.1 (1.2)	3.3 (1.5)	.000
Depression/anxiety symptoms, M (± sd)	2.5 (1.1)	2.7 (1.1)	2.3 (0.9)	.001
GAF (score range: 0-100), M (± sd)	43.3 (15.1)	43.7 (15.3)	42.7 (15.0)	NS
CAT global score (score range: 0-10), M (± sd)	6.7 (2.0)	7.5 (1.5)	5.7 (2.1)	.000
Cantril Ladder (score range: 0-10), M (± sd)	7.3 (2.4)	6.4 (2.5)	8.5 (1.6)	.000

N, number; BPRS, Brief Psychiatric Rating Scale; GAF, Global Assessment of Functioning; CAT, Clients' Scale for Assessment of Treatment; NS, Not Significant; M, mean; sd, standard deviation.

decided to be admitted, while 15% affirmed that the decision of hospitalization was made together with other people.

Involuntarily admitted patients reported that the decision for hospitalization was made by close relatives (63%), mental health professionals (18%), police officers (18%), friends or colleagues (1%). On the other hand, 9% of compulsorily admitted patients did not report high levels of perceived coercion, confirming having spontaneously decided to be hospitalized.

At admission, patients were quite satisfied with received treatments and recognized that the hospitalization was helpful; moreover, they reported that they felt respected and regarded well during the hospitalization. The correlation analyses confirmed that patients reporting higher levels of satisfaction at T2 were those reporting lower levels of coercion at admission (rho = -.193, p < .01). Furthermore, we found an improvement in the levels of satisfaction with received treatments over time (**Table 2**).

Coercive Measures

Regardless of the legal status at admission, 84 patients (28.6%) reported to have received one or more coercive measures during hospitalization: 66 (22.4%) patients received forced medication, 26 (8.8%) patients were physically restrained, and 20 (6.8%) patients were isolated from other patients. Patients who received at least one coercive measure during the hospitalization were more frequently male (p < .01), with higher levels of positive (p < .000), negative (p < .001), and manic-excitement (p < .000) symptoms, and with lower levels of depression/anxiety subscales at BPRS subscales (p < .01). Moreover, they reported higher levels of perceived coercion (p < .000) and worse global functioning at GAF scores (p < .01) compared to those not receiving coercive measures (**Table 3**).

Predictors of the Levels of Perceived Coercion at Admission

According to the multivariable regression model, several predictors of perceived coercion were identified. In particular, the levels of perceived coercion are higher in patients being compulsorily admitted (OR: 2.5; 95% CI: 1.3–3.3; p < .000), male (OR: 0.7; 95% CI: 0.9-1.4; p < .01), older (OR: 0.03; 95% CI: 0.01-0.06; p < .05) and less satisfied with received treatments (OR: -0.2; 95% CI: -0.3 to -0.1; p < .05), even after controlling for the use of coercive measures during hospitalization (**Table 4**).

TABLE 3 | Socio-demographic and clinical characteristics differences according to the use of coercive measures (regardless the formal admission status).

	Use of coercive measures		
	Yes (N = 84)	**No (N = 210)**	**p-value**
Gender, male, % (N)	67.9 (57)	46.7 (98)	.01
Age, years, M (± sd)	39.4 (10.9)	40.1 (10.4)	NS
BPRS subscales (score range: 1-7)			
Positive symptoms, M (± sd)	3.5 (1.4)	2.3 (1.3)	.000
Negative symptoms, M (± sd)	2.9 (1.1)	2.4 (1.1)	.001
Manic/excitement symptoms, M (± sd)	3.8 (1.1)	3.0 (1.4)	.000
Depression/anxiety symptoms, M (± sd)	2.2 (0.9)	2.6 (1.1)	.01
GAF (score range: 0-100), M (± sd)	39.2 (13.0)	44.9 (15.6)	.01
Cantril Ladder (score range: 0-10), M (± sd)	6.9 (1.9)	7.7 (1.4)	.000

N, number; BPRS, Brief Psychiatric Rating Scale; GAF, Global Assessment of Functioning; NS, Not Significant; M, mean; sd, standard deviation

DISCUSSION

This study, carried out as part of the collaborative European multicenter project EUNOMIA, represents the first effort to describe the levels of perceived coercion in a sample of Italian patients, using a robust and reliable methodology. In particular, several standardized assessment tools for evaluating formal and perceived coercion have been administered by trained mental health professionals, who were already engaged in the clinical activities of the participating mental health facilities.

According to our study, the levels of perceived coercion are related to the legal status at admission and to several patients' sociodemographic and clinical characteristics, such as age, gender and previous admissions. Involuntarily admitted patients showed higher levels of coercion compared to the voluntarily admitted ones,

TABLE 2 | Levels of treatment satisfaction and correlations with the levels of perceived coercion.

Score 0-10 at CAT items	Changes in levels of treatments satisfaction			Correlations between levels of treatments satisfaction and perceived coercion at hospital admission
	Baseline	**T1**	**T2**	
Do you believe you are receiving the right treatment/care for you here?	6.6 (1.9)	7.4 (1.5)	7.7 (1.2)	-.279*
Does your therapist/case manager/keyworker understand you and is he/she engaged in your treatment/care?	6.6 (2.1)	7.5 (1.8)	7.9 (1.2)	-.291*
Are relations with other staff members here pleasant or unpleasant for you?	7.0 (2.1)	7.7 (1.8)	8.1 (1.3)	-.222*
Do you believe you are receiving the right medication for you?	6.6 (2.2)	7.4 (1.7)	7.9 (1.3)	-.247*
Do you believe the other elements of treatment/care here are right for you?	6.6 (2.7)	7.6 (1.8)	7.9 (1.3)	-.213**
Do you feel respected and regarded well here?	7.1 (2.2)	7.8 (1.8)	8.1 (1.4)	-.178**
Has treatment/care here been being helpful for you?	6.8 (2.3)	7.6 (1.7)	8.0 (1.3)	-.193**

**p-value < .000; **p-value < .01.*
CAT, Client's Assessment of Treatment.

TABLE 4 | Predictors of levels of perceived coercion at the admission.

Number of subjects included in the analysis	294			
F (df)	9.619 (14)			
P	.000			
Adjusted R square	0.310			
Constant	10.1 (7.7 to 12.6)			
	OR	**95% CIs**		**p-value**
Gender, ref. category female	0.8	0.9	1.4	.01
Previous psychiatric hospitalizations, yes	0.4	-0.7	0.9	NS
Employed, yes	0.8	-0.1	1.5	NS
Legal status at admission, involuntary admission	2.5	1.3	3.3	.000
Receiving any coercive measures during admission, yes	-0.21	-1	0.6	NS
Diagnosis, ref. category "Other"				
- Schizophrenia and other psychotic disorders	-0.4	-1.3	0.5	NS
- Affective disorders	-0.6	-1.6	0.4	NS
Age	0.03	0.04	0.06	.05
BPRS subscale, positive symptoms	0.2	-0.1	0.6	NS
BPRS subscale, negative symptoms	0.3	-0.6	0.1	NS
BPRS subscale, manic/ excitement symptoms	-0.1	-0.3	-0.3	NS
BPRS subscale, depression/ anxiety symptoms	-0.4	-0.7	-0.1	NS
GAF global score	-0.1	-1.4	-0.1	.01
CAT global score	-0.2	-0.3	-0.1	.05

BPRS, Brief Psychiatric Rating Scale; GAF, Global assessment of Functioning; F-test; df, degree of freedom; OR, Odds Ratio; CIs, Confidence Intervals.

recognizing that the decision of admission to the psychiatric ward was made by other people. These data are consistent with previous studies (2, 10, 30, 31) and suggest that patients tend to have similar experiences during involuntary admission—regardless of national legislations. This confirms the idea that compulsory admission, as well as the adoption of any other coercive intervention in psychiatric settings, should be considered as the last acceptable treatment option and should be adopted only when all other therapeutic interventions fail (4, 32–34). Involuntary admission, although being used to manage patients during the acute phases of their disorder, could lead to high levels of perceived coercion and to high levels of skepticism from patients toward the efficacy of provided interventions. One possible way to reduce the negative impact of involuntary admissions on patients' perceived coercion can be the implementation in routine settings of the Joint Crisis Plans (JCPs) and the Patients' Advanced Directives (PADs) (35). These plans are based on patients' anticipated will about possible treatments to be received during acute crises. Despite the fact that these strategies seem to be promising, their implementation in routine care is still poor.

Another relevant finding is that male patients tend to feel more coerced than females, being also more frequently involuntarily admitted. This finding is in line with those found in other studies carried out in different socio-cultural contexts (34, 36).

Regarding the decision about hospital admission, more than half of the patients reported that this choice was made by relatives on their behalf. This finding emphasizes the need to involve patients' relatives already in the initial phases of treatment, providing them adequate information on patients' disorders, teaching them strategies for the detection of early warning signs and correctly managing the situation, in order to reduce the risk of compulsory admissions (37–39).

Furthermore, we found that the level of perceived coercion is influenced by the level of functioning, but not by the severity of clinical symptomatology. A possible explanation could be that worse psychosocial functioning is often associated with a poor level of insight, which can be an obstacle to being motivated for treatment and the acceptance of hospitalization. This aspect is controversial, since previous studies (40) have suggested a close link between clinical status and levels of perceived coercion, while other studies did not (22, 30). However, in our sample we found that patients with higher levels of personal functioning reported low levels of perceived coercion, while no differences were found comparing the formal status at admission and the levels of personal and social functioning.

In our sample, patients with high levels of perceived coercion reported low satisfaction with treatment and process of care. Improving patients' satisfaction with received treatments represents a challenge for mental health professionals. Our findings are in line with available literature and suggest that reducing patients' feelings of coercion might lead to higher overall satisfaction (11, 41).

Patients' satisfaction with treatment seems to be more strongly linked to perceived coercion rather than to formal coercion, since perceived coercion is largely based on the overall experience of involuntary treatments and on modalities of treatment negotiation with patients. Good empathy, realistic and explicit communication would allow patients to feel more involved in decisions regarding their health (42), to improve patient-clinician relationship (43) and to promote patients' recovery (44, 45). In particular, a shared approach in decision-making should be adopted in order to improve not only patients' satisfaction with received treatments, but also patients' adherence to treatments (46–49).

The study has some limitations that must be acknowledged. First, the study was conducted within the framework of the EUNOMIA project and data were collected in the period 2003-2005. Inpatient bed coverage in Italy is lower compared to other European countries participating in the EUNOMIA study sites (e.g., Naples: 4,7 per 100 000; Wroclaw: 30,6 per 100.000; Dresden: 63,7). Therefore, it may be that in Italy we recruited a highly selected (and severely symptomatic and functionally impaired) inpatient population compared to the other European countries.

Furthermore, the methodological choice of including patients with high levels of perceived coercion (i.e., MacArthur scale score >3) may have selected the sample and limited the interpretation of a complex phenomenon such as that of perceived coercion. Since the evaluation of perceived coercion is mainly based on patient-reported questionnaires, recall bias, memory-loss and lack of knowledge on definitions of coercive measures may limit the generalizability of the findings, although the adopted instruments are reliable and have been previously validated.

Another limitation is that the participating mental health centers are all located in Southern Italy, whereas several organizational differences exist throughout Italy. Therefore, a study involving different centers from different Italian regions may be advisable for an in-depth understanding of this phenomenon in Italy.

ETHICS STATEMENT

The study has been approved by ethical committees of each participating centre. Data of patients reported in the paper refer only to those recruited in the Naples centre.

AUTHOR CONTRIBUTIONS

GS, ML, VDV and AF contributed to the conception and design of the work and in drafting the manuscript; BP, CP, GF, VG and CDR contributed to the collection, analysis and interpretation of data. GS, ML, CDR and AF developed the statistical analysis plan and drafted the manuscript. All authors provided the approval for publication of the manuscript.

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Preventing and Reducing Coercive Measures—An Evaluation of the Implementation of the Safewards Model in Two Locked Wards in Germany

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Introduction: Aggression and violence are highly complex problems in acute psychiatry that often lead to the coercive interventions. The Safewards Model is an evidence-informed conflict-reduction strategy to prevent and reduce such incidents. The aim of this study was to evaluate the implementation of this model with regard to coercive interventions in inpatient care.

Materials and Methods: We evaluated outcomes of the implementation of the Safewards Model in two locked psychiatric wards in Germany. Frequency and duration of coercive interventions applied during a period of 11 weeks before and 11 weeks after the implementation period were assessed through routine data. Fidelity to the Safewards Model was assessed by the Organization Fidelity Checklist.

Results: Fidelity to the Safewards Model was high in both wards. The overall use of coercive measures differed significantly between wards [case-wise: χ^2 (1, $n = 250$) = 35.34, $p \leq 0.001$; patient-wise: χ^2 (1, n = 103) = 21.45, $p \leq 0.001$] and decreased post-implementation. In one ward, the number of patients exposed to coercive interventions in relation to the overall number of patients decreased significantly [χ^2 (1, 281) = 6.40, p = 0.01]. Furthermore, the mean duration of coercive interventions overall declined significantly [$U(55,21) = -2.142$, $p = 0.032$] with an effect size of Cohen's $d = -0.282$ (95% CI: –0.787, 0.222) in that ward. Both aspects declined as well in the other ward, but not significantly.

Discussion: Results indicate that the implementation of the Safewards interventions according to the model in acute psychiatric care can reduce coercive measures. They also show the role of enabling factors as well as of obstacles for the implementation process.

Keywords: Safewards Model, conflict, coercive measures, acute psychiatric care, inpatient treatment, locked ward

INTRODUCTION

Managing conflict and violent situations such as self-harm, drug abuse, physical aggression, verbal abuse, or aggressive behavior towards others is part of acute inpatient psychiatric care. It has become a major focus for staff interventions in such units (1, 2). Coercive interventions are often used to contain such situations, even though they may cause harm to patients and staff (3). Rates of coercive interventions vary between individual units and across countries. A previous study suggests that coercive measures are used in between 21% and 59% of individuals admitted to psychiatric hospitals across various European countries (4). Types of coercive intervention used varies between countries depending on the national psychiatric legislations (5–9). Coercive measures are associated with longer duration of inpatient treatment and forced medication seems to have a significant impact on patient disapproval of treatment (10).

Coercive interventions are considered a violation of human rights according to the United Nations Convention on the Rights of Persons with Disabilities (11). They should only be applied in case of emergency, as last option if other measures failed, and under strict conditions (12). Their ethical and clinical appropriateness is a priority in many countries aiming to reduce their use in mental health care (3, 13).

Against this background, the implementation of strategies that prevent and reduce coercive interventions is widely recommended and requested (14, 15). Nevertheless, such strategies are only partially realized so far (16–18). This might—*inter alia*—result from the complexity of the issue. This complexity is, e.g., outlined by a recent systematic review that revealed six key components in coercive measure reduction programs: 1) leadership, 2) training, 3) post-seclusion and/or restraint review, 4) patient involvement, 5) prevention tools, and 6) therapeutic environment (19). According to current knowledge, complex interventions appear to be particularly effective in reducing coercion measures if they contain various components. One of the most recently developed programs containing all those components is the Safewards Model (20). This conflict-reducing strategy accounts as an evidence-based complex intervention in psychiatric care. Its great merit is its strong theoretical basis and the conclusiveness with which it has been assessed. The Safewards Model was developed in the United Kingdom and has been translated into several languages (1, 21). It combines empirical evidence regarding aggression, flight behavior, and containment with new thoughts on preventing aggression and violence (22–27). The theoretical framework of the model is particularly characterized by the complex interplay between conflict and containment (1). Thus, the Safewards Model has a broader perspective than explanatory models that look at these aspects separately (28–30). Furthermore, it distinguishes between the cause, the triggers, and the actual occurrence of a conflict. Its explanatory framework outlines situations of tension that develop within regular procedures in acute psychiatry (31). For the first time, a theoretical model on conflict and containment includes the influence of patient interactions and regulatory frameworks as well as external conditions and patient behavior. Moreover, the Safewards Model advocates the need for more safety for patients and staff from the highest hierarchical level (20). It is grounded in recovery principles and identifies six key domains that influence conflict and containment: patient community, patient characteristics, regulatory framework, staff team, physical environment, and factors from outside the hospital. By this multi-perspective approach, it offers several starting points to prevent conflict and coercive interventions in acute psychiatry (31).

The core of the Safewards Model consists of 10 interrelated interventions (2, 31):

Clear Mutual Expectations: Staff holds regular meetings with patients to discuss expectations of each other's behavior. A final set of expectations is printed on a poster and displayed on the ward visible for patients and staff.

Soft Words: About 100 statements are provided to staff to advise them on how to speak to patients around "flashpoints" such as when staff have to say "no" to a patient, when staff has to ask a patient to do something that they don't want to do, or when staff has to ask the patient to stop doing something that they should not do.

Talk Down: Staff is taught a process for de-escalation and how to integrate this into everyday practice.

Positive Words: Staff is encouraged to say something positive about the patients during their handover that is supported by a positive psychological explanation of observed behavior.

Bad News Mitigation: Staff is taught specific techniques to assist them in delivering "bad" news to patients.

Know Each Other: Staff provides non-controversial information about themselves such as hobbies, interests, etc. This is made visible or rather available to patients and forms the basis for better interactions with staff.

Mutual Help Meeting: Each morning or several times a week, staff holds a patient meeting to identify ways that patients can help each other during the ensuing 2 days.

Calm Down Methods: Staff is taught specific activities ("skills") to assist patients to calm down when they are tense or agitated.

Reassurance: Following the occurrence of an adverse event or an anxiety-provoking incident on the ward, staff should talk to other patients individually or in groups to provide information on what has happened and reassure patients.

Discharge Messages: On the day of their discharge, patients are invited to write a brief card for display on a special notice board. The cards relate to what they liked about their stay and to positive thoughts about the future. The aim of these cards is to help recently admitted patients to reduce negative feelings and concerns about hopelessness.

These 10 interventions are taught to and later carried out by all professional groups in the ward. The main goal of the training is to prevent and detect conflict situations at an early stage and respond with specific verbal as well as non-verbal communication. Thereby, the rate of conflict shall be reduced. At the same time, participation, appreciation, hope, and empowerment shall be reinforced.

There are promising research findings indicating a positive effect of the Safewards Model on conflict and containment in acute inpatient units in English-speaking countries (2, 32, 33). For example, a large-scale randomized controlled trial in the United

Kingdom found a reduction in conflict by 15% and a reduction in containment by 25% in intervention versus control wards (34). However, confidence intervals were rather broad, suggesting varying success with implementation of the Safewards Model or difficulties with regard to model fidelity (35). Poor adherence was also discussed as a limitation in a study conducted in forensic units that did not find positive effects after implementing the Safewards Model (36). High fidelity was measured in an Australian study that found seclusion rates to be reduced by 36% after the Safewards implementation in psychiatric inpatient units (33). Further empirical evidence for reducing conflict and containment in psychiatry was found regarding several multi-perspective conflict-reduction interventions focusing on leadership, staff, and patient level (18, 37, 38). Richter and Needham (18), e.g., showed that participating in de-escalation and aggression management staff training can lead to better knowledge and a more precise documentation of conflicts and containment. Furthermore, their review outlined that studies using outcomes close to the intervention, e.g., increase of knowledge and confidence, showed almost homogeneous positive results. However, results from studies investigating a combination of defense and de-escalation techniques were heterogeneous. These studies found positive effects as well as negative or no effects of such staff training on the rate of conflicts. With regard to the latter findings, Richter and Needham (18) point out that the role of change in documentation of aggressive events is uncertain since staff training increases the willingness to register such events.

To our knowledge, there is no evaluation of an implementation of the Safewards Model in acute psychiatric inpatient units or rather locked wards in the German health care context so far. Thus, we aimed at transferring research findings into clinical practice as well as examining underlying factors that might promote or hinder this process. This procedure is closely related to methods of implementation of science and shall facilitate the transfer of evidence-based clinical–psychological into acute psychiatric mental health care (39, 40). We hypothesized that changes in the ward through the implementation of the Safewards Model would reduce coercive interventions. Thus, we evaluated the implementation process with regard to the use of mechanical restraint, forced medication, and limitation of freedom of movement. This procedure aimed at closing another research gap since the majority of evaluations regarding the reduction of coercive interventions assessed the impact only on mechanical restraint (41). Furthermore, considerable differences in national laws and practices as well as the lack of studies reporting on the effects on other types of coercion affect the transferability of these results to other countries. For example, in the United Kingdom, mechanical restraint is not routinely used, and in Australia, only seclusion is used in mental health care. In Germany, on the other hand, mechanical restraint, forced medication, limitation of freedom of movement, and seclusion are used in different hospitals. Therefore, we assessed the use of different coercive measures and reported them individually.

MATERIALS AND METHODS

The Safewards Model was implemented in two locked wards in the Department of Psychiatry, Psychotherapy and Psychosomatic Medicine at Vivantes Hospital Am Urban in Berlin. Vivantes Hospital Am Urban has one central emergency department, 11 medical and surgical departments and one psychiatric department. The psychiatric department comprises two outpatient departments and 614 beds including 174 psychiatric inpatient beds and 50 day clinic beds. The hospital's catchment area is Berlin's inner-city district Friedrichshain-Kreuzberg with approximately 280,000 residents.

Implementation and Evaluation of the Safewards Model

In the implementation and evaluation process of the Safewards Model, experienced hospital staff as well as experienced external experts were involved. Hospital staff was familiar with the implementation of new interventions through continuous work on psychiatric projects in the hospital. Michael Löhr (ML) and Michael Schulz (MS), from the University of Bielefeld, guided the process as external experts. They had translated the Safewards Model into the German language and adapted it to the German care system. Furthermore, ML and MS play a central role in establishing and implementing the Safewards Model in Germany (42–45). In addition, they have a wide range of experience in dealing with coercion (46–48).

The framework that guided the implementation concept developed by MS and ML consisted of three parts: 1) step-by-step plan for developing the implementation intervention, 2) implementation, and 3) evaluation of the implementation.

(1) Step-by-Step Plan for Developing the Implementation Intervention

First, a five-step implementation plan was developed following Skolarus and Sales (49) while considering relevant literature of the Safewards concept:

1. A review of current practice regarding violence and coercion in the hospital was conducted. This revealed problems in both locked wards.
2. Literature analyses and exchanges with experts resulted in the selection of the Safewards Model as an evidence-based practice for improving the situation.
3. Barriers that could hinder the implementation of the Safewards Model were identified.
4. Concrete actions were taken to address possible barriers. Among others, the implementation opted for a whole-team approach with participation and motivation of all professions and the entire staff of the ward. It was decided that all professional groups should participate in the training. Through participative sessions, employees' motivation was promoted.

(2) Implementation

A wide range of essential aspects had to be considered during the implementation, e.g., approval and integration of executive management or nomination and definition of tasks of operative project management. For this purpose, the Safewards preparation checklist was applied throughout the whole process (45). Initially, a steering group with the director of the department, the nursing director, the consultant psychiatrists responsible for the ward, and a project manager for each ward was established. The manualized 10 Safewards team interventions were introduced within a standardized all-day workshop carried out by ML and MS with all staff members of the two wards (50). Afterwards, executive staff members were asked if they were interested in dealing with the concept in detail. Each interested staff member was assigned to one of the interventions as an "expertise multiplier" or rather "Safewards champion." The person holding this position was responsible for planning, organizing, and implementing the corresponding intervention. According to Houser et al. (51), such a nomination is an effective strategy for information transfer in an implementation process. After the nomination, assigned executive staff members developed a concept as well as working material for implementing "their" intervention in the ward. These were based on the manual of the Safewards resource kit from the official Safewards web page (http://www.safewards.net/de/). Issues dealt with were, e.g., educational aspects regarding how to give the team an understanding of the intervention, how the intervention can be integrated into daily work routines, or which resources were required such as rooms, time, money, and equipment. The status of the implementation and the material used were presented in a separate workshop. The workshop was led by ML and MS who provided feedback and suggestions for improvement of the ideas presented. Cultural and local adaptation was developed in this process in close exchange between staff and external experts. The aim of this process was to facilitate a successful implementation while maintaining the main profile of the intervention. Some of the interventions had to be adapted to the situation on the wards. For example, the intervention "know each other" was filled with different data at both wards. The ward culture plays an important role in the implementation of the intervention. This possibility of adaptation is explicitly described on the Safewards homepage. No changes were made to the model or the core of the interventions. Only the described possibilities for adaptation were used.

The next step was a call for expressions of interest regarding the contextual acceptance and the practical realization of the Safewards Model. This was carried out among all staff of the two locked wards. Staff members who were not willing to support the implementation (2 out of 40) agreed to change to another ward within the hospital. This was thought to ensure the actual implementation and a sustainable integration of the intervention "from within."

The practical implementation process was led by the consultant psychiatrists and the ward managers. Supervision of the process was performed by the chief psychiatrist, the chief nurse, as well as ML and MS. Since each intervention was implemented within 1 month, this phase comprised of 10 months. The timely order of the implementation was decided upon the availability of the respective "expertise multipliers." The implementation of each intervention was mainly carried out within regular weekly staff meetings. It included instructions on the interventions' content, a demonstration of possibilities to transfer it into daily work routines, and the provision of working material. If necessary, the installation of items needed like posters, boxes, etc. was realized within that context as well. Staff who couldn't attend the meetings were trained individually afterwards. Additionally, the Safewards steering group with project managers of each ward met once a week to prepare, discuss, and reflect on the implementation process. After all interventions were implemented, a time slot of 30 min in each weekly staff meeting had been scheduled for the Safewards Model. This time was used for reflecting upon experiences, success, and difficulties regarding the realization of the Safewards Model as well as for discussing its expansion.

The implementation process left enough space for each ward to shape according to their needs and their specific conditions and preferences. This procedure was chosen from the director of the department and the nursing director in order to enable the team to identify well with the Safewards Model.

(3) Evaluation of the Implementation

The implementation of the Safewards Model was evaluated as part of a quality improvement initiative in the two locked wards of the department. Two members of the research team (JB and DJ) were responsible for compiling data. None of them were part of the clinical team or somehow else embedded in the implementation process. The study is a hybrid between an implementation study and an effectiveness study that is supposed to bring about scientific evidence on implementation challenges and outcomes as well as on the real-world effects of an evidence-based intervention (52). Sociodemographic (*age, sex, nationality*), disease-related (*main diagnosis*), and hospital-related (*ward*) data were collected from routine basic documentation for all patients who were exposed to coercive interventions. Furthermore, all coercive interventions that had been applied in these wards within 11 weeks before (t0) and 11 weeks after (t1) the implementation period of the Safewards Model were analyzed. Coercive interventions were defined as all actions taken against a patient's will that limit his personal freedom or harm his physical integrity (53). They are only applied in emergency situations posing an acute risk of harm to self or others. At Vivantes Hospital Am Urban, three forms of coercive interventions—*mechanical restraint*, *forced medication*, and *limitation of freedom of movement*—as well as their combinations were applied and analyzed. *Mechanical restraint* (fixation) is defined as the use of a restrictive device to restrict the person's free movement. In the respective locked wards, this device comprises of a set of limb cuffs and straps attached to a bed. Mechanical restraint is applied in emergency situations when no other measures to avoid harm for the person or for others including staff have been successful. *Forced medication* is defined as the involuntary administration of oral or intramuscular medication undertaken without the consent of the person being treated. It is only applied if either a) mechanical restraint was not enough to calm a patient down or he or she is (still) in danger to physically harm him- or herself, or b) a treatment order under the Berlin mental health act was made, or if c) a treatment order under the conditions of legal guardianship was made. In most cases, forced medication implies 5 to 10 min of physical restraint for administering the medication. *Limitation of freedom of movement* refers to the confinement of a patient in their room. In this time frame, he or she is allowed to leave the room only for specific purposes and for a limited time period. Limitation of freedom of movement is applied if patients are not able to keep the appropriate distance to other patients and to prevent patients form sensory overload, especially in manic phases. This form of containment has to be distinguished from "seclusion." Seclusion is generally defined as the supervised confinement of a person alone in a room where the door cannot be opened from the inside. In the psychiatric inpatient units participating in our study, seclusion in a locked room was not applied.

We analyzed frequency and duration of the above stated three forms of coercive measures since previous empirical research showed and official recommendations suggested them to be practical measures of containment (33, 53–55).

For assessing fidelity to the Safewards Model, JB conducted the Organization Fidelity Checklist (32, 33) 4 to 8 months after the end of the implementation process. The checklist is a valid and reliable instrument for evaluating the quality and fidelity of 8 of the 10 Safewards interventions. It was applied in each ward separately. The Organization Fidelity Checklist reflects evidence that was on display, rather than the degree to which staff engaged with and used the displayed material (56). Criterions focusing on the use of an intervention in the ward ("0 = no", "1 = yes") were assessed regarding the interventions *Clear Mutual Expectations*, *Talk Down*, *Soft Words,* and *Discharge Messages*. Frequency of use was assessed regarding the interventions *Know Each Other* ("number of profiles: 1–≥10"), *Calm Down Methods* ("frequency of use: 1–≥10"), *Discharge Messages* ("number of discharge messages visible: 1–≥10"), *Mutual Help Meeting* ("number of meetings: 1–≥10"), and *Positive Words* ("number of handovers: 1–≥10"). Deviating from the original checklist, we did not count frequencies "since the last visit" but "since the end of the implementation process," since fidelity was only checked once after the end of the implementation period.

Statistical Analysis

The statistical plan was developed as basis for the evaluation before the implementation of the Safewards Model. Data analysis for descriptive statistics [frequency distribution (n), percentage distribution (%), mean (M), standard deviation (SD), and range] as well as for interferential statistics (chi-square test, unpaired t test, and Mann–Whitney test) was carried out using IBM SPSS Statistics 22. The quantification of the pre–post differences was determined by effect sizes (57). Benchmarks of coercive interventions (*percentage of patients exposed to coercive interventions*, *mean duration of coercive interventions*, *cumulative duration of coercive intervention per patient*, *average amount of coercive interventions per patient*, *duration of coercive interventions regarding the overall duration of stay*) were calculated according to official recommendations from the German Working group for the Prevention of Violence and Coercion in Psychiatry (12). Power calculation was not performed in advance due to a lack of solid data on coercive measures currently applied in acute psychiatry in Germany. Statistical significance was defined as p values of 5% or less.

RESULTS

Implementation

All Safewards interventions were fully implemented in both wards. In ward B, the implementation was done according to the planned timeline. In ward A, the implementation process had to be paused for 8 months due to excessive workload and a major change in the team composition. Fidelity assessment after the implementation showed high model fidelity. The interventions *Clear Mutual Expectations* ("yes"), *Talk Down* ("yes"), *Soft Words* ("yes"), *Discharge Messages* ("yes," "number of discharge messages visible: ≥10"), *Know Each Other* ("number of profiles: ≥10"), *Calm Down Methods* ("frequency of use: ≥10"), *Mutual Help Meeting* ("number of meetings: ≥10"), and *Positive Words* ("number of hand over: ≥10") were fully implemented in both units according to the Safewards Model.

Coercive Measures

Overall, in the two psychiatric wards, coercive interventions were performed on 250 occasions (ward A: $n_{t0} = 79$, $n_{t1} = 93$; ward B: $n_{t0} = 57$, $n_{t1} = 21$) in 103 patients (ward A: $n_{t0} = 34$, $n_{t1} = 41$; ward B: $n_{t0} = 20$, $n_{t1} = 8$) within the two study periods (t0 and t1). **Table 1** shows sociodemographic and disease-related data of patients that were exposed to coercive measures for each ward separately.

The age range of patients subjected to coercive interventions overall was 17 to 91 years [ward A: $\text{mean}_{\text{case}}$: 37.6 ± 12.8 ($n = 171$); $\text{mean}_{\text{patient}}$: 26.9 ± 14.2 ($n = 74$); ward B: $\text{mean}_{\text{case}}$: 39.9 ± 8.4 ($n = 78$); $\text{mean}_{\text{patient}}$: 35.6 ± 10.7 ($n = 28$)]. The term patient(-wise) refers to the number of patients who were exposed to coercive measures while the term case(-wise) refers to the number of coercive interventions that have been applied.

Patients exposed to coercive interventions before the implementation of the Safewards Model did not differ from patients who were subjected to these interventions afterwards regarding age, sex, nationality, and diagnosis group.

As seen in **Figures 1** and **2**, proportionally less people were exposed to coercive measures after the implementation of the Safewards Model in both wards with regard to the overall number of patients. However, the decrease was statistically significant only in ward B [χ^2 (1, $n = 281$) = 6.40, $p = 0.01$]. **Figure 3** shows that there was no interaction between time and ward.

Figures 4 and **5** indicate that the range of all coercive interventions per patient decreased in both wards (ward A: $\text{range}_{t0} = 1–26$, $\text{range}_{t1} = 1–10$; ward B: $\text{range}_{t0} = 1–15$, $\text{range}_{t1} = 1–13$). Furthermore, it shows that fewer patients were exposed to multiple occasions of coercive measures after the implementation of the Safewards Model.

Figures 6 and **7** display the percentage of patients exposed to the specific methods of coercive interventions at least once during their hospital stay in relation to the overall number of patients analyzed for each ward separately. Herby, one patient can have experienced multiple forms of interventions.

Results relating to duration of coercive interventions (case-wise) for each ward separately are displayed in **Table 2**. As seen

TABLE 1 | Sociodemographic and disease-related data per ward with regard to patients that were exposed to coercive interventions before (t0) and after (t1) the implementation of the Safewards Model ($n_{\text{ward A}} = 75$; $n_{\text{ward B}} = 28$).

Variable	Variable label	Ward A n (%)		Ward B n (%)	
		t0	t1	t0	t1
Sex	Male	24 (70.6)	24 (58.5)	15 (75.0)	6 (75)
Nationality	German	30 (88.2)	33 (80.5)	18 (94.7)	8 (100)
Diagnosis group	F01 Organic, including symptomatic, mental disorders	1 (2.9)	–	–	–
	F1X Mental and behavioral disorders due to psychoactive substance use	10 (29.4)	10 (24.4)	6 (30.0)	1 (12.5)
	F2X Schizophrenia, schizotypal, and delusional disorders	15 (44.1)	20 (48.8)	11 (55.0)	5 (62.5)
	F3X Affective disorders	2 (5.9)	6 (14.6)	2 (10.0)	2 (25.0)
	F4X Neurotic, stress-related, and somatoform disorders	–	2 (4.9)	–	–
	F6X Disorders of adult personality and behavior	4 (11.8)	3 (7.3)	1 (5.0)	–
	F7X Mental retardation	1 (2.9)	–	–	–
	F9X Unspecified mental disorder	1 (2.9)	–	–	–

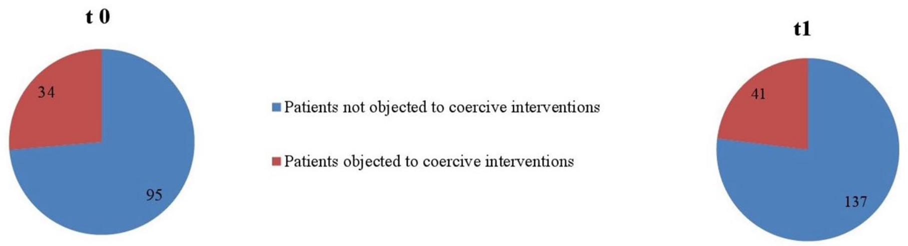

FIGURE 1 | Number of patients objected to coercive interventions in relation to the overall number of patients in ward A ($n_{t0} = 129$, $n_{t1} = 178$).

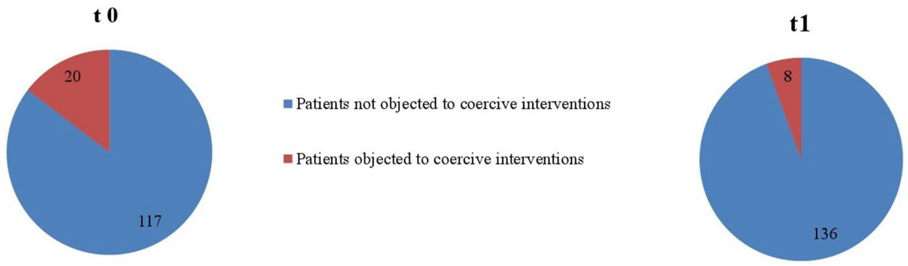

FIGURE 2 | Number of patients objected to coercive interventions in relation to the overall number of patients in ward B ($n_{t0} = 137$, $n_{t1} = 144$).

there, the duration of coercive interventions overall decreased case-wise in ward B significantly after the implementation of the Safewards Model.

On average, patients exposed to coercive interventions experienced these interventions during their hospital stay in ward A 2.33 times before and 2.27 times after and in ward B 2.85 times before and 2.63 times after the implementation of the Safewards Model. Total duration of coercive interventions in relation to the overall duration of the hospital inpatient stay decreased in ward A from 17% before to 12% and in ward B from 7% to 1% after the implementation of the Safewards Model. Coefficients regarding the cumulative duration of coercive interventions per patient, another important benchmark of coercive interventions, are displayed in **Table 3**.

DISCUSSION

This is the first study that evaluated the implementation of the Safewards Model in locked acute psychiatric wards in the German health care context with regard to coercive measures. The characteristics of the patient population regarding age range and distribution are in line with numerous other surveys, e.g., a study by Adorjan et al. that evaluated the use of coercive measures

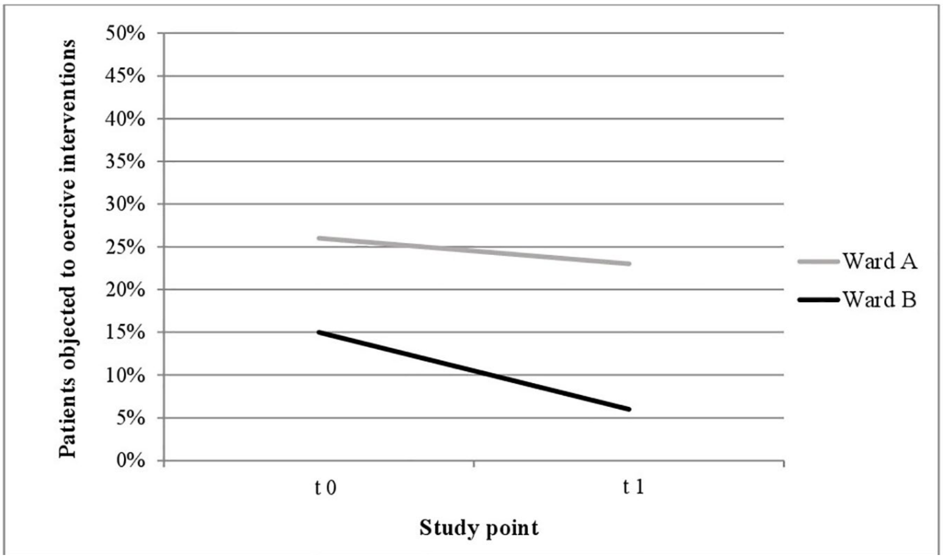

FIGURE 3 | Descriptive change in coercive interventions (patient-wise) in relation to the overall number of patients in ward A (n_{t0} = 129, n_{t1} = 178) and ward B (n_{t0} = 137, n_{t1} = 144).

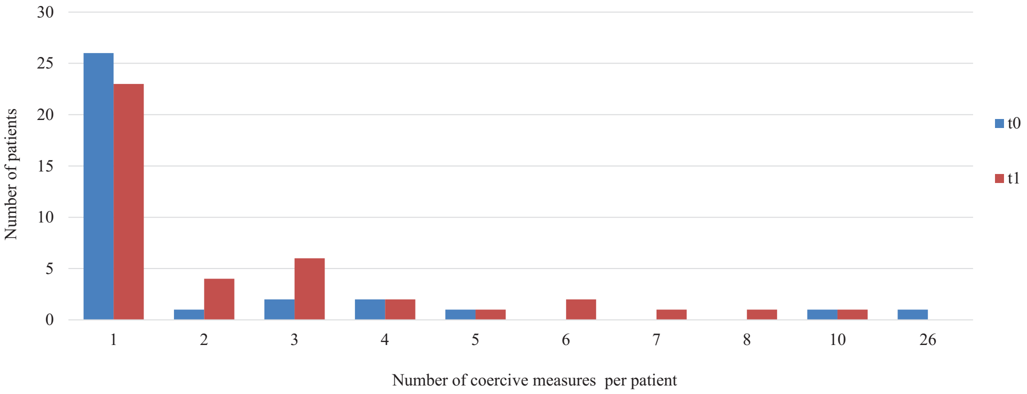

FIGURE 4 | Number of coercive measures per patient in ward A (n_{t0} = 34, n_{t1} = 41).

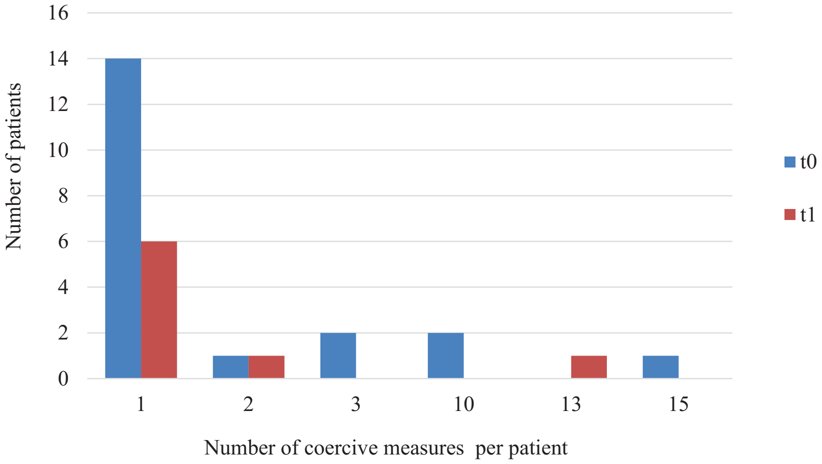

FIGURE 5 | Number of coercive measures per patient in ward B (n_{t0} = 20, n_{t1} = 8).

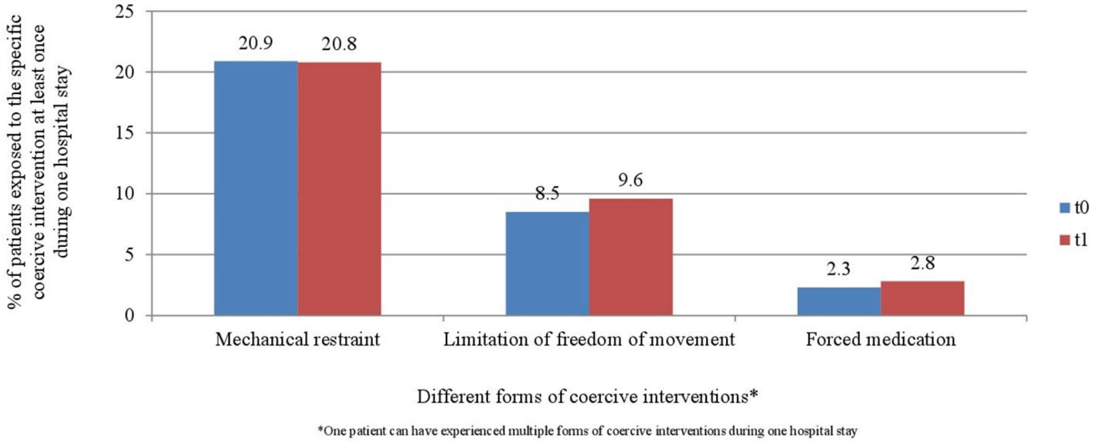

FIGURE 6 | Percentage of patients exposed to the specific methods of coercive interventions in relation to the overall number of patients before and after the implementation of the Safewards model in ward A (n_{t0} = 129, n_{t1} = 178).

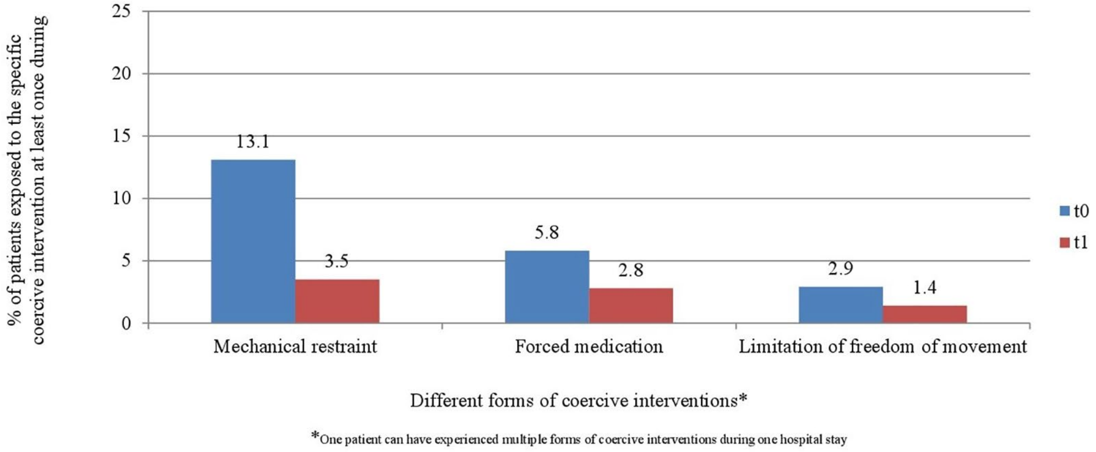

FIGURE 7 | Percentage of patients exposed to the specific methods of coercive interventions in relation to the overall number of patients before and after the implementation of the Safewards model in ward B (n_{t0} = 137, n_{t1} = 144).

in eight German psychiatric hospitals (58). Other studies also found coercive measures to be most commonly used in patients with schizophrenia (59) followed by patients with substance use disorders (58, 60). A further German study found patients with an organic mental disorder to be most commonly exposed to coercive measures followed by patients with a schizophrenic disorder (12). However, this study is only partially comparable to ours since patients with organic disorders at Vivantes Hospital Am Urban are usually admitted to a special ward for older people with mental health problems. In line with other studies, most patients in our study experienced coercive interventions only once during their hospital stay, while the range of occasions of coercive interventions per patient was rather small (59). Overall, it can be assumed that the use of coercive interventions presented in our study can be generalized to other German psychiatric hospitals.

The quality of the implementation showed high fidelity to the Safewards Model. High fidelity was also found in other studies outlining positive results of the implementation of the Safewards Model regarding the reduction of coercive interventions (32, 33). At the same time, it must be considered that the fidelity checklist evaluates only the objective, visible evidence of the application of the Safewards Model. It does not indicate the degree to which staff is engaged with the principles of the model or rather the staff's attitude toward the Safewards Model. Thus, fidelity outcomes

TABLE 2 | Duration of coercive interventions per case separated by ward before (t0) and after (t1) the implementation of the Safewards Model (reported in hours).

Variable[1,2]	**t0**				**t1**				***U* value**	***p* value**	**ES**[2]	**95% CI**
	n	**Range**	**Mean**	**SD**	***n***	**Range**	**M**	**SD**				
Coercive interventions overall	132	0.08–1860.82	64.7	273.80	113	0.08–953.73	28.7	105.16	0.673	0.673	–0.169	–0.42, 0.083
Ward A	77	0.17–1860.82	92.2	348.32	92	0.08–953.73	34.3	115.86	–0.537	0.591	–0.232	–0.535, 0.072
Ward B	55	0.08–648	26.2	92.30	21	0.08–31.23	3.9	7.67	–2.142	0.032	–0.282	–0.787, 0.222
Mechanical restraint	80	0.17–43.75	6.5	7.70	60	0.08–36.5	6.3	7.98	–0.809	0.419	–0.026	–0.361, 0.309
Ward A	62	0.17–43.75	6.8	7.92	57	0.08–36.5	6.5	8.11	–0.902	0.367	–0.037	–0.397, 0.322
Ward B	18	0.17–28	5.6	7.00	3	0.67–5.67	2.4	2.86	–1.257	0.209	–0.479	–1.709, 0.752
Forced medication	4	0.08–0.17	0.2	0.04	1	0.08	.08	–	–1.225	0.221	–	–
Ward A	1	0.17	0.2	–	–	–	–	–	–	–	–	–
Ward B	3	0.08–0.17	0.1	0.05	1	0.08	.08	–	–1.000	0.317	–	–
Forced medication and mechanical restraint	17	0.08–6	1.2	1.62	19	0.08–10.75	1.5	2.75	–0.736	0.462	0.131	–0.524, 0.786
Ward A	2	0.17–0.83	0.5	0.47	5	0.08–5.83	2.5	2.15	–1.162	0.245	1.034	–0.693, 2.761
Ward B	15	0.08–6	1.3	1.71	14	0.08–10.75	1.2	2.92	–0.458	0.647	–0.042	–0.771, 0.686
Forced medication and limitation of freedom of movement (Ward A)	–	–	–	–	1	–	1.4	–	–	–	–	–
Limitation of freedom of movement	30	0.5–1860.8	265.6	533.33	32	0.42–953.73	88.4	186.22	–0.211	0.833	–0.427	–0.93, 0.077
Ward A	11	6–1860.8	604.0	765.16	29	0.42–953.73	95.5	194.47	–1.895	0.058	–1.192	–1.934, –0.451
Ward B	19	0.5–648	69.6	149.89	3	10. 98–31.23	19.2	10.68	0.886	0.929	–0.354	–1.576, 0.868

[1]Cases lacking information of duration of coercive intervention (n = 2) and cases with implausible values (n = 3) were excluded from the analysis regarding duration of coercive interventions. [2]Interpretation of the effect sizes according to Cohen (57): d = 0.2 to d = 0.4: small effect, d = 0.5 to d = 0.7: medium effect, d ≥ 0.8: large effect.

TABLE 3 | Cumulative duration of coercive interventions per patient separated by ward before (t0) and after (t1) the implementation of the Safewards Model (reported in hours).

Variable[1]	**t0**			**t1**			***U* value**	***p* value**	**ES**[2]	**95% CI**
	n	**Mean**	**SD**	***n***	**Mean**	**SD**				
Coercive interventions overall	51	167.52	461.86	49	66.07	168.35	–0.100	0.920	–0.29	– 0.684, 0.105
Ward A	33	215.17	539.99	41	76.99	182.31	–0.098	0.922	–0.359	–0.821, 0.103
Ward B	18	80.17	256.97	8	10.14	12.02	–0.556	0.579	–0.324	–1.161, 0.514
Mechanical restraint	38	13.75	25.06	35	10.85	17.06	–0.806	0.420	–0.134	–0.594, 0.325
Ward A	25	16.84	30.16	32	11.64	17.63	–0.667	0.504	–0.217	–0.742, 0.307
Ward B	13	7.80	7.67	3	2.36	2.86	0.139	0.139	–0.756	–2.038, 0.527
Forced medication	3	0.2	0.05	1	0.08	–	0.157	0.157	–	–
Ward A	1	0.17	–	–	–	–	–	–	–	–
Ward B	2	0.21	0.06	1	0.08	–	–1.225	0.221	–	–
Forced medication and mechanical restraint	9	2.21	2.57	8	3.60	3.36	–1.155	0.248	0.469	–0.496, 1.435
Ward A	2	0.5	0.47	5	2.47	2.15	–1.162	0.245	1.017	–0.707, 2.741
Ward B	7	2.7	2.74	3	5.5	4.65	–1.254	0.210	0.842	–0.56, 2.244
Forced medication and limitation of freedom of movement (Ward A)	–	–	–	1	1.42	–		–	–	–
Limitation of freedom of movement	14	569.05	709.93	18	157.09	239.85	–1.767	0.077	–0.821	–1.548, –0.095
Ward A	10	664.42	778.60	16	173.13	250.45	–1.503	0.133	–0.952	–1.783, –0.12
Ward B	4	330.60	509.12	2	28.73	3.54	–1.852	0.064	–0.685	–2.426, 1.056

[1]Cases lacking information of duration of coercive interventions (n = 2) and cases with implausible values (n = 3) were excluded from the analysis regarding duration of methods of coercive interventions. [2]Interpretation of the effect sizes according to Cohen (57): d = 0.2 to d = 0.4: small effect, d = 0.5 to d = 0.7: medium effect, d ≥ 0.8: large effect.

do not indicate whether and to what extent staff members have internalized the overall idea of the Safewards Model. They also do not show if staff is successfully applying it in everyday work routine.

The fact that results regarding frequency and duration of coercive measures differ substantially between wards underlines these aspects. This phenomenon is well-known from previous reports where engagement with the Safewards Model varies between wards and even within wards (2). Reasons discussed for those differences on the level of wards are number, education, resilience, professional self-conception, professional experience, stress level, and personality of employees (59). In our study, there are several aspects in both wards that might contribute to the differences in results. In ward A, e.g., there had been a change of the consultant psychiatrist during the implementation period. This might have led to uncertainty within the team regarding several care aspects such as—among others—the application of coercive measures. Further uncertainty was brought into the team through high staff turnover during the implementation period. The unexpected and sudden termination of the head nurse resulted in a longer period of vacancy and team guidance and affected the team and its care routines. Additionally, age and professional experience of staff in ward A was lower than that in ward B. These circumstances as well as the lack of additional time or staff resources for the implementation resulted in a disruption of the process in ward A for 8 months. The aspects mentioned above—high staff turnover, little professional experience, lack of additional resources—can be regarded as barriers for the implementation process. On the other hand, there were several circumstances in ward B that might have facilitated the implementation of the Safewards Model and the reduction of the use of coercive measures there. First of all, ward B was led by one and the same consultant psychiatrist for several years—a fact that enhanced stability and routine in the team. Furthermore, this psychiatrist was engaged in the reduction of coercive measures for a long time through other contexts. Additionally, the team had hardly any turnover for a long period of time and was familiar to applying standards in dealing with conflicts and containment. One change of staff that occurred before the implementation of the Safewards Model—the change of the head nurse—had been prepared for several years and thus brought hardly any uncertainty or disturbances into the team. The outlined aspects—stable staffing, higher professional experience, stringent policy of dealing with conflict, and containment over a longer time—can be regarded as facilitators of the implementation process. For further studies, named variables should be included into the evaluation of the implementation in order to gain further insight into Safewards implementation success factors.

We found that the amount of patients exposed to coercive interventions in relation to the overall number of patients—the most important indicator for coercive interventions—as well as the mean duration of coercive interventions were significantly lower after the implementation of the Safewards Model. Furthermore, we found a decrease in the range of coercive interventions per patient, in the number of coercive measures per patient, and in the total time spent under coercive circumstances in relation to the overall duration of the hospital inpatient stay after the implementation of the Safewards Model. These results are in line with outcomes found in a randomized controlled trial that investigated the implementation of the Safewards Model (32). Furthermore, our results are similar to those of studies that evaluated interventions focusing on de-escalation and anti-aggression staff training aiming at reducing coercive interventions (16).

There are some studies that did not find positive changes in coercive measures after the implementation of the Safewards Model (36) or other methods aiming at reducing coercive interventions in hospitals (55). In the study of Price et al. (36), however, contrary to ours, staff acceptance and adherence to the intervention were low. One reason for the positive changes found in our study could be the fact that staff opted for the implementation of the Safewards Model. Thus, only motivated staff members supporting the model were present at follow-up. Nevertheless, we did not find a significant reduction in the frequency of forced medication as opposed to a large retrospective register study (13). Furthermore, relatively wide confidence intervals suggested varying success with implementation of the Safewards Model (32). In order to consolidate and expand positive changes after implementing the Safewards Model, staff should reflect upon their experience with the interventions and refresh its contents regularly. This could be realized, e.g., within team meetings, supervision, and appropriate training (61). Further important aspects for a sustainable reduction of coercive interventions were found to be adequate staffing and low staff turnover (3). Time and material resources are further aspects needed to successfully implement alternative methods for reducing conflict and containment (3). Regular assessment of frequency and duration of coercive interventions through routine data over time would give insight if efforts undertaken are effective and sustainable.

Results are presented with regard to each coercive intervention separately for outlining the large differences in frequency and duration of the use of the different kinds of coercive interventions. This mode of presentation is in line with recommendations as well as other studies on coercion (13, 33, 59, 62). Our mode of presentation differs from studies that presented results separately for each diagnostic group (12). To our point of view, this would not have been reasonable for this study because most diagnostic groups comprised only a small number of patients.

Comparable to other studies, mechanical restraint was the most commonly used form of coercive measure in our study (58). While the average number of coercive interventions per patient in our study was lower, the mean duration and the cumulative duration of coercive interventions overall were higher than in another German study (62). These differences may be explained by the long duration of limitation of freedom of movement in the study hospital. In contrast to seclusion, this milder method of containment can be applied over a longer period and thus biases sum cores on the overall duration of coercive interventions. The study wards had no locked rooms, and thus no seclusion, but only arrangements to stay in the patient room for a certain time period were enforced. The named differences could also be explained by the fact that we evaluated coercive interventions in two acute wards in one hospital and did not look at wards in different psychiatric hospitals. It is known, however, that clinical factors, such as high levels of psychotic symptoms and high levels of perceived coercion at admission are discussed as being associated with the use of coercive measures (4). The heterogeneous databases of other studies could also explain the comparatively higher number of patients exposed to coercive interventions in relation to the overall number of patients in our study (55, 58, 62). Another explanation would be differences in documentation between hospitals (59). To underpin our findings and check for their sustainability, our study needs to be repeated within a controlled study design with more participants and over a longer period. Since the implementation of the Safewards Model has positive effects in different health systems, it is a promising approach for the reduction of coercive measures in acute psychiatry.

Limitations

The study has several limitations. Since the Safewards Model was implemented in both acute mental health wards during the same time period, i.e., the whole acute sector of the hospital, with joint workshops as part of a hospital-wide approach, randomization and a control group design were not possible. A control group would have resulted in the Safewards Model being implemented in one ward 1 year later. With a pre–post study, we did not have control over other elements possibly affecting the outcomes. Therefore, inferences must be drawn with caution, and changes might not be fully attributed to the intervention. Results might be biased due to a change of staff members during the evaluation period and an implementation pause in one ward. Furthermore, data on coercive interventions were only gathered over a period of 11 weeks, which might have biased the results due to seasonal fluctuations regarding the number of patients admitted to the wards. Nevertheless, this is the first study that evaluates the implementation of the Safewards Model in acute inpatient psychiatry or rather in locked wards in Germany. It provides evidence of positive effects regarding the reduction of coercive interventions. Our study results add to the evidence base of the Safewards Model as a complex intervention that applies some of the six core strategies (6CS) identified by the US National Association of State Mental Health Program Directors Medical Directors Council (63). These account as critical elements of success to reduce restraint and seclusion in mental health care. Safewards, 6CS, and other complex approaches aim at building a more therapeutic environment with outcomes according to intervention fidelity and facility or ward characteristics and patterns (64).

ETHICS STATEMENT

An ethics approval for the study conducted was not required. The Department of Psychiatry, Psychotherapy and Psychosomatic Medicine at Vivantes Hospital Am Urban in Berlin is obligated by German law to record all coercive measures conducted regarding sort and duration. Once a year, the hospital reports these data to Berlin senate ("Senatsabfrage der Zahlen von Unterbringung und Sicherungsmaßnahmen"). In this manuscript, we exclusively analyzed data that had been collected for this purpose. The acquisition of data regarding coercive measures does not affect or compromise any patients and does not include patient contact at all, because it is recorded in corresponding hospital documents by hospital staff right after the coercive measure was carried out.

AUTHOR CONTRIBUTIONS

All authors listed have made substantial, direct, and intellectual contribution to the work and approved it for publication.

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Corrigendum: Preventing and Reducing Coercive Measures—An Evaluation of the Implementation of the Safewards Model in Two Locked Wards in Germany

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Keywords: Safewards Model, conflict, coercive measures, acute psychiatric care, inpatient treatment, locked ward

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A Corrigendum on

Preventing and Reducing Coercive Measures—An Evaluation of the Implementation of the Safewards Model in Two Locked Wards in Germany
by Baumgardt, J., Jäckel, D., Helber-Böhlen, H., Stiehm, N., Morgenstern, K., Voigt, A., et al. (2019). Front. Psychiatry 10:340. doi: 10.3389/fpsyt.2019.00340

In the original article, there was an error. In the article it says we analyzed a period of 10 weeks before and after the implementation of the Safewards model. Actually, we analyzed a period of 11 weeks. Furthermore, in the article it says we compared the amount of patients exposed to coercive interventions with patients admitted to the same ward at the same time. Actually, we compared patients exposed to coercive interventions with the overall amount of patients staying at the same time. Additionally, the amount of patients overall was incorrect due to inaccurate information from our in-house hospital system, which we were only recently informed about. This only affected analysis or ratios where we compared patients exposed to coercive measures with patients who were not exposed to coercive measures. However, the direction of the effects stayed the same (=with regard to the overall number of patients proportionally less people were exposed to coercive measures after the implementation of the Safewards Model in both wards) with a statistically significant effect only in ward B.

The fully corrected paragraphs are below:

The **Abstract**, subsection **Materials and Methods**:

"We evaluated outcomes of the implementation of the Safewards Model in two locked psychiatric wards in Germany. Frequency and duration of coercive interventions applied during a period of 11 weeks before and 11 weeks after the implementation period were assessed through routine data. Fidelity to the Safewards Model was assessed by the Organization Fidelity Checklist."

The **Abstract**, subsection **Results**:

"Fidelity to the Safewards Model was high in both wards. The overall use of coercive measures differed significantly between wards [case-wise: χ^2 (1, $n = 250$) = 35.34, $p \leq 0.001$; patient-wise: χ^2 (1, $n = 103$) = 21.45, $p \leq 0.001$] and decreased post-implementation. In one ward, the number of patients exposed to coercive interventions in relation to the overall number of patients decreased significantly [χ^2 (1, 281) = 6.40, $p = 0.01$]. Furthermore, the mean duration of coercive interventions overall declined significantly [U(55,21) = −2.142, $p = 0.032$] with an effect size of Cohen's $d = -0.282$ (95% CI: −0.787, 0.222) in that ward. Both aspects declined as well in the other ward, but not significantly."

The **Materials and Methods** section, subsection **(3) Evaluation of the Implementation**, paragraph 1:

"The implementation of the Safewards Model was evaluated as part of a quality improvement initiative in the two locked wards of the department. Two members of the research team (JB and DJ) were responsible for compiling data. None of them were part of the clinical team or somehow else embedded in the implementation process. The study is a hybrid between an implementation study and an effectiveness study that is supposed to bring about scientific evidence on implementation challenges and outcomes as well as on the real-world effects of an evidence-based intervention (52). Sociodemographic (*age, sex, nationality*), disease-related (*main diagnosis*), and hospital-related (*ward*) data were collected from routine basic documentation for all patients who were exposed to coercive interventions. Furthermore, all coercive interventions that had been applied in these wards within 11 weeks before (t0) and 11 weeks after (t1) the implementation period of the Safewards Model were analyzed. Coercive interventions were defined as all actions taken against a patient's will that limit his personal freedom or harm his physical integrity (53). They are only applied in emergency situations posing an acute risk of harm to self or others. At Vivantes Hospital Am Urban, three forms of coercive interventions—*mechanical restraint*, *forced medication*, and *limitation of freedom of movement*—as well as their combinations were applied and analyzed. *Mechanical restraint* (fixation) is defined as the use of a restrictive device to restrict the person's free movement. In the respective locked wards, this device comprises of a set of limb cuffs and straps attached to a bed. Mechanical restraint is applied in emergency situations when no other measures to avoid harm for the person or for others including staff have been successful. *Forced medication* is defined as the involuntary administration of oral or intramuscular medication undertaken without the consent of the person being treated. It is only applied if either a) mechanical restraint was not enough to calm a patient down or he or she is (still) in danger to physically harm him- or herself, or b) a treatment order under the Berlin mental health act was made, or if c) a treatment order under the conditions of legal guardianship was made. In most cases, forced medication implies 5 to 10 min of physical restraint for administering the medication. *Limitation of freedom of movement* refers to the confinement of a patient in their room. In this time frame, he or she is allowed to leave the room only for specific purposes and for a limited time period. Limitation of freedom of movement is applied if patients are not able to keep the appropriate distance to other patients and to prevent patients form sensory overload, especially in manic phases. This form of containment has to be distinguished from "seclusion." Seclusion is generally defined as the supervised confinement of a person alone in a room where the door cannot be opened from the inside. In the psychiatric inpatient units participating in our study, seclusion in a locked room was not applied."

The **Materials and Methods** section, subsection **Statistical Analysis**:

"The statistical plan was developed as basis for the evaluation before the implementation of the Safewards Model. Data analysis for descriptive statistics [frequency distribution (n), percentage distribution (%), mean (M), standard deviation (SD), and range] as well as for interferential statistics (chi-square test, unpaired t test, and Mann–Whitney test) was carried out using IBM SPSS Statistics 22. The quantification of the pre–post differences was determined by effect sizes (57). Benchmarks of coercive interventions (*percentage of patients exposed to coercive interventions, mean duration of coercive interventions, cumulative duration of coercive intervention per patient, average amount of coercive interventions per patient, duration of coercive interventions regarding the overall duration of stay*) were calculated according to official recommendations from the German Working group for the Prevention of Violence and Coercion in Psychiatry (12). Power calculation was not performed in advance due to a lack of solid data on coercive measures currently applied in acute psychiatry in Germany. Statistical significance was defined as p values of 5% or less."

The **Results** section, subsection **Coercive Measures**, paragraphs 1, 4, and 6:

"Overall, in the two psychiatric wards, coercive interventions were performed on 250 occasions (ward A: $n_{t0} = 79$, $n_{t1} = 93$; ward B: $n_{t0} = 57$, $n_{t1} = 21$) in 103 patients (ward A: $n_{t0} = 34$, $n_{t1} = 41$; ward B: $n_{t0} = 20$, $n_{t1} = 8$) within the two study periods (t0 and t1). Table 1 shows sociodemographic and disease-related data of patients that were exposed to coercive measures for each ward separately."

"As seen in **Figures 1** and **2**, proportionally less people were exposed to coercive measures after the implementation of the Safewards Model in both wards with regard to the overall number of patients. However, the decrease was statistically significant only in ward B [χ^2 (1, $n = 281$) = 6.40, $p = 0.01$]. **Figure 3** shows that there was no interaction between time and ward."

"**Figures 6** and **7** display the percentage of patients exposed to the specific methods of coercive interventions at least once during their hospital stay in relation to the overall number of patients analyzed for each ward separately. Herby, one patient can have experienced multiple forms of interventions."

The **Discussion** section, paragraphs 4 and 7:

"We found that the amount of patients exposed to coercive interventions in relation to the overall number of patients—the most important indicator for coercive interventions—as well as the mean duration of coercive interventions were significantly lower after the implementation of the Safewards

Model. Furthermore, we found a decrease in the range of coercive interventions per patient, in the number of coercive measures per patient, and in the total time spent under coercive circumstances in relation to the overall duration of the hospital inpatient stay after the implementation of the Safewards Model. These results are in line with outcomes found in a randomized controlled trial that investigated the implementation of the Safewards Model (32). Furthermore, our results are similar to those of studies that evaluated interventions focusing on de-escalation and anti-aggression staff training aiming at reducing coercive interventions (16)."

"Comparable to other studies, mechanical restraint was the most commonly used form of coercive measure in our study (58). While the average number of coercive interventions per patient in our study was lower, the mean duration and the cumulative duration of coercive interventions overall were higher than in another German study (62). These differences may be explained by the long duration of limitation of freedom of movement in the study hospital. In contrast to seclusion, this milder method of containment can be applied over a longer period and thus biases sum cores on the overall duration of coercive interventions. The study wards had no locked rooms, and thus no seclusion, but only arrangements to stay in the patient room for a certain time period were enforced. The named differences could also be explained by the fact that we evaluated coercive interventions in two acute wards in one hospital and did not look at wards in different psychiatric hospitals. It is known, however, that clinical factors, such as high levels of psychotic symptoms and high levels of perceived coercion at admission are discussed as being associated with the use of coercive measures (4). The heterogeneous databases of other studies could also explain the comparatively higher number of patients exposed to coercive interventions in relation to the overall number of patients in our study (55, 58, 62). Another explanation would be differences in documentation between hospitals (59). To underpin our findings and check for their sustainability, our study needs to be repeated within a controlled study design with more participants and over a longer period. Since the implementation of the Safewards Model has positive effects in different health systems, it is a promising approach for the reduction of coercive measures in acute psychiatry."

The **Discussion** section, subsection **Limitations**:

"The study has several limitations. Since the Safewards Model was implemented in both acute mental health wards during the same time period, i.e., the whole acute sector of the hospital, with joint workshops as part of a hospital-wide approach, randomization and a control group design were not possible. A control group would have resulted in the Safewards Model being implemented in one ward 1 year later. With a pre–post study, we did not have control over other elements possibly affecting the outcomes. Therefore, inferences must be drawn with caution, and changes might not be fully attributed to the intervention. Results might be biased due to a change of staff members during the evaluation period and an implementation pause in one ward. Furthermore, data on coercive interventions were only gathered over a period of 11 weeks, which might have biased the results due to seasonal fluctuations regarding the number of patients admitted to the wards. Nevertheless, this is the first study that evaluates the implementation of the Safewards Model in acute inpatient psychiatry or rather in locked wards in Germany. It provides evidence of positive effects regarding the reduction of coercive interventions. Our study results add to the evidence base of the Safewards Model as a complex intervention that applies some of the six core strategies (6CS) identified by the US National Association of State Mental Health Program Directors Medical Directors Council (63). These account as critical elements of success to reduce restraint and seclusion in mental health care. Safewards, 6CS, and other complex approaches aim at building a more therapeutic environment with outcomes according to intervention fidelity and facility or ward characteristics and patterns (64)."

Furthermore, the corrected **Figures 1–3**, **6**, **7** and their legends appear below. For **Figures 6**, **7**, we were told that the demonstration of "combined" forms of coercive interventions in addition to the "single" forms of coercive interventions (mechanical restraint - forced medication - limitation of freedom of movement) is confusing to the reader. Therefore, we split the "combined" forms and added it to the corresponding "single" form of coercive intervention.

The authors apologize for these errors and state that this does not change the scientific conclusions of the article in any way. The original article has been updated.

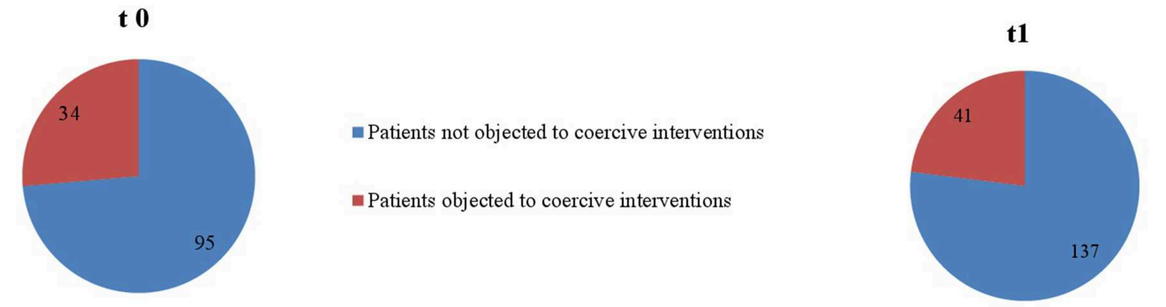


FIGURE 1 | Number of patients objected to coercive interventions in relation to the overall number of patients in ward A (n_{t0} = 129, n_{t1} = 178).

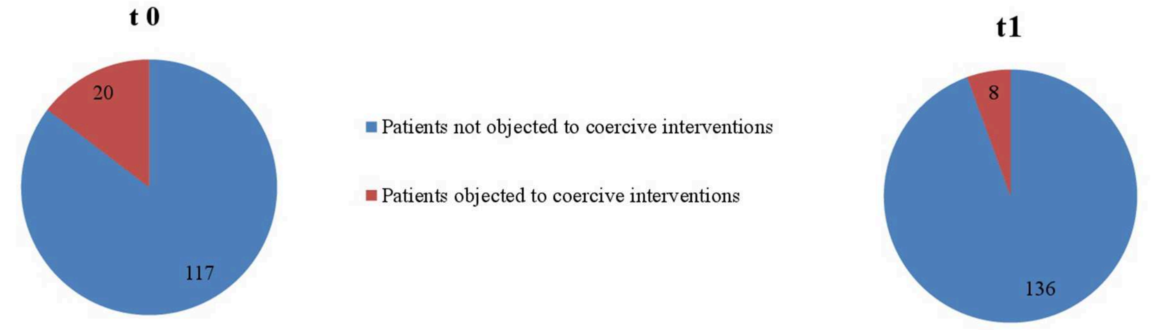


FIGURE 2 | Number of patients objected to coercive interventions in relation to the overall number of patients in ward B (n_{t0} = 137, n_{t1} = 144).

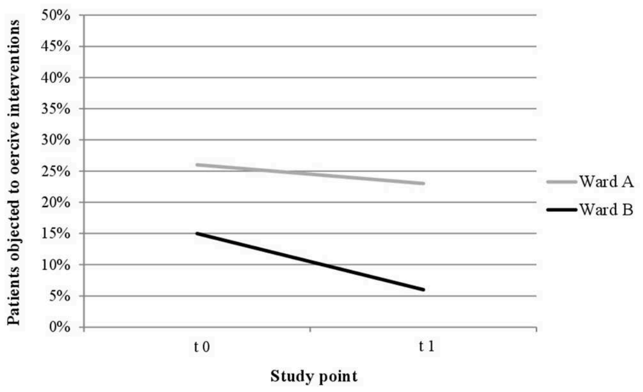
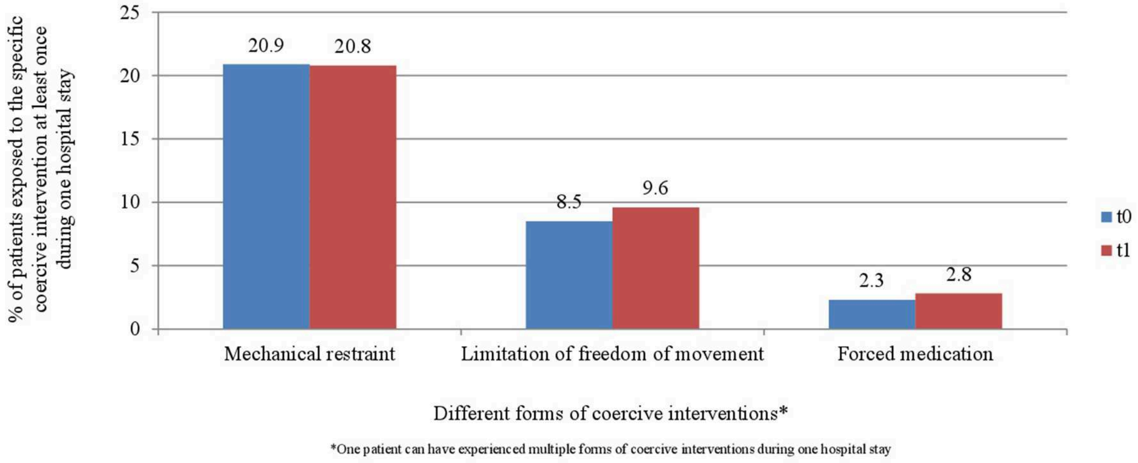
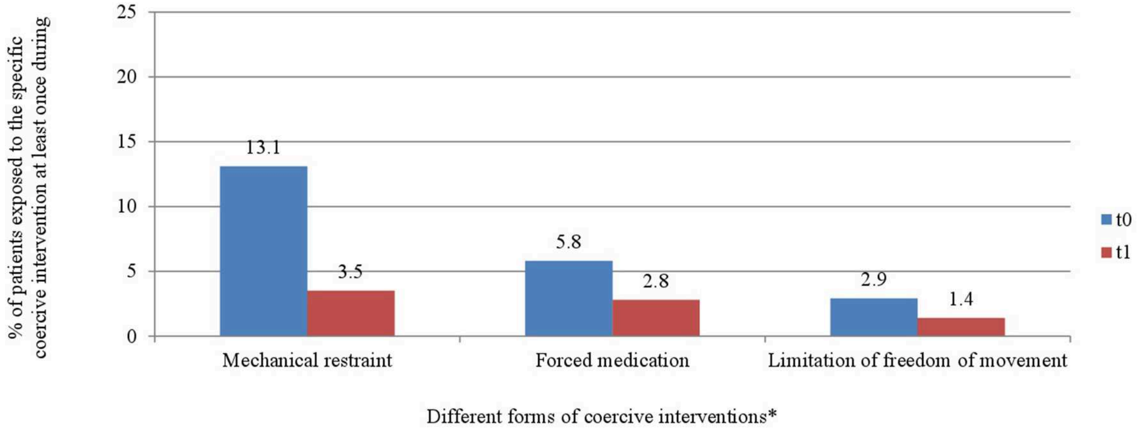


FIGURE 3 | Descriptive change in coercive interventions (patient-wise) in relation to the overall number of patients in ward A (n_{t0} = 129, n_{t1} = 178) and ward B (n_{t0} = 137, n_{t1} = 144).



*One patient can have experienced multiple forms of coercive interventions during one hospital stay

FIGURE 6 | Percentage of patients exposed to the specific methods of coercive interventions in relation to the overall number of patients before and after the implementation of the Safewards model in ward A (n_{t0} = 129, n_{t1} = 178).



*One patient can have experienced multiple forms of coercive interventions during one hospital stay

FIGURE 7 | Percentage of patients exposed to the specific methods of coercive interventions in relation to the overall number of patients before and after the implementation of the Safewards model in ward B (n_{t0} = 137, n_{t1} = 144).

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Perceived Institutional Restraint Is Associated With Psychological Distress in Forensic Psychiatric Inpatients

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Background: Patients in forensic mental health care experience internal and external coercion; the latter comprises different levels of institutional restraint. These restrictions of individual freedom are mainly justified by the safety interests of third parties and are not necessarily in the patients' best interests. The effects of such a setting on mentally disordered offenders' psychological state and treatment course are not fully understood. Assessing both patients' perception of restraint and psychopathological symptoms would allow us to better understand how restraint and psychopathology interact and how they might influence treatment.

Methods: In 184 forensic psychiatric inpatients, we assessed perception of institutional restraint with an adapted version of the Measuring the Quality of Prison Life (aMQPL) questionnaire and current psychological state with the Brief Symptom Checklist (BSCL) and Beck Hopelessness Scale (BHS).

Results: Perceived institutional restraint (as expressed in the aMPQL subscales *Transparency of procedures and decisions*, *Fairness*, and *Respect*) was associated with a higher general level of psychological symptoms. Furthermore, patients who perceived a lack of institutional transparency and respect were more likely to have higher scores for hostility, depression, and suicidal ideation. We also found age and sex differences, with higher levels of psychological symptoms in younger and female patients. The diagnosis and duration of detention did not relate to perceived restraint.

Discussion: Our results indicate that certain aspects of institutional restraint in long-term forensic inpatient settings correlate with certain psychological symptoms. The observed association might be explained by different kinds of factors: institutional (custodial focus), individual (self-efficacy, diagnosis, and personality), and situational (duration of detention). Although not all of these explanatory factors were addressed by the present study design, forensic mental health professionals should be aware of the relationship between perceived institutional restriction and psychopathology because it might influence treatment course and outcome.

Keywords: restraint, forensic psychiatry, psychological distress, perceived coercion, mandated treatment, suicidal ideation

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INTRODUCTION

Although coercion in forensic psychiatry shares common features with coercion in general psychiatry, it differs significantly concerning the justification of these measures on the basis of public safety interests, not only individual treatment goals. In forensic psychiatry, in virtually every case, the admission to treatment itself is a compulsory intervention. This difference has a major impact on the autonomy and freedom of forensic psychiatric inpatients and on the balance of power between staff and inpatients, and the structural and institutional features of forensic psychiatric inpatient settings are often more similar to those of prisons than health care settings. This raises the questions whether and how these conditions might influence the psychological state and treatment of mentally disordered offenders.

In psychiatry, coercion has been conceptualized as an external/objective action or an internal, subjective attitude (perceived coercion) or both and as often resulting from a compulsory action (1). Applied to forensic psychiatry, external coercion can be direct (such as involuntary medication or seclusion) and indirect (such as rules and regulations, decision making, atmosphere, and communication), whereby the latter represents institutional coercion. A review on direct physical coercion (i.e., seclusion, restraint, and involuntary medication) in forensic psychiatry found that younger and newly admitted patients tended to be secluded more often than older patients and that female patients were more likely to be restrained and secluded than male patients; furthermore, female patients tended to be restrained or secluded as a result of self-harm, whereas male patients were secluded or restrained as a result of harming others (2). Compared with general psychiatry [e.g., Refs. (3–5)], studies on the outcome coercive measures in forensic psychiatric treatment are rare.

To date, research on patients' perspectives of coercion in forensic psychiatry has mainly been performed on external, physical forms of coercion, namely, restraint, seclusion, and involuntary medication. In a comparison of forensic psychiatric patients' and general psychiatric patients' view of the experience of seclusion, the former more often described their seclusion as punishment, while one-third of both groups claimed not to understand why they were secluded (6). Another study in forensic psychiatric inpatients showed that patients had a negative perception of coercive treatment; however, over half of them declared that the treatment was necessary (mainly to prevent violence), and 16% to 36% even reported that the last episode of coercive treatment had been a positive experience (7). The most frequently reported negative effects of coercion were fear, loss of dignity, humiliation, and fearful loss of control (7). One can hypothesize that these effects might be greater if physical coercion occurs in an institutional context perceived as being highly restrictive. Furthermore, patients' perception of institutional coercion might have relevant effects on their psychological state, motivation, insight, and readiness to change.

Research on perceived institutional restraint in forensic psychiatry is rare. A recent review conceptualized perceived restrictiveness in forensic care across individual (i.e., relational, tangible), institutional (i.e., built environment, activities, culture, atmosphere, therapeutic aspects, security, practicality), and systemic (i.e., regulatory, temporal) levels; the amount of perceived restrictiveness depended on whether the focus of care was more caring (vs. custodial) and whether the resident was rated as risky (8). The authors stated that because of the negative outcomes of restrictive measures, it is necessary to reflect critically on practices, procedures, and policies in forensic care settings (8). Therefore, it seems important to better understand whether and how indirect coercion is associated with psychopathology. In this study, we focused on the relationship of institutional coercion with the psychological state of forensic psychiatric inpatients. We expected that patients who perceived their institution's measures as being overly restrictive, unfair, and arbitrary may have more difficulties with adjustment, expressed by a higher rate and broader range of psychological problems. The results might be relevant for establishing and evaluating institutional cultures in forensic mental health care.

METHODS

Participants

Forensic psychiatric inpatients were included if they were 18 years or older and if, in the opinion of the professionals responsible for their treatment, they were able to give informed consent (i.e., if they had no acute symptoms of a mental disorder and no intellectual disability). In total, $N = 184$ forensic psychiatric inpatients (female = 25) participated in the study. Because of missing values, the data of 54 participants were excluded. Thus, the final sample comprised 130 patients (female = 20). The patients were recruited between February and August 2018 at 10 of the 14 forensic mental health hospitals in the state of Bavaria, Germany. All patients were detained according to Section 63 (severe mental disorder, $n = 52$; 40%) or Section 64 (substance use disorder, $n = 78$; 60%) of the German penal code. The patients had a mean age of 35.64 years [range, 19–68; standard deviation (SD), 11.34] and had been treated for a mean of 34.18 months (range, 0–344; SD, 56.60). They were diagnosed with the following disorders according to International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10) criteria: substance-related disorder alone ($n = 65$; 50%), personality disorder alone ($n = 20$; 15%), schizophrenia alone ($n = 17$; 13%), depression alone ($n = 2$; 2%), comorbid substance-related disorder and personality disorder ($n = 12$; 9%), comorbid schizophrenia and personality disorder ($n = 3$; 2%), comorbid substance-related disorder and schizophrenia ($n = 4$; 3%), and other disorders ($n = 7$; 5%). The index offenses, i.e., the respective offense that led to the current admission, were as follows: 38 (29%) patients were convicted because of violations of the Narcotics Act; 28 (22%), because of aggravated assault; 19 (15%), because of rape or sexual assault; 15 (12%), because of homicide; 11 (8%), because of robbery; 9 (7%), because of theft; 4 (3%), because of arson; and 6 (5%), because of other offenses. A total of 26 (20%) patients had no educational qualifications; 59 (45%) had completed school to the end of grade 9 ("Hauptschulabschluss"), 32 (25%) had completed school to the end of grade 10 ("Realschulabschluss"), and 13 (10%) had graduated high school ("Abitur").

Procedures

The study was funded by the Ministry of Social Affairs, Free State of Bavaria, Germany, and approved by the ethics committee of the University of Ulm, Germany (application number: 174/17). It was performed in accordance with the Declaration of Helsinki.

Patients were informed about the study objectives and about the fact that neither participation nor non-participation would have any advantages or disadvantages with respect to their treatment. After receiving this information, they could decide whether they were willing to participate in the study or not. Patients who agreed to participate gave written informed consent and received a sheet with contact details. Participants were able to withdraw their consent at any time. The study protocol included instructions on how to inform the patient and therapist if the assessments indicated an acute risk of self-harm. Patients received neither financial nor non-financial compensation for their participation. They completed the questionnaires in small groups in a separate room on the ward, and a research assistant was available to provide help.

Assessments

In addition to collecting sociodemographic, clinical, and legal data (sex, age, education, duration of detention, diagnosis according to ICD-10, and index offense), we asked patients to complete three questionnaires measuring institutional restraint, psychological symptoms, and suicidal ideation.

Perceived Institutional Restraint

Perceived institutional restraint was measured with a translated and adapted version of the questionnaire Measuring the Quality of Prison Life (MQPL) (9). The questionnaire had been adapted to assess the specific living conditions in forensic inpatient treatment and perceived therapeutic support (10). The aMQPL consists of 64 items assigned to the following 11 subscales: *Entry to forensic psychiatry* (4 items, Cronbach's alpha = .599), *Relationship with fellow inmates* (4 items, Cronbach's alpha = .678), *Relationship with caregivers* (4 items, Cronbach's alpha = .843), *Relationship with therapists* (7 items, Cronbach's alpha = .860), *Family contact* (3 items, Cronbach's alpha = .588), *Transparency of procedures and decisions* (7 items, Cronbach's alpha = .810), *Fairness* (5 items, Cronbach's alpha = .817), *Respect* (6 items, Cronbach's alpha = .827), *Safety* (6 items, Cronbach's alpha = .800), *Quality of accommodation* (11 items, Cronbach's alpha = .788), and *Therapeutic offerings/personal development* (7 items, Cronbach's alpha = .853). The items were answered on a five-point Likert scale ranging from 1 (= I agree completely) to 5 (= I completely disagree). To evaluate the scores, we calculated the mean value of the subscales and of the entire scale. The higher the mean value, the more positively patients assess individual aspects of their quality of life (= subscales) or their overall quality of life (= total score). The aMQPL questionnaire has proven good reliability (Cronbach's alpha of total score: r = 0.951). The factor structure was analyzed by confirmatory factor analysis [$\chi^2(1{,}897) = 3{,}442.143$; $p < .001$; Bollen–Stine bootstrap corrected p value = .008; Root mean square error of approximation (RMSEA) = .067; 90% confidence interval: .064–.071]. To assess perceived institutional coercion, we performed additional analyses that included the total score and focused on the following three subscales: *Transparency of procedures and decisions* (example item "When important decisions are made about me, I am told how they came about"), *Fairness* (example item "Staff here treat patients fairly when applying the rules"), and *Respect* (example item "I feel cared about most of the time in this hospital").

Assessment of Psychological State

The BSCL (11) is a self-assessment instrument for measuring a broad range of psychological problems; the original version was published by Derogatis and Melisaratos in 1983 (12). The checklist contains a total of 53 items (total scale Cronbach's alpha = .97), distributed over the following nine subscales: *Hostility* (5 items, Cronbach's alpha = .72), *Anxiety* (6 items, Cronbach's alpha = .80), *Depression* (6 items, Cronbach's alpha = .88), *Paranoid ideation* (5 items, Cronbach's alpha = .80), *Phobic anxiety* (5 items, Cronbach's alpha = .72), *Psychoticism* (5 items, Cronbach's alpha = .81), *Somatization* (7 items, Cronbach's alpha = .80), *Interpersonal sensitivity* (4 items, Cronbach's alpha = .80), and *Obsession–compulsion* (6 items, Cronbach's alpha = .85). An example of one item on the *Hostility* subscale is "How much are you bothered by feeling easily annoyed or irritated?" The items are answered on a five-point Likert scale from 0 ("not at all") to 4 ("extremely"). For the evaluation, we calculated the arithmetic mean of the subscale items and the total scale (global score). According to the authors of the German version, the test–retest reliability of the global score after 1 week was $r = .87$. The subscale *Depression* showed satisfactory convergent validity ($r = .73$) with Beck's Depression Inventory (13) and various other clinical questionnaires ($r = .36$ to $r = .83$) (11).

Assessment of Suicidal Ideation

We used the German version of Beck's Hopelessness Scale (BHS) (14) to assess suicidal ideation. The BHS contains 20 items, each of which can be answered with "true" or "false" (example item: "My future looks gloomy"). Values are summed to create a total score (maximum: 20 points). The authors of the scale assume that total scores >9 indicate an increased risk of suicide. According to the Kuder–Richardson Formula 20, reliability coefficients range from $r = .72$ to $r = .97$. The BHS discriminates well between people with and without suicidal ideation (Hedge's g = .62 to 3.43) and also appropriately assesses the severity of suicidal ideation (Hedge's g = 1.19 to 1.97).

Data Analysis

A total of 12 linear regression analyses were calculated to assess the relationship between perceived institutional coercion and psychological state. The dependent variable was the BSCL global score or the subscale scores for *Hostility* and *Depression*. Predictors were the aMQPL total score or the mean values of the subscales *Transparency of procedures and decisions*, *Fairness*, and *Respect*, as well as sex and age.

In a next step, we used a binary logistic regression model to examine whether suicidal ideation (defined as total scores >9 in the BHS) was statistically predicted by the aMQPL total score; the mean values of the subscales *Transparency of procedures and decisions*, *Fairness*, and *Respect*; sex; and age.

To check whether patients' perceptions might be associated with the diagnosed mental disorder, we conducted an additional five linear regression analyses to statistically predict the aMQPL total score on the basis of the variables *duration of detention* (in months), *substance-related disorder* (yes/no), *personality disorder* (yes/no), *schizophrenia* (yes/no), and *depression* (yes/no). Sex and age were included as additional predictors.

As outlined in Section 2.1, all analyses were based only on cases without missing values (number of missing values by questionnaire: BSCL *Hostility*, *Depression*, and *Global* score $n = 3$; BHS $n = 18$; aMQPL $n = 53$). A complete case analysis implicitly assumes that a missing value is not related to the respective outcome. Thus, we assumed that participants with missing values did not systematically differ from those without missing values. The validity check showed no systematic violations of this assumption: BSCL *Hostility* $t(179) = -.350$, $p = .726$; BSCL *Depression* $t(179) = -.735$, $p = .463$; BSCL total score $t(179) = .047$, $p = .963$; BHS $\chi^2(1) = 2.662$; $p = .137$.

Data were analyzed with IBM SPSS Statistics for Windows Version 25 (Armonk, NY: IBM Corp).

RESULTS

Perceived Restraint and Psychological Symptoms

The results of the linear regression models to examine statistical predictors of psychological distress are shown in **Table 1** for the BSCL subscales *Hostility* and *Depression* and the *Global* score. The aMQPL total score was a significant predictor of the BSCL *Hostility*, *Depression*, and *Global* scores. Patients who rated their institution positively in terms of restraint had lower scores on the subscales *Hostility* ($f^2 = .27$; medium effect size) and *Depression* ($f^2 = .15$; small effect size) and had a lower *Global* score ($f^2 = .20$; medium effect size) (15). A similar result emerged for the subscales *Transparency of procedures and decisions* and *Respect*. The more positive the patients' rating for institutional transparency and respect, the less psychological distress they experienced. This applied to both the *Global* score and the two subscales *Hostility* and *Depression*. The aMQPL subscale *Fairness*, on the other hand, was only related to the BSCL subscale *Hostility*; i.e., the higher the perceived level of *Fairness*, the lower the *Hostility* score. Furthermore, the *Hostility* score was influenced by age; i.e., younger patients had higher levels of *Hostility*. The *Global* score was influenced by sex; i.e., female patients had higher global scores than male patients.

Perceived Restraint and Suicidal Ideation

The results of the binary logistic regression to examine which variables statistically predicted the likelihood of suicidal ideation, i.e., a BHS score > 9, are shown in **Table 2**. Perceived institutional restraint was a significant predictor, and patients who experienced little institutional restraint were less likely to have suicidal thoughts. Specifically, each additional point on the aMQPL total score reduced the risk of exceeding the BHS cutoff score by 4 (OR = 4.385; large effect size) (16). This relationship was also found for the subscales *Transparency of procedures and decisions* and *Respect*.

Perceived Restraint and Duration of Detention/Diagnosis

The results of linear regression models statistically predicting the aMQPL total score showed that neither the diagnosed mental disorder nor the duration of detention was associated with perceived institutional restraint (see **Table 3**).

DISCUSSION

The present study aimed to examine the association between perceived institutional restraint and forensic psychiatric inpatients' psychological state. To our knowledge, the data are among the first to describe the relationship of psychopathological symptoms and perceived restraint in mentally disordered offenders.

The main result of our study was that the assessed aspects of institutional coercion (aMQLP total score and *Transparency of Procedures and Decisions* and *Respect* subscale scores) correlated with distinct psychological symptoms, namely, hostility and depression, whereas the *Fairness* subscale was only associated with

TABLE 1 | Results of four linear regression models predicting the Brief Symptom Checklist score for the subscales *Hostility* and *Depression* and the *Global* score.

	Brief Symptom Checklist								
	Hostility			**Depression**			**Global score**		
	b	**SE(*b*)**	**beta**	**b**	**SE(*b*)**	**beta**	**b**	**SE(*b*)**	**beta**
Sex (reference category: male)	.276	.143	.154	.220	.156	.118	.292*	.122	.196*
Age (in years)	–.009*	.005	–.165*	–.007	.005	–.113	–.005	.004	–.106
aMQPL Total score	–.502**	.108	–.376**	–.432**	.118	–.312**	–.373**	.093	–.336**
R^2		.21			.13			.17	
aMQPL *Transparency*[1]	–.364**	.069	–.416**	–.282**	.076	–.311**	–.260**	.059	–.357**
aMQPL *Fairness*[1]	–.135*	.063	–.193*	–.081	.067	–.112	–.074	.053	–.127
aMQPL *Respect*[1]	–.353**	.071	–.399**	–.323**	.077	–.352**	–.261**	.061	–.354**

*b, unstandardized regression coefficient; SE(b), standard errors; beta, standardized regression coefficient; **p < .001; *p < .05; R^2, proportion of the variance in the dependent variable that is predictable from the independent variables; [1]Predictors sex and age were included in the model but are not displayed in the table.*

TABLE 2 | Results of four binary logistic regression models predicting suicidal ideation of Beck's Hopelessness Scale.

	Beck's Hopelessness Scale			
	b	**SE(*b*)**	**Exp(*b*)**	**95% Confidence interval Exp(*b*)**
Sex (reference category: male)	−.185	.631	.831	.241–2.864
Age (in years)	.007	.022	1.007	.965–1.051
aMQPL Total score	1.478*	.520	4.385*	1.584–12.141
Nagelkerke's R^2		.115		
aMQPL *Transparency*[1]	.894*	.330	2.445*	1.280–4.672
aMQPL *Fairness*[1]	−.042	.252	.959	.585–1.570
aMQPL *Respect*[1]	1.190*	.346	3.289*	1.669–6.481

*The binary dependent variable is being above the cutoff score (reference category: > 9); b, unstandardized regression coefficient; SE(b), standard error; Exp(b), odds ratio; **p < .001; *p < .05; [1]Predictors sex and age were included in the model but are not displayed in the table.*

TABLE 3 | Results of five linear regression analyses predicting the adapted version of the Measuring the Quality of Prison Life (aMQPL) total score.

	b	**SE(*b*)**	**beta**	**R^2**
Duration of detention	.001	.001	.135	.055
Substance-related disorder	−.069	.090	−.068	.045
Personality disorder	−.025	.098	−.023	.041
Schizophrenia	.197	.109	.158	.066
Depression	−.038	.136	−.025	.042

*b, unstandardized regression coefficient; SE(b), standard errors; beta, standardized regression coefficient; **p < .001; *p < .05; R^2, proportion of the variance in the dependent variable that is predictable from the independent variables. In all analyses, sex and age were included as predictors but are not displayed in the table.*

hostility. Furthermore, the aMQLP total score was a significant statistical predictor of these symptoms. However, because of methodological limitations, causal conclusions cannot be drawn, and our results must be interpreted with caution. Nevertheless, our study might be able to add the aspect of psychopathology to previous findings of an association between perceived restrictiveness and both a caring vs. custodial focus and the individual risk assessment (8). One interpretation of the results might be that certain psychopathological symptoms are a result of dysfunctional adjustment to restrictive external conditions and that specific institutional characteristics might provoke specific symptoms (illustrated by the sole association of the *Fairness* subscale with hostility). In line with this interpretation, perceived restraint of forensic–psychiatric inpatients could have similar negative effects as physical coercion (fear, loss of dignity, humiliation, and fearful loss of control) (7). This interpretation would correspond with the concept of self-efficacy, defined as the personal judgment of "how well one can execute courses of action required to deal with prospective situations" (p. 122) (17). One can hypothesize that a subgroup of forensic psychiatric inpatients experience their personal situation as being more out of internal control; this group would then have to be considered as especially vulnerable.

On the other hand, our findings might also be interpreted as the result of the patients' original mental disorder or personality traits (e.g., neuroticism) that were not assessed by our study design. However, as further statistical analysis showed, the diagnosis leading to admission had no influence on the perceived restraint. Nevertheless, co-occurring disorders or symptoms could have developed during detention, and they were not considered.

Furthermore, in our study, younger patients had higher hostility scores on the BSCL and female patients had a higher global symptom score. This result has to be interpreted in the context of the previous finding that in forensic psychiatry, younger patients tend to be secluded more often than older patients (2). If subgroups of patients actually are exposed to restrictive measures more often than others, they will probably perceive the institution as more restrictive. Both observations might also indicate different vulnerability levels—or different reporting behaviors—in subgroups of patients.

Another important factor that has to be considered is the duration of detention. The mean length of stay in our sample was nearly 3 years. According to previous studies, individuals in long-term detention experience a high amount of qualitative and quantitative symptom burden (18, 19). Although we did not find an association between duration of detention and perceived restraint, we cannot rule out that the psychological state is associated with the time spent in detention rather than with perceived restraint.

One of the major limitations of this study is the cross-sectional design, which does not allow causal conclusions to be drawn. The terms *predict* and *predictor* are used in conjunction with regression analysis and should be understood in a statistical sense only. It might also be the case that certain psychopathological symptoms lead to institutional conditions being perceived as restrictive, which would also be a possible explanation for each of the assessed symptoms (depression, hostility, and suicidal ideation). A further limitation is that we used only self-rating instruments to assess psychological symptoms and suicidal ideation. Combining self- and observer ratings and collecting data about suicide attempts and other self-harm from the medical records would probably have contributed to obtaining more robust data on the participants' psychopathological state. Additionally, we did not classify the participants' current psychological state according to common diagnostic criteria (DSM, ICD); thus, we were not able to exclude participants with disorders that had developed during detention. Such disorders (e.g., depressive episodes) might also have influenced the self-rating scales. Additionally, we did not use the established scales of the MQLP but an adapted version, the aMQLP; however, preliminary statistical analysis showed sufficient validity of the aMQLP. Finally, our results are from the German forensic mental health care system and are not generalizable to other countries. In our opinion, the participating hospitals properly represent low- and medium-security forensic mental health institutions in Germany; however, there may have been a selection bias in that only patients who felt overly restricted may have participated in the study.

In conclusion, our results might contribute to the research on institutional coercion in forensic psychiatry, because they add the aspect of individual psychopathology to the concept of perceived restriction in forensic–psychiatric care. Forensic mental health care professionals should be aware of perceived restraint as a potential indicator for the development of distinctive psychopathological symptoms and vice versa. Further research might use a design that allows causal conclusions to be drawn and also include a larger sample of inpatients and institutions. Additionally, the subjective perception of institutional restraint should be compared with an objective rating to control for individual factors (e.g., psychopathology, diagnosis, and personality). It would be of further interest to assess the influence of perceived institutional coercion on the therapeutic relationship and on specific outcome measures, such as disorder-specific psychopathology or the risk of re-offending.

ETHICS STATEMENT

All patients were informed about the objectives of the study, and all provided written informed consent. The study protocol included instructions on how to inform the patient and therapist if the assessments indicated an acute risk of self-harm. Patients received neither financial nor non-financial compensation for their participation. They completed the questionnaires in small groups in a separate room on the ward, and a research assistant was available to provide help. The study was approved by the local ethics committee (Ulm University, Ulm, Germany, No. 176/17).

AUTHOR CONTRIBUTIONS

MD, JS, IF, and MB designed the study; MB collected the data; JS analyzed the data; and JS, MD, and IF interpreted the data. IF wrote the initial draft of the manuscript. All authors had full access to all the data in the study and take responsibility for the integrity and accuracy of the data analysis. All authors contributed to, read, and approved the final version of the manuscript.

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SYSTEMATIC REVIEW
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Physical Harm and Death in the Context of Coercive Measures in Psychiatric Patients: A Systematic Review

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Background: For centuries coercive measures in psychiatry have been means of averting acute danger. It has been known for almost as long that these measures can lead to harm or even death to those affected. Over the past two decades the topic has increasingly been the subject of scientific discussion and research. While the legal and ethical preconditions for coercive measures in psychiatry as well as epidemiological studies on their incidence and patients' subjective experiences have increasingly come into focus, research on possible adverse events has lagged behind. To our knowledge there is no systematic review on the harmful or even fatal physical adverse effects of coercive interventions in psychiatry.

Methods: We searched the databases PubMed and CINAHL for primary literature with a search string based on the PICO framework including key words describing different psychiatric diagnoses, coercive measures, and harms.

Results: In total, 67 eligible studies (mainly case reports and case series) of very heterogeneous quality were included. Two RCTs were found reporting position-dependent cardiac deterioration, but were, however, carried out with healthy people and were characterized by a small number of cases. Death was the most frequently reported harm: cardiac arrest by chest compression in 14 studies, cardiac arrest by strangulation in 9, and pulmonary embolism in 8 studies. Further harms were, among others, venous thromboembolism and injuries. Injuries during physical restraint were reported in 0.8–4% of cases. For other kinds of coercive interventions, there are no sufficient data. Venous thromboembolism occurred in a considerable percentage of cases during mechanical restraint, also under prophylaxis. The most commonly reported coercive measure was restraint, distinguishing in mechanical restraint (43 studies), physical restraint (22 studies), bedrails (eight studies), vest restraint (7 studies), and chair restraint (6 studies). Forced medication was explicitly mentioned only in two, but seems to have occurred in nine studies. Six studies included seclusion.

Conclusion: Coercive measures can lead to physical harm or even death. However, there is a significant lack of data on the incidence of such adverse events related to

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coercive interventions. Though reported anecdotally, physical adverse events during seclusion appear to be highly underresearched.

Keywords: coercion, harm, side-effect, seclusion, restraint

INTRODUCTION

Background

Coercive measures have been in use at least since the beginning of written records on mental illnesses and their treatment. While nowadays the primary reason for their use is prevention of danger, when aggressive or violent behavior against self or others cannot be controlled otherwise, in former times coercion was considered as treatment in itself or even used as punishment.

In ancient times, Celsus already advised protecting the patient from harm by binding him and recommended causing fear and fright as well as inflicting pain (1). In the late Middle Ages as well as in the modern age, the mentally ill were chained and locked away, and pieces of equipment were developed for treatment that rather reminds of torture methods (2).

Essentially, coercive measures can be subdivided into coercive treatment (usually with drugs, but also in rare cases by electroconvulsive therapy), and “chemical restraint” (sedative medication, with flowing transitions between treatment and restraint) on the one hand, and freedom-restricting measures such as seclusion and restraint on the other (3).

The fact that coercive measures used to prevent harm can have dangerous or even fatal consequences has been a well-known fact since the beginning of psychiatric institutions and has been controversially discussed (4, 5). But not until the last two decades have coercive measures increasingly become the subject of scientific investigations.

The “White Paper on the Protection of Human Rights and Dignity of People Suffering from Mental Disorders, especially those placed as invalids in a psychiatric establishment” (6), the ratification of the United Nations Convention on the Rights of Persons with Disabilities (7), and the German guideline “Therapeutic measures for aggressive behavior in psychiatry and psychotherapy” (8), updated in 2018 (“Prevention of coercion: prevention and therapy of aggressive behavior in adults”) mark important steps to establish a framework for the use of coercive measures in psychiatric institutions and general hospitals, based on ethics, law, and evidence.

While the legal and ethical conditions of coercive measures in psychiatry have been highlighted extensively and epidemiological studies of their incidence have become increasingly available, research on adverse effects and complications has lagged behind. Adverse effects encompass traumatic experiences and psychological sequels in a wider sense (9) as well as harmful and even fatal physical effects. The latter have repeatedly been the subject of case reports and are well known to clinicians. However, to our knowledge, there has been no systematic review so far.

Objectives

The systematic review sets out to i) identify all kinds of reported physical harm due to the use of coercive interventions on the mentally ill and ii) estimate expected frequencies of these adverse events depending on the use of different measures.

METHODS

The databases PubMed and Cumulative Index to Nursing & Allied Health Literature (CINAHL) were systematically searched for publications that present data on harm due to coercive measures in adult psychiatric patients according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) recommendations (10). In accordance with the Patient-Intervention-Comparison-Control (PICO) framework we combined, by using Boolean operators, the keywords related to the following descriptors (**Table 1**): “Person” (9 key words), “Intervention” (10 key words), and “Outcome” (20 key words).

TABLE 1 | Generation of the search string: Keywords, which serve the descriptors of the PICO framework, were separated with “OR” for the search, the respective columns of the descriptors were connected with “AND”. In PubMed the search string was completed with the following MeSH-terms: “affective psychosis, bipolar”; “behavior disorder, disruptive”; “impulse control disorders”; “mood disorders”; “neurocognitive disorders”; “neurodevelopmental disorders”; “personality disorders”; “paranoid disorders”; “psychotic disorders”; “schizophrenia”; “posttraumatic stress disorder” were added to the descriptor “person”, “restraint, physical”; “coercion” were added to the descriptor “intervention” and “death”; “asphyxia”; “mortality”; “fatal outcome”; “patient safety”; “patient harm”; “safety management”; “psychology”; “adverse effects” were added to the descriptor “outcome”.

Descriptor 1 = person	Descriptor 2 = intervention	Descriptor 3 = outcome
Mental*	Restrain*	Dead*
psychiatr*	seclu*	Death*
schizo*	coerci*	Letal*
autis*	Containment	Fatal*
delir*	compulsor*	Harm
dement*	involuntar*	“Side effect*”
Intellect*	*Forced	“Adverse effect”
brain injur*	Detained	Accident*
Bipolar	Commitment	injur*
	“Prone position”	complicat*
		Risk*
		“Patient safety”
		CIRS
		“Critical incident report system*”
		mortalit*
		“Standardized mortality rat*”
		SMR*
		asphyx*
		“commotio cordis*”
		Rhabdomyolysis

The key words were truncated and provided with wildcard characters after the word stem to identify similar words and completed with MeSH-Ters for the search in PubMed.

The search string was used to search the existing titles and abstracts. The search encompassed all articles published by September 3, 2018, with an open beginning. All articles that were found with the English search string were included, if they met the previously determined inclusion criteria and could be translated. We included articles that presented data on physical harm possibly caused by coercive measures in adults with a psychiatric diagnosis, except for mental and development retardation (ICD-10 blocks F7x and F8x). These diagnoses were excluded because of the partly alternate objectives of coercive measures in this particular context, e.g. operant learning (11). We did not constrain the search to psychiatric settings and thus also included measures taken against people with mental illness by the police. Excluding such articles would have resulted in a loss of knowledge about possible harm mechanisms in compulsory measures. We also included two studies reporting on coercive measures involving healthy subjects who could be considered as experimental persons simulating to suffer from mental illness.

Articles that did not report own data (e.g., reviews) were excluded, as well as articles solely documenting psychological harm. Nevertheless, psychological harm is a very important aspect, but was not the objective of this study.

The first author, XK, performed the initial screening of title and abstract of the initially found articles. The final eligibility of studies was determined after full text screening and evaluation and discussion between XK and TS.

The included articles were then analyzed with regard to their methodology, the investigated harm, the applied coercive measures, and the diagnoses of the affected persons. The results were classified by content and then evaluated. If sufficient studies were to be found meta-analyses would be performed.

Specifically, the studies were classified as follows:

1. Case reports: reports on individual cases independent of a group observation
2. Case series: several similar but independent cases reported together
3. Association studies: studies not primarily investigating groups of patients who were subjected to coercive interventions but using coercion as a predictor for harm, when parts of the group were affected by these interventions
4. Epidemiological studies: studies including a population that experienced coercive measures and investigating the occurrence of adverse events
5. Case-control studies: studies comparing the effect of a coercive measure in a group with a control group not affected by such measure
6. Experimental studies and randomized controlled studies: studies investigating measures to groups randomized in advance

Afterwards, the studies were assigned to clinical syndromes, oriented on the International Classification of Diseases 10th Revision (ICD-10), as several of the studies did not describe their population according to the fixed diagnostic criteria of the ICD-10, and grouped as follows:

1. Syndromes of dementia (F00-F03)
2. “Excited delirium” (accepted diagnosis in the US, not existent in ICD-10) and states of excitation
3. Delirium not caused by alcohol or drug abuse (F05)
4. Psychoactive substance use (F1x)
5. Schizophrenia and psychotic disorders (F2x)
6. Manic episodes were summarized together with the much rarer depressive episodes under affective disorders (F3x)
7. Personality disorders
8. Others: psychiatric disorders from chapter 4 of the ICD-10 (anxiety, dissociative, stress-related, somatoform, and other non-psychotic mental disorders) were subsumed to “others,” because of their rarity among the included studies, also the behavioral syndromes associated with physiological disturbances and physical factors that did not appear in our search (F5x), and studies that (partially) did not name the diagnosis in individual cases or summarized larger cohorts under the term “further diagnoses” without describing conspicuous behavior or symptoms in detail
9. Two studies that conducted investigations on healthy subjects

The investigated coercive measures were classified as follows (12, 13):

1. Restraint, which was further divided into
   - physical restraint, meaning immobilizing a patient by holding him manually
   - mechanical restraint, which usually means the use of belts to fix a patient to a bed, mostly four-point or five-point (but also one-point to 11-point)
   - mechanical restraint by chair restraint
   - mechanical restraint by bed rails
   - vest restraint
2. Seclusion, meaning separating the patient in a locked room
3. Forced medication, meaning oral or parenteral (intravenous or intramuscular) application of medication by force or by definite psychological pressure, e.g., announcing forced parenteral medication if medication is not immediately taken orally
4. Studies reporting the additional use of arms in police custody were classified separately, because it can be assumed that other harm mechanisms influence the outcome

RESULTS

Search Query Results and General Characteristics of the Studies

The initial search yielded 6,209 hits, of which 6,096 were excluded during the initial screening. From the remaining 113 articles 12 were excluded due to being duplicates and further 36 articles were excluded after full text screening for the following reasons: off topic [not a psychiatric patient (one study) or treatment (one study), mental retardation (two studies), no coercive measures (five studies), no documented somatic harm (nine studies)], not presenting own collected data (17 studies), and study not yet performed (one study); 67 could be included for the systematic review. **Figure 1** shows the inclusion process in a flow chart.

Characteristics of the included papers are displayed in **Tables 2**–**7**. The first was published in 1964, the larger part in the last two decades.

Analyzed with regard to their methodology, two studies were experimental RCTs that investigated coercive measures on healthy subjects (14, 15) with small sample sizes of 13 respectively six probands, 1 study was a case-control study (16), 11 studies were classified as epidemiological studies (17–27), 12 as association studies (28–39), and the majority as case series (40–59) and case reports (60–80). A systematic quality assessment of the included studies as it is usually done with RCTs being included in meta-analyses (risk of bias) and calculation of risks was not possible due to the diverse methodology of the studies, with different designs, different investigated outcomes, and partly incomplete data. In particular, when calculating the mortality as some studies did, many interacting factors are involved.

Since the epidemiological studies allow deductions to be drawn from the frequency of harm, these are listed at the start, before all the studies found are subsequently presented with regard to the harm, the coercive measures, and the diagnoses.

Results of the Epidemiological Studies

Three studies investigating the injury rate with physical restraint (20, 21, 23) can be grouped together. Ford (20) published a calculated injury rate of 1.05% in all 216,018 patients with physical restraint, with data from 2013 to 2017 collected by 40 mental health trusts. Lancaster et al. (21) calculated an injury rate of 4% across 680 incidents of physical restraint involving 280 patients from one Mental Health Trust from 1999 to 2001. Stubbs and Alderman (23) investigated patients with brain injury in a rehabilitation setting over the time period of 1 year and calculated a patient injury rate of 14.7% (11 out of 75 patients suffered injuries in 1,427 events of physical restraint). Strote et al. (19) found a higher rate of 9%, but related to police arrests including use of weapons.

Two further epidemiological studies can be grouped together as investigating venous thromboembolism (VTE) in patients receiving mechanical restraint (and seclusion). De Hert et al. (18) did not document any case of VTE in 170 secluded patients, of which 138 were additionally mechanically restrained (176 episodes of seclusion, 196 episodes of seclusion and restraint) and 38% received VTE prophylaxis. However, Ishida et al. (22) reported an incidence of 11.6% (21 out of 181) of deep vein thrombosis in restrained patients, all of them having received prophylaxis. This difference can be partly explained by the fact that Ishida et al. may have investigated this side effect in more

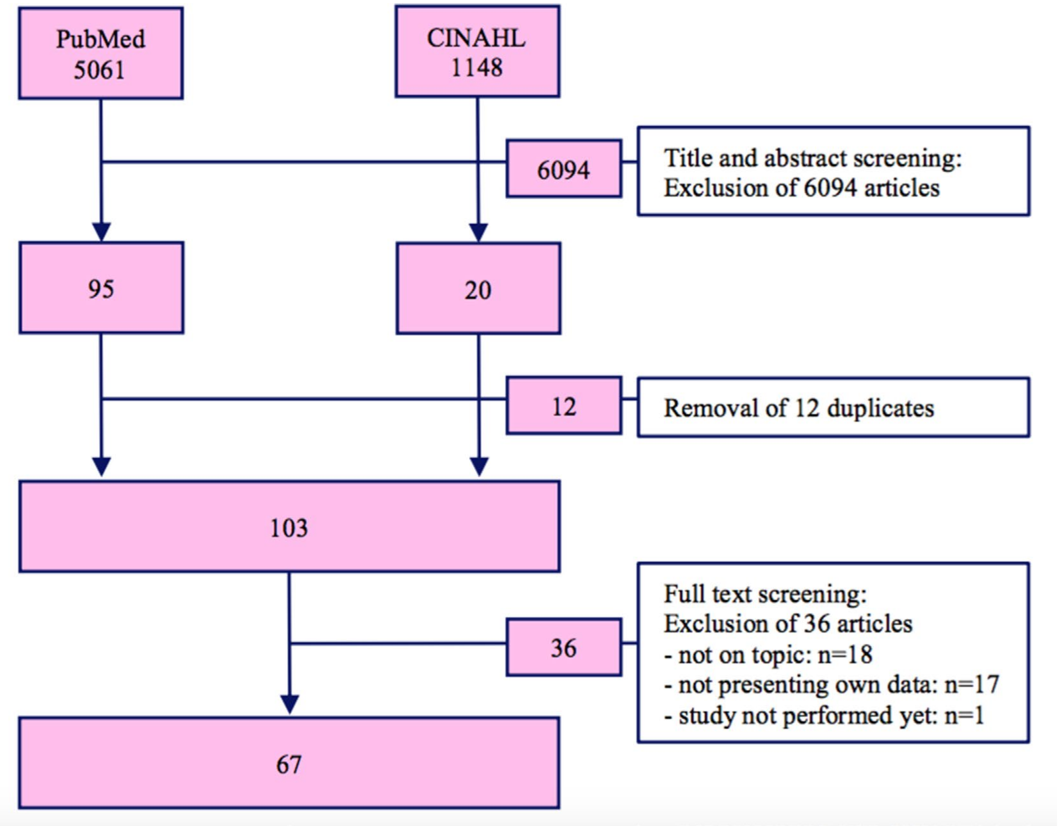

FIGURE 1 | Flowchart of the study inclusion.

TABLE 2 | Characteristics of the RCTs.

References	Content	Country, setting	Diagnosis								Coercive measure								Harm	N
			Del	Dem	ED	F1	F2	F3	F6	O.	PR	MR	CR	BR	V	S	FM	A		
Parkes (14)	Healthy subjects were investigated after exercise comparing relaxed sitting, PR in prone, and in supine position. Cardiac recovery was delayed in prone position.	UK								*	x								Delayed cardiac recovery	13
Roeggla et al. (15)	Healthy subjects were investigated in MR in prone position versus MR in upright position, prone position led to dramatic impairment of hemodynamics and respiration.	Austria								*		x							Cardiac detoriation	6

*N, number of patients sustaining coercive measures; UK, United Kingdom; Del, delirium; Dem, dementia; ED, excited delirium and states of excitation; F1, mental and behavioral disorders due to psychoactive substance use; F2, schizophrenia and other psychotic disorders; F3, affective disorders; F6, personality disorders; O., other psychic or somatic diagnoses, unspecified or not labeled diagnoses; PR, physical restraint; MR, mechanical restraint; CR, chair restraint; BR, bed rails; V, restraint vests; S, seclusion; FM, forced medication; A, use of arms; *, healthy subjects.*

TABLE 3 | Characteristics of the case control study.

References	Content	Country, setting	Diagnosis								Coercive measure								Harm	N
			Del	Dem	ED	F1	F2	F3	F6	O.	PR	MR	CR	BR	V	S	FM	A		
Hatta et al. (16)	The patients (diagnoses not mentioned) with mechanical restraints (106) in a hospital were compared to those without restraints (528). MR increases the risk of DILI even with the same medication.	Japan, psych. clinic								x		x							DILI	106

N, number of patients sustaining coercive measures; psych., psychiatric; DILI, drug induced liver injury; Del, delirium; Dem, dementia; ED, excited delirium and states of excitation; F1, mental and behavioral disorders due to psychoactive substance use; F2, schizophrenia and other psychotic disorders; F3, affective disorders; F6, personality disorders; O., other psychic or somatic diagnoses, unspecified or not labeled diagnoses; PR, physical restraint; MR, mechanical restraint; CR, chair restraint; BR, bed rails; V, restraint vests; S, seclusion; FM, forced medication; A, use of arms.

TABLE 4 | Characteristics of the epidemiological studies.

References	Content	Country, setting	Diagnosis								Coercive measure								Harm	N
			Del	Dem	ED	F1	F2	F3	F6	O.	PR	MR	CR	BR	V	S	FM	A		
Hall et al. (17)	Investigation of 3,564 cases with mental illness in police custody (PR), comparing prone and supine position, no negative effects in prone, one death in supine.	Canada, police custody			x	x					x							x	Death	3,564
De Hert et al. (18)	Analyzing the data of all patients with neuroleptic treatment, of whom 170 were secluded and 138 secluded and restraint, with regard to the occurrence of DVT. No case of DVT occurred, preventive measures in 38%.	Belgium, psych. clinic					x					x				x	x		DVT (no case)	170 and 138
Strote et al. (19)	From all 66 cases with ED in police custody of 3 years, 65% were brought to the emergency department, 9% of those (6% of all) had injuries.	USA, police custody			x						x	x						x	Injuries	66
Ford (20)	Data from 2013 to 2017 collected by the Liberal Democratics *via* a Freedom of Information Act Request, injury rate by physical restraint was 1,05% in patients (3% in staff).	UK, patients from Mental Health Trust								x	x								Injuries	216,018
Lancaster et al. (21)	All cases (260 patients, 680 events) of physical restraint were analyzed regarding to the position. Injury rate across incidents 4% in patients (17% in staff).	UK, psych. clinic								x	x								Injuries	260
Ishida et al. (22)	All of the 190 patients with mechanical restraints were screened for DVT in several steps. Despite of prophylaxis 11.6% developed DVT. Duration of restraint (as well as medication and somatic diseases) were significantly correlated.	Japan, psych. clinic	x	x		x	x	x	x	x		x							DVT	181
Stubbs et al. (23)	Analysis of injuries (14 in 11 patients) after physical restraint (1,427 events in 75 patients). Patient injury rate 14.7%.	UK, rehabilitation clinic								x	x								Injuries	75

(Continued)

TABLE 4 | Continued

References	Content	Country, setting	Diagnosis								Coercive measure								Harm	N
			Del	**Dem**	**ED**	**F1**	**F2**	**F3**	**F6**	**O.**	**PR**	**MR**	**CR**	**BR**	**V**	**S**	**FM**	**A**		
Pinninti et al. (24)	Letter to the editor, report of all (1,403) mechanical restraints, and all patient deaths (four, all without restraints) in 5 years with an average of 950 commitments per year, average annual rate of 4.6 restraints per 1,000 patient-days, death rate in restraint 0%.	USA, psych. clinic								x		x							Death (no case)	1,403
Mattson et al. (25)	63 patients in seclusion were compared (not matched) to 160 non secluded patients. Different harm was documented in 33 of the secluded, above all the oversight of complications. Eight showed self-injury, three showed physical deterioration. A comparison of the harm between the two groups did not take place.	USA, psych. clinic					x	x	x	x						x			Injuries, self-harm, oversight of complications	63
Lofgren et al. (26)	Over 13 weeks prospective all patients with mechanical restraints were included and harm was recorded. Restraints led to an increased mortality, restraints longer than 4 days led to increased infections, incontinence, pressure sores (no control group but dose-effect).	USA, general hospital		x								x			x				Nosocomial infections, pressure sores, increased mortality, incontinence	102
Nielssen et al. (27)	40 randomly selected patient files of involuntarily committed patients from 18 psych. hospitals each were investigated in regard to the application of intravenous medication (132 patients, 27%) and possible harm: dystonia (49 cases, 37%), hypotension (11 cases, 8%), confusion (seven cases, 5%), phlebitis (three cases, 2%).	Australia, psych. clinic				x	x	x	x	x							x		Dystonia, hypotension, confusion	132

N, number of patients sustaining coercive measures; UK, United Kingdom; USA, United States of America; psych., psychiatric; Del, delirium; Dem, dementia; ED, excited delirium and states of excitation; F1, mental and behavioral disorders due to psychoactive substance use; F2, schizophrenia and other psychotic disorders; F3, affective disorders; F6, personality disorders; O., other psychic or somatic diagnoses, unspecified or not labeled diagnoses; PR, physical restraint; MR, mechanical restraint; CR, chair restraint; BR, bed rails; V, restraint vests; S, seclusion; FM, forced medication; A, use of arms; DVT, deep vein thrombosis.

TABLE 5 | Characteristics of the association studies.

References	Content	Country, setting	Diagnosis								Coercive measure								Harm	N
			Del	Dem	ED	F1	F2	F3	F6	O.	PR	MR	CR	BR	V	S	FM	A		
Grover et al. (28)	Prospective evaluation of all patients with delirium. 49 were restrained. Risk factors for delirium and increased mortality were younger age, alcohol, and the use of restraints.	India, general hospital	x									x							Increased mortality	49
Bredthauer et al. (29)	All patients were analyzed regarding restraints (37 cases), risk factors, and the incidence of falls. Falls were equally often in restrained and unrestrained patients, fractures more often with restraints.	Germany, psych. clinic	x	x		x	x	x		x		x	x	x					Fractures, falls	37
Fonad et al. (30)	Aggregated data, investigation of falls, and fall risks. Correlations between falls and the use of restraints remain unclear.	Sweden, dementia and somatic ward		x						x		x	x	x					Falls	?
Honkonen et al. (31)	Investigation of the mortality of inpatients. 10% of all died within the 2-year-follow up (rate explained by many severe alcohol addicted). Use of restraints led to an increased mortality, but a direct causality was not assumed. 67 of 424 patients with restraints died (16%).	Finland, psych. clinic				x	x	x		x	x	x				x	x		Death, increased mortality	424
Windfuhr et al. (32)	283 cases of SUD between 3/99 and 2005 were matched with other patients, nine deaths had sustained mechanical restraint and/or seclusion. Twice as many died after MR/S as in the controls, which was not significant.	UK, psych. Clinic		x			x	x				x				x			Death (SUD)	9
Michaud (33)	Analysis of a forensic database of all restraint related deaths in police custody.	Canada, police custody			x						x	x						x	Death	14
Robbins et al. (34)	Patients of a general hospital were in course investigated regarding MR (in 37 cases = 17%). The patients with restraints were more likely to die but also more seriously ill, so a causality for the mortality and more nosocomial infections was not assumed. Minor skin lesions were documented.	USA, general hospital		x								x	x		x				Increased mortality, minor skin lesions, nosocomial infections	37
Mion et al. (35)	Of all patients, those who fall were compared to those who did not. 61% of the fallers had received restraints versus 22% of the non fallers.	USA, rehabilitation clinic								x		x							Falls	49

(Continued)

TABLE 5 | Continued

References	Content	Country, setting	Diagnosis								Coercive measure								Harm	N
			Del	**Dem**	**ED**	**F1**	**F2**	**F3**	**F6**	**O.**	**PR**	**MR**	**CR**	**BR**	**V**	**S**	**FM**	**A**		
Dharmarajan et al. (36)	Data from the "Project Recovery" was analyzed, restraints are associated with increased mortality, a causality could not be assumed.	USA, general hospital	x									x							Increased mortality	17
Arbesman et al. (37)	Patients who fall were compared to those that did not fall (same duration of stay). Restraints double the fall risk, 25% of the fallers and 8% of the non fallers had recieved restraints. A significance is assumed only for longer durations of the restraints.	USA, hospital with general ward and psych. ward								x		x							Falls	83
Gaertner et al. (38)	Episodes of VTE were identified from a database. The clinical, somatic, psychiatric, and therapeutic characteristics of each patient were compared with a matched control group without VTE. Restriction of mobility was equally prescribed for the patients in both groups: 12 patients (36%) in the case group and 21 patients (26%) in the control group. Continuous physical restraint was prescribed more in the case group (three (9%) versus zero patients) but this difference was not significant. Not more restriction of mobility by PR or seclusion in the case group (continuous or sequential).	France, psych. clinic	x	x		x	x	x	x	x		x				x			VTE (not increased in restraints)	33
Takeshima et al. (39)	All patients were screened for VTE in several steps, then circumstances were analyzed. VTE was observed in 2.3% (39/1,681) of all patients, in 61.1% (11/18) of catatonic patients, 4.1% (11/270) of noncatatonic restrained patients, and 1.2% (17/1,393) of non-catatonic not restrained patients.	Japan, psych. clinic					x	x		x		x							VTE	288

N, number of patients sustaining coercive measures; UK, United Kingdom; USA, United States of America; psych., psychiatric; Del, delirium; Dem, dementia; ED, excited delirium and states of excitation; F1, mental and behavioral disorders due to psychoactive substance use; F2, schizophrenia and other psychotic disorders; F3, affective disorders; F6, personality disorders; O., other psychic or somatic diagnoses, unspecified or not labeled diagnoses; PR, physical restraint; MR, mechanical restraint; CR, chair restraint; BR, bed rails; V, restraint vests; S, seclusion; FM, forced medication; A, use of arms; VTE, venous thromboembolism; SUD, sudden unexplained death.

TABLE 6 | Characteristics of the case series.

References	Content	Country, setting	Diagnosis								Coercive measure								Harm	N
			Del	Dem	ED	F1	F2	F3	F6	O.	PR	MR	CR	BR	V	S	FM	A		
Karger et al. (40)	Strangulation by restraints in seven elderly people, autopsy reports.	Germany, surgical clinic, at home, nursing homes	x	x			x					x							Death	7
Hem et al. (41)	Two cases of PE after mechanical restraint, one died.	Norway, psych. clinic					x	x				x							DVT, PE, death from PE	2
Stefanović et al. (42)	Autopsy report of five deaths from PE after mechanical restraints.	Serbia, psych. clinic					x					x					x		Death from PE	5
Pötsch et al. (43)	Five deaths due to strangulation/asphyxiation by mechanical restraints (restraint systems in bed, CR, BR) in elderly people in nursing homes.	Germany, nursing home	x	x			x			x		x	x	x					Death	5
O'Halloran et al. (44)	11 cases of death in police custody (physical restraint in prone position; in three cases arms (Taser, batons) were used).	California, police custody			x	x	x				x	x						x	Death	11
Mohsenian et al. (45)	Six cases of asphyxia due to strangulation by mechanical restraints and bed rails (diagnosis of case 4 is unknown).	Germany, psych. clinic, general hospital, nursing home	x	x						x		x		x					Death	6
Fariña-López et al. (46)	Three cases of death by strangulation in elderly with dementia restrained by abdominal belt and BR.	Spain, psych. clinic, nursing home		x								x		x					Death	3
Pollanen et al. (47)	Investigation of 21 cases with ED that died in police custody with physical restraint.	Canada, police custody			x						x							x	Death by heart failure	21
Stratton et al. (48)	Investigation of 18 cases with ED that died from cardiapulmonary arrest in police custody with physical an mechanical restraints.	Canada, police custody			x						x	x						x	Death	18
Dickson et al. (49)	Three cases of death from PE after mechanical restraint.	Canada, psych. clinic		x				x				x							Death from PE	3
Stratton et al. (50)	Two cases of cardiopulmonary arrest after physical restraint and hobble restraint with handcuffs in police custody.	Canada, police custody			x						x	x							Death	2
Lazarus (51)	Two cases of death from PE during mechanical restraint (8 days and 1 day duration).	USA, psych. clinic					x	x				x							Death from PE, DVT	2
Pedal et al. (52)	Four deaths of physical restraint in police custody.	Germany, police custody			x						x								Death	4
Miles et al. (53)	122 cases of deaths as a direct consequence of mechanical restraints were aggregated from different databases, for at least one out of 1,000 deaths in nursing homes MR shall be causative.	USA, general hospitals, nursing homes		x								x	x	x					Death	122
Mirchandani et al. (54)	Five cases of death in police custody with PR and use of arms were analyzed (all sustained head injuries that were not causal for death).	USA, police custody			x	x					x							x	Death	5

(Continued)

TABLE 6 | Continued

References	Content	Country, setting	Diagnosis								Coercive measure								Harm	N
			Del	Dem	ED	F1	F2	F3	F6	O.	PR	MR	CR	BR	V	S	FM	A		
Krexi et al. (55)	Analysis of a cardiologic database, 34 cases of sudden cardiac death after struggling against physical restraint.	UK, psych. clinic, at home, police custody					x			x	x								Death by heart failure	34
Bell et al. (56)	Two cases from a database died from strangulation in restraint vests and chairs (the other cases did not sustain coercive measures).	USA		x									x		x				Death by strangulation	2
Hammer et al. (57)	Two cases of death by strangulation in restraint vests.	Germany, psych. clinic					x								x				Death by strangulation	2
McArdle et al. (58)	Two cases of pneumomediastinum caused by Valsalva maneuver due to MR in police custody, no direct traumatic mechanism.	Australia, general hospital, police custody				x	x				x							x	Pneumomediastinum	2
Uemura et al. (59)	Autopsy reports of two cases with ED with sudden cardiac death by restraints in police custody.	Japan, psych. Clinic, police custody			x		x				x	x							Death by heart failure	4

N, number of patients sustaining coercive measures; UK, United Kingdom; USA, United States of America; psych., psychiatric; Del, delirium; Dem, dementia; ED, excited delirium and states of excitation; F1, mental and behavioral disorders due to psychoactive substance use; F2, schizophrenia and other psychotic disorders; F3, affective disorders; F6, personality disorders; O., other psychic or somatic diagnoses, unspecified or not labeled diagnoses; PR, physical restraint; MR, mechanical restraint; CR, chair restraint; BR, bed rails; V, restraint vests; S, seclusion; FM, forced medication; A, use of arms; DVT, deep vein thrombosis; PE, pulmonary embolism.

detail; patients with elevated D-dimers underwent Doppler ultrasounds.

Mattson and Sacks (25) investigated all 63 secluded patients from the year 1975 and documented—besides the fact that patients in seclusion received less care and complications were overseen—self-injury in 8 (12.7%) and physical deterioration in 3 patients (4.8%). Lofgren et al. (26) reported new pressure sores in 22 of the 102 (21.6%) mechanically restrained elderly patients during a 13-week period, new incontinence in 29 (28.4%), and nosocomial infections in 12 (1.8%), and also a significantly increased mortality with increasing duration of restraint (>4 days).

Nielssen et al. (27) investigated each 40 randomly selected patient files of involuntarily committed patients from 18 psychiatric hospitals with regard to the application of intravenous medication (132 patients) and possible harm: dystonia (49 cases, 37%), hypotension (11 cases, 8%), confusion (7 cases, 5%), phlebitis (3 cases, 2%).

Pinninti and Rissmiller (24) presented a hospital report of all (1,403) mechanical restraints and all patient deaths (4 deaths, all patients without restraints) within a time span of 5 years, death rate in restraint 0%. Hall et al. (17) investigated 3,564 patients in police custody over a period of 7 years, comparing physical restraint in prone and supine position and documenting no death in prone and one in supine position.

Results of all Studies w.r.t. Type of Harm, Applied Coercive Measure, Diagnoses of the Population

Type of Harm

None of the studies found investigated all forms of harm in all coercive measures. In most cases, only one type of harm was examined in the context of only one or a few different coercive measures.

Death was the most frequently studied harm, documented in 42 studies (17, 24, 31–33, 40–57, 59–69, 71–78, 80) and distributed over all study types, mentioned especially in the case reports and case series. A frequent cause of death was cardiopulmonary arrest in 17 studies (17, 33, 44, 48, 50, 52, 54, 55, 59, 60, 62, 63, 65, 66, 75, 76, 80), whereby an assignment to asphyxia due to pressure on the thorax or the position ("positional asphyxia") or heart failure usually was not mentioned by default and overlaps were common. Asphyxia caused by strangulation was mentioned in 10 studies [Refs. (40, 43, 45, 46, 53, 56, 57, 69, 73, 78), the latter one reporting a patient in seclusion crawling into the bed sheets] and pulmonary embolism in eight studies (41, 42, 49, 51, 64, 68, 71, 74). Other causes were suicide [Ref. (61), patient was mechanically restrained and inadequately monitored and jumped out of the window], bleeding to death [Ref. (67), hemoperitoneum resulting from restraints], and sudden unexplained death (32) as well as asphyxia caused by chokehold (53) each in one study. Five studies documented an increased mortality associated with coercive measures, often without being able to deduce a direct causality (26, 28, 31, 34, 36).

The second most frequently analyzed harm was VTE in 14 studies: deep vein thrombosis of the leg (DVT) in 8 studies (18, 22, 38, 39, 41, 51, 70, 72) and pulmonary embolism (PE) in 12 studies (38, 39, 41, 42, 49, 51, 64, 68, 70–72, 74), with the

TABLE 7 | Characteristics of the case reports.

References	Content	Country, setting	Diagnosis								Coercive measure								Harm	N
			Del	**Dem**	**ED**	**F1**	**F2**	**F3**	**F6**	**O.**	**PR**	**MR**	**CR**	**BR**	**V**	**S**	**FM**	**A**		
Nissen et al. (60)	Schizophrenic patient was resuscitated after cardipulmonary arrest in physical restraint (prone position).	Norway, psych. clinic					x				x								Death	1
Wöllner et al. (61)	Schizophrenic patient was mechanically restrained, but not monitored, because of suicidality and aggression and died after jumping out of the window.	Germany, psych. clinic					x					x							Death	1
O'Halloran (62)	Schizophrenic patient with asphyxia during physical restraint (prone position).	California, psych. clinic					x				x								Death	1
Morrison et al. (63)	Asphyxiation after 90 minutes physical restraint in prone position.	Scotland, psych. clinic				x	x				x						x		Death	1
Hewer et al. (64)	Schizophrenic patient sustained mechanical restraint and compulsive medication with olanzapine and lorazepam and died from PE.	Germany, psych. clinic					x					x					x		PE, death from PE	1
Siebert et al. (65)	Cardiorespiratory arrest after >4 minutes PR in prone position, patient with schizophrenia (case 2 was not an adult).	Florida, psych. clinic					x				x								Death	1
Schrag et al. (66)	Asphyxiation death after physical restraint in prone position (case 2 did not sustain a coercive measure).	Switzerland, police custody			x						x								Death	1
Raju et al. (67)	Death due to hypovolemic shock (hemoperitoneum) after trauma to the liver during mechanical restraint.	India, psych. clinic					x					x					x		Intraabdominal bleeding to death	1
Nielsen (68)	Restraint death by PE after 6 days in mechanical restraints.	Denmark, psych. department					x					x					x		Death from PE	1
Miles (69)	Asphyxiation during restraint by vest and bed rails.	USA		x										x	x				Death	1
Laursen et al. (70)	Schizophrenic patient survived DVT and PE after 13 days with mechanical restraints.	Denmark, psych. department					x					x							DVT, PE	1
Cecchi et al. (71)	Death from PE after 6 days in mechanical restraints.	Italy, psych. department					x					x							Death from PE	1
Hem et al. (72)	Schizophrenic patient with DVT and PE during mechanical restraint.	Norway, psych. clinic					x					x							DVT, PE	1
Langslow (73)	Asphyxiation death of a schizophrenic patient with strangulation in vest restraint.	Australia, psych. clinic			x	x						x			x				Death by strangulation	1
Leth et al. (74)	Autopsy report, one case of a schizophrenic patient with PE after 5 days in mechanical restraint.	Denmark					x					x							Death from PE	1
Robinson (75)	93 year old patient with dementia died in mechanical restraint, "collapse of will" was supposed.	Florida, psych. clinic		x								x							Death	1

(*Continued*)

TABLE 7 | Continued

References	Content	Country, setting	Diagnosis								Coercive measure								Harm	N
			Del	Dem	ED	F1	F2	F3	F6	O.	PR	MR	CR	BR	V	S	FM	A		
Miles (76)	95 years old patient with dementia died after 4 hours struggling against (and three times escaping from) the vest restraint, 5 mg haloperidol was given intramuscular.	USA		x										x	x		x		Death by heart failure	1
Robinson et al. (77)	Heart failure after struggling against MR in a patient with dementia.	USA, general hospital		x								x							Death by heart failure	1
Nelson et al. (78)	Schizophrenic patient in seclusion died from asphyxia after crawling inside the mattress whilst unobserved.	UK, psych. clinic					x									x			Death by asphyxia	1
McLardy-Smith et al. (79)	Ischemic contracture after the application of mechanical restraints to the hands for 48 hours in a patient with mania.	UK, police custody						x				x							Contracture of the hands	1
Skowronek et al. (80)	Patient with mechanical restraints over 24 days and medication with clozapine (toxic blood levels) died by heart failure.	Poland, psych. clinic					x					x							Death by heart failure	1

N, number of patients sustaining coercive measures; UK, United Kingdom; USA, United States of America; psych., psychiatric; Del, delirium; Dem, dementia; ED, excited delirium and states of excitation; F1, mental and behavioral disorders due to psychoactive substance use; F2, schizophrenia and other psychotic disorders; F3, affective disorders; F6, personality disorders; O., other psychic or somatic diagnoses, unspecified or not labeled diagnoses; PR, physical restraint; MR, mechanical restraint; CR, chair restraint; BR, bed rails; V, restraint vests; S, seclusion; FM, forced medication; A, use of arms; DVT, deep vein thrombosis; PE, pulmonary embolism.

consequence of death in 8 studies (41, 42, 49, 51, 64, 68, 71, 74). Gaertner et al. (38) retrospectively found out that among the analyzed patients with VTE, the restrained patients were not more frequently affected by this harm than the unrestrained. As stated above, this finding is also supported by de Hert et al. (18). In contrast to these, the other studies observed that VTE occurred even when the restrained patients were heparinized or receiving other prophylactic measures (22, 39) and the importance of regular examination and treatment of thrombosis was emphasized (22).

Harm in the form of injuries/physical traumata was reported in eight studies encompassing minor skin lesions, pressure sores, bruises, lacerations, contusions, fractures, head injuries, and not further specified injuries (19–21, 23, 26, 34, 44, 63).

Four association studies investigated and documented the correlation between the incidence of falls and the application of mechanical restraints intended to protect from falling. Nearly all showed an increased, though not significant risk of falling (29, 30, 35, 37). Notwithstanding Arbesman and Wright (37) reported a significant increase in falls, which were twice as likely when patients were restrained, attributing this to accelerated physical deterioration. Bredthauer et al. (29) as well as Mion et al. (35) could not provide significant evidence that restraint is associated with an increased risk of falling.

Nosocomial infections as a harm in the context of coercive measures as documented by Lofgren et al. and Robbins et al. (26, 34) cannot clearly be distinguished from the general frailty of those in restraints with respect to causality.

Furthermore, there are less frequently documented complications in the context of coercive measures like incontinence (26), contractures (79), and pneumomediastinum (58). Hatta et al. (16) comprehensively investigated drug-induced liver injury (DILI) in a case-control-study and found that patients with mechanical restraints were four times more at risk than patients who did not experience mechanical restraint. This result, which could potentially be attributed to the fact that patients in restraint might receive more or stronger medication, was also shown in a direct comparison of patients with identical medication. As a cause for the increased occurrence of DILI, in particular stress-associated physiological alterations were discussed.

Both randomized and controlled experimental studies reported a delayed cardiorespiratory recovery after restraint among healthy subjects (14, 15). Numerous other studies reported death in the "prone position," e.g., Pollanen et al. (47) and Stratton et al. (48), whereas Hall et al. (17) investigated cases of prone position in police custody, and concluded that this method of restraint had no effect on the physiology of those affected.

Mattson and Sacks (25) reported self-injury during seclusion as a form of harm and additionally found out that patients in seclusion receive less attention and inadequate treatment from staff, leading to complications being overlooked.

Miles and Irvine (53) presented an overview of 122 deaths in mechanical restraint, in which, among others, 4 deaths by burning are reported: three patients set the restraint on fire with the intention to escape, one person died accidently by inflamed oxygen ignited by a cigarette. **Figure 2** illustrates different harms in correlation to the different coercive measures.

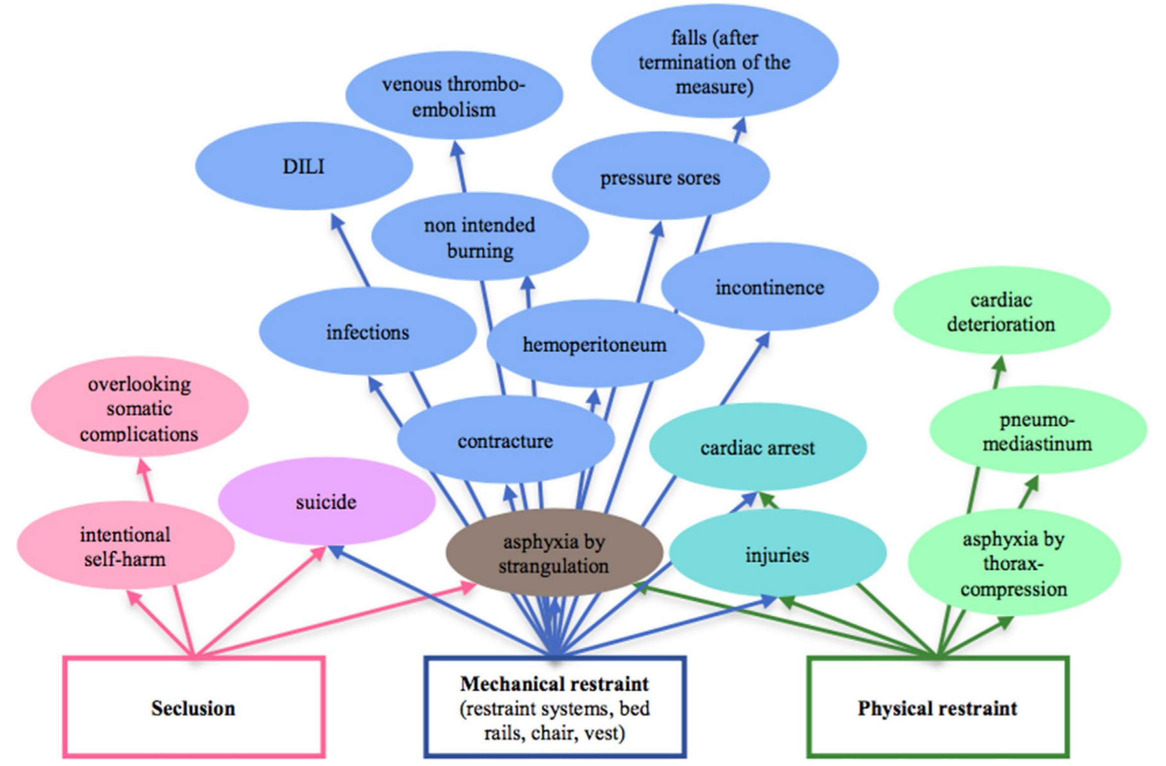

FIGURE 2 | Illustrates different harms in correlation to the coercive measures physical and mechanical restraint and seclusion.

A few studies did not find harm in the context of the coercive measures they investigated (17, 18, 24, 29, 35, 38).

Type of Coercive Measure

Restraint

Restraint was the most frequently reported coercive measure, subdivided into physical restraint and mechanical restraint, bed rails, chair restraint, and restraint vests. Restraint applied by police implied possible use of arms and was listed separately.

Forty-three studies reported on mechanical restraint (15, 16, 18, 19, 22, 24, 26, 28–46, 48–51, 53, 59, 61, 64, 68, 70, 71–75, 77, 80), whereby the used restraint systems varied widely. Abdominal belts, representing a one-point restraint, are mentioned as well as restraint using belts securing the patient at several points, but also measures such as binding with dressing material (34). Roeggla et al. (15) investigated a method named "hogtieing," denoting a technique of binding hands and feet together on the back together, in healthy subjects in order to analyze physical consequences of the hogtie position.

Six studies reported chair restraint in older age (29, 39, 34, 43, 63, 56), eight studies reported bed rails (29, 30, 43, 45, 46, 53, 69, 76), and the use of restraint vests was reported in seven of the included studies (26, 34, 56, 57, 69, 73, 76). In the case of restraint vests, devices with long sleeves and leather straps on the collar were reported (57), as well as vests constructed by the manufacturer Posey, who gives clear safety instructions (81), which were disregarded in some cases (73).

Physical restraint, also named "PI" = "personal intervention," was the subject of 22 studies (14, 17, 19–21, 23, 31, 33, 44, 47, 48, 50, 52, 54, 55, 58–60, 62, 63, 65, 66).

An important distinction relates to the body position, with comparisons between supine position and prone position. The latter has already been described as being more harmful by Reay et al. (82).

Coercive measures in police custody involve in addition to physical restraint (in prone or supine position) the special technique of hogtieing as well as the use of handcuffs as a form of mechanical restraint (17, 19, 33, 44, 47, 48, 50, 52, 54, 55, 58, 59, 66, 79), and in some cases the use of arms (17, 19, 33, 44, 47, 48, 54, 58).

Seclusion

Seclusion was included in six studies (18, 25, 31, 32, 38, 78). Four of them report of seclusion together with other coercive measures, especially restraint measures. Only two examined seclusion separately. One study reported the death of a patient in seclusion who suffocated between mattress and bed sheet (78). Mattson and Sacks (25) reported of self-injury in eight out of the 66 patients in seclusion, and as the main danger the overlooking of complications. Unfortunately, no information was provided on the non-secluded control group.

Forced Medication

Forced medication was explicitly labeled as such in only two studies (31, 64), but further seven studies (18, 27, 42, 63, 67, 68, 74) reported intravenous or intramuscular application of an orally available substance to patients in restraint. Forced medication was mostly documented in connection with other coercive measures (restraints), and the examined harm only related to the latter measure, except for the study by Nielssen et al. (27).

Populations

Thirty studies (18, 21, 22, 25, 27, 29, 31, 32, 38–43, 51, 57, 58, 60–62, 64, 65, 67, 68, 70–72, 74, 78, 80) reported coercive measures in patients with schizophrenia or psychosis, 18 studies (22, 26, 29, 30, 32, 34, 38, 40, 43, 45, 46, 49, 53, 56, 69, 75–77) included dementia in their population, and affective disorders (mostly manic episodes) were diagnoses in 15 studies (16, 20–22, 25, 27, 29, 31, 32, 38, 39, 41, 49, 51, 79). States of excitation and excited delirium (ED) with no direct correlate to the ICD-10 were mentioned in 12 studies (17, 19, 33, 44, 47, 48, 52, 54, 59, 63, 66, 73), substance abuse disorders in 7 studies (21, 22, 27, 31, 38, 58, 73), delirium in 6 studies (28, 29, 36, 40, 43, 45), and personality disorders in 5 studies (21, 22, 25, 27, 38). Seventeen studies were subsumed to "others" (16, 20–24, 25, 27, 30, 31, 35, 37–39, 43, 45, 55). Two studies reported experiments on healthy subjects (14, 15).

DISCUSSION

The aim of this systematic literature research was to provide a comprehensive overview of the existing scientific literature on physical harm due to the use of coercive measures.

The strengths of this work are the methodological stringency, that no language restrictions were made and the fact that for the first time all forms of reported physical harm due to the use of all types of coercive interventions involving mentally ill persons were aggregated.

Our search yielded 67 eligible studies, of which the only two randomized controlled trials were conducted on healthy persons and were characterized by a small number of cases. Overall, the quality of the studies found, mostly case reports and case series, is very heterogenous, differing, e.g., in the number of cases and the documentation of the coercive measures and harm. Therefore, a quantitative synthesis for meta-analyses could not be performed.

Nevertheless, the review yields some important findings. Physical restraint can lead to cardiac deterioration and even death by cardiac arrest. Other forms of harm, such as lactate acidosis and rhabdomyolysis that might have been expected, were not reported. Of the 12 studies involving patients with ED, only Strote et al. (19) and Langslow (73) mentioned these laboratory changes in individual patients, but explicitly not as a result of the coercive measure. Nevertheless, the mechanisms of increased catcholamine release through emotional stress and especially the use of cocaine deteriorating the heart are widely discussed by Michaud (33) and Pedal et al. (52).

Almost all available studies show that physical restraint in the prone position, which at first glance may seem easier and safer for staff to apply than the supine position, bears a higher risk of fatal consequences. This has already led to guideline recommendations against the prone position (8, 83). For mechanical restraint, a variety of adverse effects has been described, including death by strangulation (40, 43) or by pulmonary embolism (42, 49). A number of the most dangerous consequences (e.g., strangulation and self-injury) can be definitively prevented by 1:1 supervision as recommended in guidelines and by the European Committee for the Prevention of Torture and Inhuman or Degrading Treatment (84). Other harms, primarily VTE, but also alterations of heart function and liver function, are an inherent risk. As the careful work of Ishida et al. (22) demonstrates, venous thrombosis has to be expected in about 1 of 10 patients even under prophylactic measures, increasing with time of exposure. Even if based solely on secondary retrospective analyses, available results suggest that mechanical restraint can increase the probability of subsequent falls in elderly patients (35, 37). Hence, prevention of falls is a rather questionable reason for the use of mechanical restraint. Regarding VTE and some other types of harm, results are somewhat inconsistent, insofar some studies are available that reported no negative effects at all. Reasons for these inconsistencies could be the different methodology, or the fact that the examination methods used were not specific or sensitive enough to detect the harm (18). Therefore, estimates of the frequency of different types of harm can be made only with caution. The available epidemiological studies suggest that relevant negative physical consequences resulting from physical restraint occur with a frequency in 1 in 100 up to 1 in 25. For other coercive measures, no estimates are possible based on the available literature. Pertaining to seclusion, there is a striking discrepancy between the widespread use of this measure and the nearly complete lack of studies on adverse events. Our literature review yielded only one older observational study with a small N (25) and one case report (78). This does not necessarily mean that seclusion is generally safe. Adverse effects of seclusion seem to be a widely underresearched topic.

Limitations

Methodological Limitations

One limitation of this work is the fact that only two databases were searched. On the other hand, the additional gain from searching another database is usually estimated to be low (85, 86).

Due to the expanded search string and the fact that all study types were included, a high recall (low data loss) should be achieved. This, however, led to the discovery of a large number of irrelevant studies, so that completeness was achieved at the expense of precision. Despite the rather general and broad search string, at least one relevant article was not found: "deaths due to physical restraint" (87), while the article with the similar title "deaths due to mechanical restraint" (45) was found. The reason was that in the abstract of the unfound article only "patients" were mentioned, while our search string required a psychiatric disease in the description of the population (link with AND). For further systematic literature searches, it must therefore be considered whether the search should be extended to the full text, or whether it makes sense to extend the search string even further.

Psychological harm caused by coercive measures was not investigated. However, this should not diminish the importance of psychological consequences of coercive interventions (88, 89).

The inclusion of the 14 studies reporting on coercive measures in police custody can be critically discussed, especially as some report on additional use of weapons. However, these studies exclusively included mentally ill persons, and the mechanism of physical restraint—often in the prone position—usually does not differ from physical restraint that may be required in the context of emergency psychiatric measures (90), so that exclusion of these studies would have meant a loss of important findings on possible harm and harm mechanisms in coercive measures. The additional use of weapons such as tasers reported in some studies was not described as the cause of death.

Another downside is the heterogeneity and methodological quality of the studies and the fact that no randomized controlled trials could be included (at least concerning patients). For ethical reasons, the feasibility of RCTs on the efficacy or side effects of coercive measures on patients is very limited.

RCTs are generally not appropriate to find rare side effects, which typically are detected in large-scale observational studies or as case reports.

Due to the paucity of available RCTs and large-scale observational studies a quantitative synthesis could not be performed and frequencies of adverse events could only be roughly estimated.

Limitations of the Results

None of the studies found recorded all types of harm in all forms of coercive measures. In most cases, only one type of harm was investigated with only one or a few different coercive measures. The fact that only one adverse event (e.g., falls) was investigated does not mean that other harm (e.g., skin abrasions) did not occur. A direct comparison (probability of occurrence) of the several types of harm is therefore not possible. Furthermore, for some types of harm (e.g., cardiac effects) causality is difficult to determine and overlap with effects of agitation, intoxication, and administered drugs is probable.

Especially in the case of increased mortality in patients who were subjected to coercive measures, causality is difficult to determine because the patients who received coercive measures were often described as more critically ill.

Generally, a considerable reporting bias (91) has to be assumed. No studies were found that were based on interviews with patients. Only one older study (26) prospectively recorded negative effects in a cohort of patients subjected to mechanical restraint. The remainder was based on charts or reports by staff. This reporting bias probably leads to an underestimation of physical harm, especially minor harm.

Though many case series and case reports have been published, the picture of possible negative and fatal consequences is probably far from complete. For example, we found no case reports about patients who died burning themselves in mechanical restraint, whereas such accidents have been reported in newspapers (92). Also, many practitioners have anecdotal knowledge of fractures during seclusion though no such case has been published. The striking lack of observational studies and case reports on harmful events during seclusion could wrongfully lead to the assumption that seclusion is generally safe. However, evidence is missing in this area.

On the other hand, we also have only anecdotal evidence on harm being caused by abstaining from coercive interventions. This is less a medical but rather a legal and ethical issue. Freedom-restrictive coercive interventions are not a therapeutic concept of psychiatry. From a legal perspective, they are primarily safety measures imposed to prevent harm to the patient himself or others due to his behavior. The reasons to use such kind of interventions cannot be investigated in randomized controlled trials. Either a control group with no intervention would be exposed to inacceptable risks, or, if that would not be true, the intervention would not be justified. The use of coercive interventions cannot to be justified by "evidence" from studies, as has been wrongly claimed (93). Similarly, it does not make sense to question the "efficacy" of these forms of interventions, since their primary purpose is not to improve symptoms but to prevent the patients and others from danger. However, one can compare different kinds of interventions with respect to their safety for both patients and staff, and their short-term and long-term psychological effects (9).

Conclusion and Practical Implications

Coercive interventions can cause a wide variety of somatic harm with even fatal consequences. Part of them, particularly strangulations by belts or bedrails, can be avoided by continuous 1:1 monitoring. Therefore, continuous personal supervision during such measures is necessary not only for psychological reasons but also for reasons of safety. Physical restraint in prone position should be avoided. Pulmonary thromboembolism is an inherent risk of mechanical restraint, which cannot be completely prevented by prophylactic measures. Immobilizing restraint interventions should therefore be applied for as short as possible. Further research is necessary, particularly in two areas. Large-scale prospective observational studies should assess all harmful events during coercive measures to receive robust estimates of risk ratios. This research should imperatively encompass seclusion which is completely under-researched with respect to harmful events.

In addition to further research and establishment of measures to reduce coercive interventions, the aim should be to establish a (mandatory) central register of all coercive measures, as this is the only way that statistically valid data can be recorded at all.

Concerning systematic literature searches such as this, in the next step an extension of the search strategy would have to be carried out in the next steps.

Overall, coercive measures will probably have to remain the last resort; in individual cases with highly aroused patients who represent an acute danger for themselves or others, however, the mildest means should be selected after exhausting all other measures, if the expected benefit outweighs the possible harm, and in the awareness that coercive measures can lead to significant harm and even death.

AUTHOR CONTRIBUTIONS

TS and XK contributed to the conception of the review. SH created the search string. XK analyzed the data and wrote the first draft of the manuscript. All authors contributed to manuscript revision and read and approved the submitted version.

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Community Treatment Orders and Supported Decision-Making

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This paper presents findings from an interdisciplinary project undertaken in Victoria, Australia, investigating the barriers and facilitators to supported decision-making (SDM) for people living with diagnoses including schizophrenia, psychosis, bipolar disorder, and severe depression; family members supporting them; and mental health practitioners, including psychiatrists. We considered how SDM can be used to align Australian laws and practice with international human rights obligations. The project examined the experiences, views, and preferences of consumers of mental health services, including people with experiences of being on Community Treatment Orders (CTOs), in relation to enabling SDM in mental health service delivery. It also examined the perspectives of informal family members or carers and mental health practitioners. Victoria currently has high rates of use of CTOs, and the emphasis on SDM in the Mental Health Act, 2014, is proposed as one method for reducing coercion within the mental health system and working towards more recovery-oriented practice. Our findings cautiously suggest that SDM may contribute to reducing the use of CTOs, encouraging less use of coercive practices, and improving the experience of people who are subject to these orders, through greater respect for their views and preferences. Nonetheless, the participants in our study expressed an often ambivalent stance towards CTOs. In particular, the emphasis on medication as the primary treatment option and the limited communication about distressing side effects, alongside lack of choice of medication, was a primary source of concern. Fears, particularly among staff, about the risk of harm to self and others, and stigma attached to complex mental health conditions experienced by consumers and their families, represent important overarching concerns in the implementation of CTOs. Supporting the decision-making of people on CTOs, respecting their views and preferences about treatment, and moving towards reducing the use of CTOs require system-wide transformation and a significant shift in values and practice across mental health service delivery.

Keywords: community treatment orders, supported decision-making, autonomy, coercion, psychiatry

INTRODUCTION

This paper introduces an interdisciplinary project undertaken in Victoria, Australia, to investigate how supported decision-making (SDM) with people who reported diagnoses including schizophrenia, psychosis, bipolar disorder, and severe depression (hereafter consumers) can be used to align Australian laws and practice with international human rights obligations. It examines the experiences, views, and preferences of consumers, family members supporting them, and mental health practitioners (MHPs), including psychiatrists, in relation to enabling "supported" (rather than *shared* or *substituted*) decision-making about care and treatment in mental health service delivery. Victoria currently has high rates of use of Community Treatment Orders (CTOs) which are governed by the *Mental Health Act 2014* (Vic). One of the key objectives of this legislation (set out in section 10) is to support people who are subject to compulsory treatment to make their own decisions about their assessment, treatment, and recovery. However, just how SDM will be used in the context of CTOs is unknown. This paper examines the experiences and views of participants about the relevance of SDM for the reduction of CTO use in Victoria. It focuses particularly on findings from qualitative interviews with 30 MHPs, including community mental health support staff, nursing, allied health practitioners, and psychiatrists, 8 of the 29 consumer interviews, and 10 of 29 family supporter interviews in which the challenge of SDM and CTOs are directly discussed.

BACKGROUND

Mental health laws in many jurisdictions around the world enable others to make decisions for people experiencing severe mental health problems, often because of pre-conceived notions about their decision-making abilities. SDM refers to the process of providing support to consumers to ensure that their views and preferences are respected on an equal basis with all others in the community (1). Hence, SDM gives expression to the wishes and preferences of consumers and is contrasted with substitute decision-making, when other people have power to make decisions for consumers, regardless of their wishes. SDM regimes may help ensure mental health laws in Australian states and territories are compliant with the United Nations Convention on the Rights of Persons with Disabilities (CRPD) (2), which requires States to "take appropriate measures to provide access by persons with disabilities to the support they may require in exercising their legal capacity" [Article 12] (3).

The shift to SDM coincides with the increased influence of the recovery approach to mental health practice, policy, and law (2). However, the emphasis on the fundamental themes of hope, social inclusion, and empowerment in the recovery approach (3) appears to contrast with the ongoing and increasing use of involuntary outpatient treatment in Australia through Community Treatment Orders (CTOs) (4). CTOs are controversial in many respects, including concerns about their effectiveness and impact (5). However, they remain entrenched in mental health service delivery.

Despite the CRPD and the stated intention of many governments to reduce the use of coercive interventions, there is a continuing belief that mental health laws need to continue to incorporate substitute decision-making (5). For example, the *Mental Health Act 2014* (Vic) refers to the need for consumers to "be supported to make, or participate in" treatment decisions [section 11(1)(c)] but enables a tribunal to make treatment decisions for consumers, even against their wishes, providing certain legal criteria are met.

There are currently debates regarding the relevance of SDM in jurisdictions that continue to enable substitute decision-making. It has been argued that Article 12 of the CRPD "imposes an obligation on States Parties to eliminate substituted decision-making regimes in their entirety, recognize the diversity of ability to make decisions, and provide a continuum of support to ensure legal capacity"(6). However, Browning et al. (7) describe SDM as a process of supporting a person with decision-making; a system that affords legal status; and a means of bringing a person's will and preference to the center of any substituted decision-making process (7). Callaghan and Ryan (2) suggest that "a true supported decision-making model will require that all decisions are guided by a patient's will and preferences—even where decision-making is made *via* a substitute decision maker" (p. 617) (2).

CTOs are controversial in several respects. They operate overall in a way that appears to contradict the shift to recovery-oriented practice and the expectations of Article 12 of the CRPD. They lead to a restriction of human rights including the rights to liberty and physical and mental integrity sometimes over many years, and evidence about their effectiveness remains weak despite randomized control trials (5, 8, 9). Corring et al. (10, 11) have undertaken reviews of qualitative studies on the experience of people on CTOs and suggest that there are common themes among people on CTOs and clinicians (10, 11). They may, for example, see CTOs as helpful but remain concerned about the ethical and human rights implications of their use. However, MHPs tend to see more benefits to the use of CTOs than consumers (10). There is concern about the potential for CTOs to be overused and for those on them to experience coercion and disempowerment. CTOs are also considered "deskilling" and forming a substitute for more innovative, well-resourced and intensive services (12). Yet, informal family supporters have tended to support the use of CTOs and have identified that these orders can assist them (13). The most recent Cochrane review of the evidence for compulsory community and involuntary outpatient treatment for people with severe mental disorders concluded that despite three randomized control trials there was still no evidence that CTOs were effective in reducing clinical outcomes such as hospital readmission and quality of life (8). Large cohort studies in Australia have tended towards more positive findings about clinical outcomes (14, 15), but it is generally concluded that this evidence is not strong (16). Rugkåsa et al. (17) have suggested that on the basis of the evidence available, the common use of CTOs should be reconsidered (17).

CTO USE IN VICTORIA

This paper explores the relevance of SDM to an estimated 5,000 people who are forced to comply with CTOs in Victoria (18). CTOs were introduced in Victoria under the Mental Health Act 1986, and they have become increasingly commonplace, especially since the mid-1990s when there was a surge in their use as Victoria's long stay psychiatric hospitals closed. Victoria has the highest rate of CTOs with 98.8 per 100,000 population compared, for example, to 30.2 per 100,000 population in Tasmania and 46.4 per 100,000 in New South Wales (18). In Victoria, CTOs provide the power to return a person to hospital if they do not adhere to treatment or are no longer considered to be able to be treated in the community. The process of recalling people to hospital may involve emergency services, including police (19). Reform of mental health legislation in Victoria has been driven by a range of concerns including the apparent overuse of CTO, concerns about their effectiveness, and human rights issues (13). The reform also intended to promote the Act's role in supporting recovery and improve the participation of people receiving mental health treatment and care in decision-making (13). The Act introduced more effective and accessible mechanisms to oversee treatment and care and included provisions for enabling improved responsiveness to the needs of families and supporters. The Act is based on principles that include a presumption of capacity and emphasis on SDM (20). Mechanisms to enable SDM were included in the Act, such as advance statements, nominated persons, and a second opinion scheme. These mechanisms enable consumers to express their views and preferences through, for example, recording these in advance or having someone they trust assist them at times when they are less able or unable to do this themselves. Along with several other reforms, Victoria now has a Mental Health Complaints Commissioner, and people on compulsory orders have improved access to advocacy through an independent mental health advocacy scheme. The Act also attempts to promote improved participation in decision-making by supporters.

THE "SUPPORTED DECISION-MAKING" PROJECT

This interdisciplinary project involved a collaboration with five peak Victorian mental health service providers and interdisciplinary academics with backgrounds in sociology, psychiatry, law, social work, and population health. The study aimed to explore the barriers and facilitators to SDM in an Australian context. The study included the perspectives of consumers and family members who support them to understand their experiences and seek their views on and preferences for supported decision-making. MHPs, including psychiatrists, have also been interviewed for their perspectives on the provision of treatment and care and SDM (21–23).

Ethics

The project was approved by the Monash University Human Research Ethics Committee (CF13/2980-2013001607).

Methods

As described in detail by Kokanović et al. (22) and Knight et al. (23), the project conducted narrative interviews about experiences of SDM with a total of 92 participants during 2014 and 2015 (although two subsequently withdrew) (21, 23). This paper specifically focuses on the experience of participants in these original interviews who had direct experience of CTOs. Twenty-nine participants were consumers who reported diagnoses including schizophrenia, psychosis, bipolar disorder, and severe depression, and eight of those participants had experience of being on CTOs. Thirty interviews with family supporters were also conducted; 10 had direct experience of a family member being on CTOs. All interviews were either video or audio recorded, and the consumer and family supporter interviews contributed to an online resource (http://research.healthtalkaustralia.org/supported-decision-making/overview). Ten psychiatrists (nine from Melbourne and one from a regional area) and 20 MHPs were interviewed. Mental health services in Victoria are separated into non-clinical [non-governmental organisation (NGO) or Mental Health Community Support Service (MHCSS)] and clinical services. The MHPs interviewed comprised staff from both services, including peer support workers, social workers, nurses, occupational therapists, and community mental health support service practitioners (21, 22). All these participants had experience working with consumers and their families on CTOs.

Recruitment of consumers and family supporters occurred through posters, staff contact, and email networks in community mental health organizations. Recruitment of MHPs and psychiatrists included information distributed at sector events and through professional associations (21, 22). Advertisements and posters included researchers' contact details, and potential participants were invited to initiate contact. All interviewers were academics employed by the universities involved in the study, and there were no previous relationships or contact between interviewers and interviewees. LB undertook five of the interviews with consumers and all the interviews with MHPs. RK undertook the interviews with psychiatrists. The rest were conducted by the research team. There were no direct relationships between the consumer interviewees and MHPs interviewed. They were representatives of their professions. Further, there was no direct relationship between the consumer participants and the family supporters interviewed.

MHPs and psychiatrists were asked about their experiences in the implementation of CTOs, their understanding of the role of CTOs in service delivery, and how CTOs impacted their relationships with consumers, their families, and other informal supporters. Consumers and family supporters who had experience of CTOs were asked about their, or their family members', experiences and how being on a CTO impacted them and their families in the context of a broader discussion about living with a diagnosis of mental illness, their experiences of care, SDM and recovery [see Ref. (22) for more details].

The data were analyzed thematically across all participants after the interviews had been transcribed, returned to participants for review, and imported into NVivo 10 software for qualitative data management (22). The primary analysis involved the development of coding frameworks by the research team. Using an experience-centered approach, the research team members were involved in cross-checking the analysis and developing the coding frameworks (24) [see Refs. (22) and (23)], and findings have been published elsewhere (19, 21). Common and divergent themes among participant groups were identified in the secondary analysis of the 48 relevant interviews for this paper that explored study participants' accounts and interpretations of their experiences with CTOs and SDM. The inductive approach to coding involved several sessions of reading the transcripts and identifying themes specifically referring to CTOs. LB initially formulated a coding framework that was discussed with the rest of the research team as it developed. This was complemented by analysis undertaken to produce the two digital resources that both include sections on CTOs and SDM (http://research.healthtalkaustralia.org/supported-decision-making/overview).

FINDINGS

Perspectives on Supported Decision-Making and CTOs

Mental Health Practitioner and Psychiatrist Perspectives

In this section, we provide an analysis of findings related to the implementation of CTOs from the interviews with 20 MHPs and 10 psychiatrists who had direct experience of implementing CTOs. They describe navigating a very complex system. CTOs appear to be more than an order that impacts the named individual. The effects are disseminated to families, the way the mental health system operates, and the relationship the person has with the service and providers. This complexity also relates to differences in power, with psychiatrists being the most powerful decision makers while CMHSS workers appear to have the least. There are also different opinions about whether CTOs are helpful and whether they could be doing harm due to the impact of coercion and the cost they pose to relationships between consumers and service providers. SDM was seen as relevant to these issues because of its potential to increase opportunities for greater respect for autonomy, human rights, and choice and control (22) and because it provided a challenge to the other imperatives driving the use and reliance on CTOs. Finally, as we discuss below, some MHPs and psychiatrists were able to identify signs of change in the implementation of CTOs in the current context.

Power and Influence

The implementation of CTOs is particularly challenging for recovery-oriented practitioners in CMHSS who are working in partnership with clinical services. CMHSS workers, as non-clinical service providers who do not hold powers under the Act, described readily embracing recovery-oriented practice as their guiding framework. Hence, they expressed an acute awareness of the tensions between coercive practices such as CTOs and recovery. CMHSS participants described their sense of paternalism and disempowerment when working with staff from clinical services leading to feeling marginalized within a hierarchical system, even though the relationships they have developed with consumers could provide an important contribution to influencing decision-making about treatment and CTOs. For example,

> Yeah, I got told not to coach the client [by a psychiatrist], not to answer questions, and then I said, "If she looks at me and wants me to respond, is it okay?" I felt like I just had to keep my mouth shut … [about what I knew about the person] (Cassie, CMHSS worker, Occupational Therapist).

This quote exemplifies the difficulties discussed by participants working in CMHSS. While CMHSS provide the most intensive and direct individual support to consumers, they hold very little power in relation to contributing to decision-making about matters such as the need for a CTO.

However, psychiatrists also recognized their own difficulties as the more powerful decision makers in the process of implementing CTOs. They felt they were the ones most likely to be blamed if any harm occurred to the person or others involved if they did not order or continue a CTO. This led them to rely on CTOs even though this potentially conflicted with other practice principles, such as respect for autonomy. It also had the potential to be "deskilling" for psychiatrists and other MHPs due to relying on coercion to achieve medication compliance, rather than exploring other ways to encourage people to take their medication:

> I think many doctors felt that they had to put people on CTOs because if they didn't and then something bad happened then they would get blamed, and also I think that because CTOs were available I think a lot of doctors haven't developed the skills in trying to … collaborate with people and,… you know, persuade people that medication in particular was—was a valuable thing for them (Sam, Psychiatrist).

Safety at a Cost to Relationships and Autonomy

Clinical staff commonly referred to people being "safe" when they are on CTO and CTOs helping them meet their duty of care obligations, but they also most commonly described the experience of being on CTOs in negative terms. The use of CTOs appeared to sometimes interfere with developing a trusting relationship due to power differentials being highlighted, and CTOs also formed a substitute for other ways of working that might be riskier such as enabling consumers to make their own decisions about their medication and other aspects of their treatment and care. For example,

> People hate being on a CTO. It's, it's like their, their autonomy is taken away. And I still think we don't [um], we don't properly ascertain what are the real problems that are going to happen to the person. I mean, I still think we're being very paternalistic. We're not letting people make mistakes or find out for themselves (Rufus, Psychiatrist).

These views were not universal among the respondents, with accounts of neutral to positive attitudes towards CTOs.

Some respondents were in favor of using substitute decision-making because it was in the consumer's best interests. These participants identified a CTO as helping them to meet their duty of care and preventing harm to the consumer or others. In some situations, they were not concerned about the coercive aspects of CTOs because the consumer did not seem to object to being on a CTO. For example,

> She [the consumer] honestly didn't care about the order. She [the consumer] didn't really understand it; it was just a piece of paper to her (Gwen, Nurse).

Enforcing Medication

All the MHPs and psychiatrists saw the primary role of CTOs as enforcing compliance with medication. They were aware that this gave them control over the type of medication and dosage prescribed and led to consumers having reduced opportunity to negotiate these decisions:

> We have a lot of people that sort of want to reduce the amount [of medication] that they take. Some people do want to increase it as well but I guess it's that you know people feeling bombed out and got no, no energy and things like that and they're like how can I, how can I get out of this? Usually if they're on a Community Treatment Order that's a little bit trickier (Siobhan, CMHSS worker).

Several MHPs were not convinced that the benefits that medication might offer was enough to justify the coercion. One peer support worker thought he could never recommend giving a person a depot or intramuscular injection of medication (which is commonly used in Victoria when people are on CTOs) against their will, even though he thought CTOs were necessary sometimes: *"I know how bloody intrusive, and I'm not saying they're not a good thing, and like I said before, sometimes they're necessary, but having been there myself I just, I just—that's where my empathy comes in"* (Seamus, Peer Support Worker).

Continuity of Care and Access to Scarce Services

Most participants identified CTOs as having an important role in the current system of providing mental health care. CTOs were seen to have functions other than medication compliance, such as facilitating people to stay out of hospital by guaranteeing that they would receive timely follow-up. Several participants identified challenges to reducing the use of CTOs, because of the role the orders appear to have in enabling improved continuity of care and ensuring access to service delivery. One psychiatrist shared their experience on an inpatient unit as follows:

> The consultant [psychiatrist] had very strong, you know, views … everyone went out [of hospital] on a treatment order. Everyone … pretty much … who came in with a psychotic type illness. In, out on a treatment order because that way they'd get community follow up (Joseph, Psychiatrist).

Some participants commented that access to services can sometimes *require* a CTO rather than prevent one:

> They say, oh well if they weren't on an order, MST [the Mobile support and treatment team] probably wouldn't … keep them on their books because they only take the most severe people. But that's like totally putting the cart before the horse, you know … Like surely the whole point of MST is to get people to a point where they can be self-determining and autonomous and make their own decisions. It's really—you know, why, why, why should you need to be on an order to get a service, that doesn't make any sense (Sam, Psychiatrist).

There were also challenges to reducing the use of CTOs and engaging in more SDM related to continuing support for families:

> I think families feel safer that their loved ones are on orders … in the sense that they know it's going to access them to mental health services (Sophia, Social Worker).

Ambivalence—CTOs Fix Some Problems and Create New Ones

Most participants expressed ambivalence about the effectiveness of CTOs. They were often seen as a "blunt instrument" used to address other systemic problems, such as access to service delivery (as described above), addressing the fears of organizations primarily concerned about preventing the risk of harm to consumers and others, and making people accept unpleasant and sometimes distressing treatment. However, while CTOs might be addressing some problems, they were potentially creating others, such as the possibility that a CTO might have a negative impact on the person's future engagement with services:

> It's a lose-lose situation no matter what you do. You keep them on the CTO and it's quite—it's, it's quite sad. But that's the sad part is sometimes that you take away someone's identity and—because that would be, I think, for her self-esteem personally that would be a serious loss. The fact that you're forced to do something that's against your, your beliefs and you have—and no matter what you do, if you stop taking the medicine then you'll be sent to hospital and you'll be taking it anyway and that's, that's quite sad or sad to me (Mavis, CMHSS worker).

On the other hand, many participants thought CTOs could be justified with some people because of the severity of their symptoms, even if the consumers on CTOs found this very distressing:

> I think regrettably the people who probably hate the CTOs the most are people who are more likely to get really severely unwell (Geraldine, Psychiatrist).

One participant thought the Act and its safeguards enabled human rights protections for consumers on CTOs that sometimes were not available to others who were pressured to cooperate:

> Because they don't get any of the protections under the provisions of the Mental Health Act. So I be very kind of clear with case managers and, you know, and when, when the team is like, "Look, you know, if we're going to go down, if we actually are going to use such a treatment and use treatment pressure stuff, you need to, you know, use the legislation and make sure that it's done appropriately," and…, they have the protections and they can appeal it (John, Psychiatrist).

SDM and CTOs

As discussed above, many MHPs and psychiatrists experienced pressure to use CTOs despite several also feeling ambivalent about them. A fundamental problem commonly identified was the negative impact of CTOs on the autonomy and empowerment of consumers. SDM appeared to have the potential to increase opportunities for greater respect for autonomy, because it facilitates consumers being able to express their views and preferences about treatment and care, as this participant describes:

> Absolutely. I think through supported decision making you're going to give people ownership of, of not only themselves and, and their illness and their treatment but that sort of responsibility I think will create investment in taking the medicine. I mean if you're twisting people's arms with CTOs or anything like CTOs or like forensic orders or anything like that, you're just twisting people's arms and then at some point they're going to come off those orders and … I think if you support their decision-making, perhaps at least then they'll invest themselves in it and then they will do that or maybe they'll do some of it (Mavis, CMHSS worker).

Active engagement in SDM with people on CTOs included informing them about their legal rights and reassuring them about the powers that a CTO enables:

> I think currently from my own experience I've had a couple of people that are really confused about the CTOs in particular. A fear that what they're hearing from clinicians or, or clinical staff members is not in fact what they—well, the—essentially the truth (Stuart, CMHSS worker).

MHPs also identified other opportunities for people to "get control back" while on a CTO. This may not be possible in relation to taking medication and complying with clinical services, but MHPs identified opportunities for hearing more about consumers' views and preferences and supporting these in relation to, for example housing, employment, and finances:

> You can still support them [people on CTOs] to make decisions regarding … whether it be they want to look at employment or education opportunities; there's still a huge other scope. You know, whether it's engaging in kind of a leisure activity or—there's still a huge scope to be able to help them to make supported decisions in other areas (Cassie, Occupational Therapist).

Another example provided was for services themselves to adapt and enable people to have more choice and control in their treatment. For example, medication supervision:

> When you've got people [on CTO] saying "please don't come to my door at six o'clock at night because it doesn't suit me. That's not when I take my medication. I take it later on in the night. Now can you come back at 8:30?" (Karen, Nurse).

This participant then related this seemingly common scenario to how difficult it can be for someone to regain control over their lives and have their preferences respected. In this scenario, family relationships were important, and SDM relied on family members supporting a shift in the balance of power:

> Tensions with family, you know; why aren't you taking the medication? Why are you arguing, arguing with these, these experts that come to the door? Like it creates a whole knock on effect of things … and so, so those little things, those little examples which are really a big deal, I don't know that we're really thinking about those things … around supported decision-making. So they're not captured in the advance statement, but they don't need to be. It's just we as a service, how do we think about those things on a day to day basis? How can we really support people to make their own decisions? (Karen, Nurse).

Attempts to try to work towards SDM with people on CTOs were described by MHPs as requiring time for conversations and information sharing with consumers, following through with agreed assistance and acting on consumers' views and preferences:

> Which means discussion on the medication and its side effects. And if they have a view on one versus the other, then—then do that (Stephan, Psychiatrist).

Signs of Change

Participants commented that there were "signs of change" since the Mental Health Act, 2014 had come into effect. In many cases, these signs confirmed MHPs' and psychiatrists' perspectives that SDM was relevant to the implementation of CTOs, as evident from quote below:

> I think we're getting a little bit better. I think people now know that they have an avenue through the Mental Health Complaints Commissioner that they have an avenue to talk, they have an avenue to speak. I think people overall … are finding that they're [CTOs] are shorter in duration. That … they're being given a

> chance … to express what they want, what they don't want. And I think also too that I am … as a … senior clinician who has been around for a while now that those more conservative consultants [psychiatrists] are having to actually think about the future. They're actually thinking more about treatment goals and recovery and that it's not a—a mental illness doesn't actually mean you're in a constant state of … illness and you're not in a constant state of incapacity (Sophia, Social Worker).

Participants identified SDM as having significant potential to improve the implementation of CTOs through encouraging less reliance on these orders, as well as enabling consumers on CTOs to express their views and preferences more. However, for some participants, this change had not come fast enough or may not be as effective as they hoped. They identified how incongruous several mechanisms to enable SDM, such as advance statements, were with people being on a CTO and how a lack of advocacy contributed to the problem:

> if … we are going to treat this person involuntarily … how are we going to get them to do an advanced statement for that?… I think frontline staff do navigate that quite well. Because they're the ones that have to go and give people medication against their will and all of that kind of stuff. I just think some like ways of recognising that … they could get an advocate (Clementine, Nurse).

Consumer Perspectives

The following section provides findings from interviews with 8 of the 30 consumer participants who had direct experience of CTOs. It describes their varied experiences of being placed and living on a CTO and their role in decision-making. For some the impact was wholly negative, while others saw some benefits. Many could identify a rationale for why they were put on a CTO, even if they did not agree with this decision. Others reported a lack of information and feelings of powerlessness that pervaded the whole experience. Being forced to have medication was an important theme, in both understanding the purpose of CTOs and in relation to distressing experiences attributed to being on a CTO.

Views on Why CTOs Were Implemented and Their Impact

Most consumers thought CTOs were made because they were "non-compliant" or identified by treatment providers as someone who was potentially at risk and might harm themselves or others if they did not take medication as prescribed. Events from the past and when the person was unwell were usually used to explain the CTO to participants, but many felt that there was not enough recognition that things had changed. However, participants also described benefits from the support and treatment obtained while on a CTO including medication and psychosocial support:

> for me, I, I think it was necessary … because I could have, I could have gone on you know longer until … you know some circumstances, because I was, I was doing some silly things that could have got me killed (Cheryl).

Transparency, Information, and Decision-Making

Most participants described not getting much information about CTOs and why they were placed on one. However, one participant described the CTO as a (welcome) way to get out of hospital, and because it was consistent with his own priorities, he did not object or even seek more information at the time. This is a continued reflection on how CTO decision-making is in the hands of the service providers and—at least for this group of consumers—there was minimal evidence that they had been involved in the decision as the following quote indicates:

> There was never a conversation about CTO, being put on a CTO. It was only the last conversation with my psychiatrist from the psych ward when she last came to see me before I was being discharged, that's when she told me. She goes, "You'll be put on a CTO and which means you have to comply with your medication and you have to go down, have your injection." Like she just described it to me and I said, "All right, yeah. I'll do that, yeah." But at that point in time after you've been in the psych ward for six weeks, you'll agree with anything to, you know, just leave for a bit (Amrick).

Some of the experiences of disempowerment people feel on CTOs was related to this lack of information and fear of the mental health system*:*

> I wasn't told nothing about that so I didn't know what was going to happen about the treatment order yeah. Oh it was nerve-wracking … you kind of felt didn't know, didn't know what was going to happen so you had to kind of be patient and wait for it to see what was going to happen (Lily).

Participants identified CTOs and this lack of information as increasing their experience of stigma. For example,

> I read it (the order) and it was after when she left I read it and then I, and then I thought oh my goodness they've put me on something, I mean I felt like I was a criminal (Yolanda).

Being Forced to Take Medication and Endure Side Effects

Medication side effects, their impact, and not feeling heard about them, was a key theme in the consumer interviews. Many thought the CTO was, in some ways, forcing them to tolerate side effects. They considered this an injustice because of how unpleasant the side effects were and the significant lack of autonomy that not having choice about mediation represented. Thus, descriptions of feeling disempowered and lacking choice and control often featured in discussions about side effects as follows:

> Because you know a few of the medications I'd had before that, I'd had you know really bad side effects

> from and I just was like no, I'm not taking this … the side effects are just making me miserable (Cheryl).

Disempowerment

Most consumers referred to their experiences on CTOs as disempowering and stigmatizing, even if it had not been particularly distressing. Participants also described the loss of choice and control about treatment and care that comes with being on a CTO. This was also linked to the participants' dissatisfaction with treatment they were receiving, the lack of trust people had in them, and not being heard:

> I feel I have no choice in the matter really. That's the way I feel. Like either it's going to be taking the—taking the depot or feeling sick. So that's the only two choices I have and even if I do try to tell the doctor, you know, can we change medications, I don't think the point's getting across to them. So I don't—I, I can only take the medication, that's it (Amrick).

Consumer Perspectives on SDM and Self-Advocacy

Participants talked about decision-making in more general terms without specific reference to SDM. However, they had all been involved in substitute decision-making, and their accounts indicated links to SDM through references to strategies they employed for their views and preferences to be heard. They recalled relying on self-advocacy when they tried to improve their situation, perhaps through a change of medication, a reduction in the dosage, or asking to be discharged from the CTO. Some attempted to self-advocate through conversations with their treating team and others through getting independent access to information. Some participants described seeking help from other professionals or the Mental Health Review Board (now tribunal). No participant referred to ever having had an independent advocate. For at least one participant their self-advocacy had to extend to convincing family members that they could be discharged from the CTO. A few consumers also acknowledged the disparity in approaches to how CTOs were administered, with some articulating the benefits of approaches consistent with SDM such as information-sharing and inclusion in the process and, in turn, increased empowerment.

> I just followed the psychiatrist until I started lactating. And that's when I realised that I needed to sort of stand up for myself a bit better. Because I was certainly well and I read the brochure they had in the waiting room about … being on a Community Treatment Order. And I read through the criteria and I thought I definitely—you know I'm definitely well so I don't belong on this CTO. So it's time that I, you know, stand up and just say to them, look you know you're keeping me on this treatment order and I'm well but I'm also compliant, I'd been compliant for—I think it was 10 months (Alejandra).

Family Supporter Perspectives

In this section, the experiences of family members who were supporting their relative on a CTO are described. As with other participants, their perspectives are mixed. Many identified CTOs as helpful especially through influencing their family member to take medication. However, they also expressed concerns about getting help and support and not always being sufficiently involved in the processes around CTOs. There were concerns among family supporters that CTOs may be used too readily without exploring other options to understand why their family member was not taking their medication. Some hoped that the new Act would encourage improved communication, but others were also concerned that the new Act might lead to more people being discharged from their CTOs, leading to risks of relapsing or disengaging from services. While some supported their family member to gain more autonomy and respect, they appeared to be fearful that this came at a price for them in potentially having to deal with negative consequences such as their family member becoming unwell or needing to go to hospital. Themes that emerged from the family supporter interviews suggested that there were problems carers identified in the implementation of CTOs. These included that the orders were sometimes just part of the routine rather than a well-considered intervention, could be perceived as a punishment, and were not always the best solution.

Problems With the Implementation of CTOs

One family supporter expressed concern that CTOs were often not implemented in ways that met the needs of their families over the long term, suggesting they were either inflexible and not available as a short-term option, or only used for crisis management. Others talked about clinicians relying on CTOs and this just being a routine option without much thought being given to the purpose of the order:

> You know, clinicians and clinical staff just fall into the trap of, "I've seen this before, we better do this."Rather than taking each situation on its [um], you know, uniqueness (Nicole, Sister).

Three family supporters discussed how CTOs can be perceived as a punishment:

> I did say to my son, "If you wanted to go to the legal aid I'm there to support you."And he said, "Why?If I get sick so they, they would treat me bad and they would extend the CTO." He was scared (Tatiana, Mother).

Reducing Worry and Uncertainty

Most family supporters noted that CTOs sometimes helped alleviate worry and uncertainty while the person they cared for was on the order. Sometimes this related to serious concerns about harm to the person or others, but mostly it was about how CTOs encouraged the person to take medication.

> Lots of times, he's been on everything, yes lots of Community Treatment Orders yes, and he does stick by them when he's on them. Which is good, because you know that he's going to take his medication, and

> you're going to have a bit of relief for a while. So, but then they don't last forever, and then he goes off them (Wendy, Mother).

Family supporters often identified the CTO as helping to prevent the person relapsing, and this contributed to them not having to worry so much. A few family supporters expressed concern about the wellbeing and recovery prospects of the person they were supporting, should they experience a relapse of symptoms if they were taken off the CTO:

> Each time he has an episode, I'm sure it's worse for his brain (Penny, Mother).

CTOs Are Not Always the Solution

Even in the context of reduced worry, most family supporters expressed frustration about CTOs often not being the best solution to the problems faced by the person they cared for. They described how CTOs and forced medication seem to be the only response from service providers available to people not taking their medication, and having a crisis or an admission to the inpatient unit. They described how often the situation can be much more complex than the person not taking medication. Family supporters talked about the lack of support for issues such as addiction to substances and the need for other therapeutic interventions:

> Every time discharged on a CTO but unfortunately it hasn't been any treatment except every fortnight he have to go and see the case manager for his depot and the psychiatrist every three/four months, sometimes more than four months (Tatiana, Mother).

Some family supporters expressed concerns that MHPs could rely on a CTO to encourage their family member to take their medication, rather than taking more time to understand why the person was not taking medications prescribed.

> Like, I don't think that non-compliance should necessarily equate to, "You need to go on a Community Treatment Order". I think, you know, there are so many factors that go into an episode and, you know, people are just a lot more complex than drawing a straight line between those two things. So in my brother's case, when he's had, you know, 15 years of good compliance, became unwell and then it was suggested that he go on a Community Treatment Order. We had to fight really hard for that to not happen. (Nicole, Sister)

Lack of Involvement in Decision-Making

Family supporters commented that the processes around CTOs, particularly under the previous Act, had made their involvement difficult. Hence, their concerns and their role in providing ongoing care were not necessarily taken into consideration. Some described the difficulties of providing support when their family member was taken off a CTO. This particularly impacted on their ability to access support from the treating team to, in turn, support their family member not to become unwell and return to the hospital.

> But quite often carers do get upset that they're not being heard (Hannah, Stepmother).

Opportunities for Supported Decision-Making in Changing Legislation

Supporters also saw opportunities in changes that had been made to legislation. One supporter described the establishment of the new Mental Health Tribunal as "huge." She was optimistic that it would be easier for supporters to access information and attend CTO hearings:

> I've got a feeling that it's meant to be easier for carers to have access to the information, for them to have an opportunity to attend the hearing (mental health tribunal)… I think staff and clinicians need to talk in a way that carers understand, but you know, as a carer it's good to learn some of the terminology so that, you know, you have more understanding of the system. (Natalia, Mother)

Some supporters were concerned about some of the changes effected by the new mental health legislation. They worried that the reduction of CTO use, in line with the intentions of the principles of the new Act, could lessen their capacity to support their family members to take their medication when they came home from hospital.

By contrast, another supporter agreed with the principle that all people should be able to make decisions involving risk:

> I guess life is a risky business and so people need to be able to take their own calculated risks (Raewyn, Sister).

DISCUSSION

Consistent with previous qualitative research in Australia and elsewhere, service providers, family supporters, and consumers shared many similar perceptions regarding the experience of CTOs, as well as a mixed and often ambivalent stance about CTOs (10, 11, 25, 26). Most consumers described CTOs as wholly negative; both the process of being placed on a CTO and its impact. Others saw some benefits related to getting treatment when they were unwell or being discharged from hospital. Psychiatrists and MHPs were concerned about the disempowering impact of CTOs but continue to see the orders as sometimes necessary to meet their duty of care obligations. Family supporters identified benefits in the use of CTOs, while also expressing concerns, including overemphasis on medication compliance and lack of other therapeutic interventions. Other sources of concern or ambivalence about CTOs related to their potential for overuse and their impact on relationships between services providers, consumers and family supporters. As Light et al. (12) also found, participants appeared concerned that CTOs sometimes act as a substitute or antidote for other practice and systemic problems, even seeing their use as a way to guarantee continuing access to care under conditions of relative scarcity of resources (12).

This study asked consumers to reflect on their experiences on CTOs in relation to supported decision-making. Very few consumers described experiences where they were supported to make decisions about their treatment. It was usually only when side effects or symptoms became unbearable that they were catalyzed into participating in decisions. However, many of the MHPs, psychiatrists, and family supporters appeared hopeful about the potential for mechanisms introduced by the Act to enable positive change in CTO implementation. Many identified positive outcomes for consumers and were already seeing "signs of change." Nonetheless, there were fears that increased emphasis on SDM would result in reducing the number of people on CTOs, which could lead to consumers being subsequently abandoned by services providers. Davidson et al. (27) have previously observed that an emphasis on increased autonomy may have the unintended consequence of benign neglect when services are not equipped for less reliance on coercive interventions (27). Vine and Judd (28) have also recently described how reduced funding in Victoria for mental health services heightens this risk (28).

There was some divergence in emphasis that may be an important contribution to understanding different stakeholder experiences with CTOs. Consumer concerns regarding experiencing and not being heard about medication side effects, and the degree to which this is central to their experience of CTOs, appear to be important. It suggests the ongoing difficulties the consumers are experiencing when what is so critical to them may not be as significantly appreciated by service providers. Similar to Lawn et al. (29), this was undervalued by some practitioners, suggesting fundamental problems associated with the sometimes pragmatic and instrumental use of CTOs to address systemic problems or deal with practitioners' own fears (29).

A focus on SDM may assist in aligning Australian mental health legislation with international human rights obligations (30). MHPs and psychiatrists were strongly aware of the potential for the new mechanisms enabled by the Act to facilitate SDM and appeared to have some optimism about the possibilities for SDM. However, the consumers and family supporters appeared to have little information about this. Diverging views may have been because some participants were reflecting on past experiences and were not currently as actively engaged with the mental health system. This also suggests that there is significant room for further progress in changing practice. Trends in the use of CTOs and people's experience of their use makes a valuable contribution to the question of whether jurisdictions are keeping pace with international expectations about reducing coercive interventions and enabling choice and control. The findings here point to only limited impact so far.

Consumers were more likely to see self-advocacy and personal empowerment as most influential for positive change, rather than mechanisms imposed or enabled by policy or legislation. Family supporters particularly identified improved communication as one of the most important mechanisms to enable their involvement in providing support to their family member. However, the persistent problem of family supporters not feeling heard and lacking opportunities to communicate their perspective was evident (31).

Thus, the findings in relation to this subgroup of participants commenting on CTOs are consistent with our overall project findings (21, 22). Implementation of SDM to achieve positive outcomes for consumers, including reduced reliance on coercion, requires an integration of legal mechanisms, interpersonal skills, consumer empowerment and advocacy, and management and leadership that includes adequate resourcing of community-based services (21, 22).

STRENGTHS AND LIMITATIONS

These findings are part of a larger study that did not specifically focus on CTOs (21). Hence, the extracts are taken only from the relevant interviews. There is a relatively small number of participants whose experiences of CTOs could be drawn on for this paper, some of whom were not currently on a CTO. Members of the police, legal practitioners, and tribunal members were not included among those interviewed even though they are also important stakeholders in relation to SDM and CTOs. This suggests the value of extending qualitative research to include broader stakeholder experiences in future.

CONCLUSION

There was a general agreement among a diverse range of MHPs and psychiatrists, family supporters, and consumers that SDM has a role in CTOs. Their comments were focused on reducing experiences of coercion and moving towards less reliance on CTOs. The findings also provide some confirmation that current efforts to introduce mechanisms to enable more opportunity for SDM are relevant to people on CTOs, even though participants acknowledged this would require considerable changes in practice to encourage greater focus on respecting the views and preferences of people on CTOs. It appears that the aspiration to give people more choice and control is currently limited in practice. Imbalances of power persist in the service system in Victoria, thus limiting the influence of human rights-based principles. Participants described medication as the main, sometimes only, form of treatment and that clinicians have a low tolerance for "non-compliance." Consumer perspectives are important in describing and highlighting the long-term disempowering and stigmatizing impact of CTOs and the distress associated with perceived inability to discuss medication side effects. Family supporters were often caught between seeing benefits in CTOs but also concerned about the quality of care. A key issue for them in SDM was improved communication. Consumers appeared to locate opportunities for development of self-advocacy as the most effective way to ensure their views and preferences are heard and respected.

Perceived fear, risk of harm to the consumer or others, and stigma represent important overarching issues in the implementation of CTOs and in enabling SDM. While challenging stigma and respecting the "dignity of risk" was acknowledged by all, these participants still expressed considerable fear about people having more autonomy and the potential consequences. This extended to the potential for consumers to lose access to scarce mental health resources if not on a CTO. The shift to incorporating SDM into the implementation of CTOs requires system-wide transformations and a significant shift in policy, values, and practice in all mental health service delivery contexts. Attention to ensuring that consumers are heard and empowered, that staff have the necessary skills and resources, that mechanisms such as advance statements are fostered, and that management and leadership support system change appear to be essential factors behind attempts to align Australian laws and practice with international human rights obligations (21, 22).

ETHICS STATEMENT

This study was carried out in accordance with the recommendations of the Monash University Ethics committee with written informed consent from all subjects. All subjects gave written informed consent in accordance with the Declaration of Helsinki.

AUTHOR CONTRIBUTIONS

LB drafted the manuscript. RK and JF contributed to the data analysis and made substantial contributions to the final manuscript. BM and HH provided expert contribution and comments on later drafts.

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[1] For more details see https://socialequity.unimelb.edu.au/__data/assets/pdf_file/0006/2701626/Kokanovic-et-al-2017-Mental-Health-and-Supported-Decision-Making-ARC-LP-Project-Report.pdf

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Reflecting on the Reasons Pros and Cons Coercive Measures for Patients in Psychiatric and Somatic Care: The Role of Clinical Ethics Consultation. A Pilot Study

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Background and aim: Coercive measures in patient care have come under criticism leading to implement guidelines dedicated to the reduction of coercion. This development of bringing to light clinical ethics support is hoped to serve as a means of building up awareness and potentially reducing the use of coercion. This study explores the specific features of ethics consultation (EC) while dealing with coercion.

Material and method: Basel EC documentation presents insight to all persons involved with a case. The EC database of two Basel university hospitals was developed on the grounds of systematic screening and categorization by two reviewers. One hundred fully documented EC cases databased from 2013 to 2016 were screened for the discussion of coercive measures (somatic hospital and psychiatry: 50% cases).

Results: Twenty-four out of 100 EC cases addressed coercion in relation to a clinically relevant question, such as compulsory treatment (70.8%), involuntary committal (50%), or restricting liberty (16.6%). Only 58.3% of EC requests mentioned coercion as an ethical issue prior to the meeting. In no case was patient decisional capacity given, capacity was impaired (43.5%), not given (33.3%), or unclear (21.7%; one not available).

Discussion: As clinical staff appears sensitive to perceiving ethical uncertainty or conflict, but less prepared to articulate ethical concern, EC meetings serve to "diagnose" and "solve" the ethical focus of the problem(s) presented in EC. Patient decisional incapacity proved to be an important part of reasoning, when discussing the principle of harm prevention. While professional judgment of capacity remains unsystematic, rationality or even ethicality of decision making will be hampered. The documented EC cases show a variety of decisions about whether or not coercion was actually applied. Ethical reasoning on the competing options seemed to be instrumental for an unprejudiced decision complying with the normative framework and for building a robust consensus.

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Conclusions: The recommendation is whether EC should be used as a standard practice whenever coercion is an issue—ideally before coercion is applied, or otherwise. Moreover, more efforts should be made toward early and professional assessment of patient capacity and advance care counseling including the offer of advance directives.

Keywords: coercion, ethics consultation, case series, law, guidelines, psychiatry, somatic care

INTRODUCTION

In constitutional states such as Switzerland, the use of coercion against persons requires explicit legal legitimation (see below); moreover, within this legal framework, ethical justification is regarded to be mandatory. Medicine and healthcare workers are, therefore, obliged to consistently justify any limitation of their patient's personal freedom within reason, specifically to prevent harm to the patient or others. Some of the questions regarding the use of coercion are, e.g.: How to appropriately manage an inpatient violating the house rules and refusing long-term medication? Is involuntary hospitalization of an incompetent patient with aggressive and self-harming behavior justified? Examples such as these illustrate that the lack of insight and cooperation as well as aggressive patient behavior are central issues that indicate not only a psychiatric context. Critically ill patients in somatic care may also trigger discussion on coercive measures. Coercion may concern treatment, diagnostic measures, patient location, accommodation, and social environment. It may also affect the therapeutic alliance between patient and therapist and, thus, cause problems for the involved healthcare professional (1–3). Quantitative data on coercive measures applied in patient care are "hard to compare, since coercive measures are rarely systematically recorded, nor calculated and analyzed or expressed in a consistent way"; however, "studies in Europe and the US indicate that 10 to 30% of all admitted patients are exposed to seclusion, restraint, or forced medication in acute psychiatric wards" as Janssen et al. report (p. 430) (4). Only since 2015, Swiss National Association for Quality Development in Hospitals and Clinics (ANQ) assessment of the exertion of coercive measures has been systematically carried out throughout Switzerland. Previously, Lay et al. (5) collected quantitative data. However, as stated by the authors "for ethical and clinical reasons it is therefore indispensable to scrutinise the use of coercive measures and to investigate the conditions under which these procedures are justified and effective" (p. 250) (5). Studies focusing on the ethics of coercion in healthcare are still rare, especially studies shedding light on ethics consultation (EC); the inclusion of a qualitative research approach befitting exploration of new terrain is required. Moral distress or ethical challenges experienced by staff facing coercive measures have been investigated in recent papers from the Netherlands and Norway (1, 2). Norvoll et al. evaluated seven telephone interviews with "key informants" in Norwegian mental healthcare institutions who had not, as of yet, used ethics support; he then came to the encouraging conclusion that an "explicit use of formal clinical ethics support" might help to "opening up a moral space in health care facilities" (6). More specifically, Syse's (et al.) report on the Norwegian clinical ethics committees showed that from 144 mental health and addiction treatment cases, 23 addressed "dilemmas related to coercion (formal and informal)" (p. 83) (2016). She concluded: "Given the field's ethical weight of seriously ill and vulnerable patients, it seems reasonable to suggest that focus on mental health care and addiction in ethics committees should be strengthened (p. 86) (7).

Coercive measures have increasingly been put to the test bench in various countries—a movement that has led to the implementation of policies dedicated to the reduction of any form of coercion in medicine, e.g. in Germany (8), Norway (9), or the Netherlands (10). This development has been associated with the effort to promote clinical ethics support (CES) that is hoped will serve as a means of increasing awareness and potentially reducing the use of coercion (11). Completing the picture, it must, however, be acknowledged that coercive measures may, where justified, even be considered necessary, e.g. to restore a dehydrated patient's decisional capacity by infusion of liquid and medication, or to prevent self-destructive behavior in a patient occurring as a symptom of a treatable and, therefore, reversible pathological condition. Typically, clinical ethics has to address the coexistence of contradictory obligations: here, the duty to respect and the duty to protect is a matter of *phronesis* to distinguish between situations requiring one or the other priority, and CES is attributed in the potential to improve the process and outcome of such ethical deliberation. Any presupposition depreciating coercion in general as "unethical" would be simplistic, neglecting the needs for ethical and practical orientation originating in situations of urgency and emergency where competing values have to be weighed.

Taking the difficulty of this distinction into account, a national guideline on coercive measures was issued by the Swiss Academy of Medical Sciences in 11/2015 (12). At the same time, a systematic case series of 100 EC cases in one major Swiss medical center (Basel) revealed—firstly—the striking result that coercion ranged indeed among the top themes of EC, referring to coercion as the use "of pressure, force or covert action to control the movement, treatment or behavior of a patient against his/her will" (p. 62) (13). To further investigate, the study presented here was initiated to offer a follow-up analysis of those cases, of the same sample, that included the discussion of coercion. Against the background of current literature, the presented case series analysis on 100 ECs addressing the ethical reasoning on coercive measures is new, both in content as well as in design.

Research Questions

How frequently are coercive measures discussed in this sample of 100 EC cases? Which types of coercion are considered or acknowledged? What are the reasons pros and cons using coercion found in the EC documentation? How is the EC service being evaluated by the requestors according to outcome criteria such as consensus, implementation of results, and helpfulness?

LEGAL FRAMEWORK AND GUIDELINES

Medical coercive measures include mainly: measures restricting liberty, compulsory treatment, and involuntary committal/detention of persons admitted voluntarily. The right to self-determination and the right to liberty are affected by coercive measures, both of which are guaranteed by the European Convention of Human Rights (especially Articles 5 and 8) as well as by Swiss National Law (Article 10 Swiss Federal Constitution). Therefore, restriction of these rights requires special legal legitimation. Coercive measures are only permissible as an exception and may be considered as *ultima ratio* [see Ref. (14)].

Legal requirements provide a framework for answering questions arising in the area of conflict between respect for autonomy, beneficence, and non-maleficence. In Switzerland, the Swiss Child and Adult Protection Law was established in 2013. The Swiss Child and Adult Protection Law helped to harmonize the national legal structure with regard to medical coercive measures. Few specific issues remain within the cantonal responsibility and can lead to cantonal differences like the aftercare for patients after involuntary committal in Article 437 Swiss Civil Code (SCC).

In patients lacking capacity, coercive measures may become unavoidable if, in spite of vigorous efforts, an imminent risk to welfare cannot be averted with the agreement of the person concerned. In patients with decisional capacity, coercive measures are principally not permissible according to Swiss law. They can only be applied in connection with an involuntary committal, in the execution of penal measures, under the Epidemics Act, or possibly on the basis of cantonal regulations—e.g. the possibility for compulsory treatment in a context of somatic disorders, § 26 of the Canton Zurich Patients Act, LS 813.

Involuntary committal is when a person is involuntarily admitted to an appropriate institution for treatment and care. A prerequisite for the ordering of involuntary committal according to Article 426 SCC is the existence of a debilitating condition (mental disorder or disability, or severe neglect) necessitating treatment or care that cannot be provided by other means than through involuntary committal to an appropriate institution. Incapacity is not a requirement for the ordering of involuntary committal (see above). While involuntary committal is always a coercive measure, it does not necessarily mean that the person concerned may be subjected to compulsory drug treatment (12). Compulsory treatment may only be undertaken in cases where the patient lacks capacity, intrusive alternative measures are available no less, and treatment has been ordered in writing by the chief physician (Article 434 SCC) or is required in an emergency (Article 435 SCC). In relation to a treatment decision, a person either has or lacks capacity (12). In individual cases, it may be very difficult to determine whether or not a person has capacity. According to Article 16 SCC, capacity is generally presumed to be present. Complementing the legal provisions, the national Swiss Academy of Medical Sciences (SAMS) guidelines on coercive measures (12) explain how to apply coercive measures. The intention is to raise awareness that any coercive measure, even if it complies with all procedural requirements, constitutes a serious infringement on constitutionally enshrined personal rights and, therefore, requires ethical justification.

APPROACH OF CLINICAL ETHICS SUPPORT

The University Hospital Basel (USB), somatic medicine of adult patients, and the Psychiatric University Hospital Basel (UPK) are autonomous institutions sharing one Department of Clinical Ethics, providing a CES service and collaborating with two different advisory boards. Overall, the EC service is focused "on demand" from all healthcare professionals within the respective institution, but it is also open to patients, their family, or legal substitute decision-makers (15). As most of the EC meetings are triggered by clinical staff, their goals refer to reconsidering or optimizing the respective treatment plan. Whenever goals are articulated, apart from content-wise-defined requests of healthcare professionals, a propensity is to obtain assistance or guidance in finding one's way toward an ethically sound procedure and conclusion on open or controversial questions. Patients or their relatives prefer to formulate their own wishes for being heard and advised on their options or concerns and to receive help in making themselves better understood by their clinical vis-à-vis. Building an explicit consensus is an important aim of EC that is evaluated regularly and thoroughly. Any treatment (or other intervention, e.g. placement) decision is not permitted to be delegated to an "ethical" authority. Relatively, the responsibility for treatment decisions remains where it has always been, i.e. in the agreement between the physician in charge and the patient or substitute decision-maker relying on shared decision making. (Some decisions may be taken by nurses or social workers and the patient party). The precise locus of the decision making responsibility may be clarified by means of an EC. The Basel approach and ethical framework (16) refers to the four principles of biomedical ethics (17), the concept of a systematic change of perspectives [e.g. Refs. (18, 19)], an escalating repertoire of ways of how to deal with the normative dimension (20), and elements of discourse ethics (21). The role of EC and the chair is, according to the Basel approach following the concept of ethics facilitation (22), not directive: The leading ethicist does not make judgments or decisions about using coercion or not. Rather, following an escalating model, the ethics consultant's repertoire covers a wide range of activities used for a clear and intersubjective problem analysis and consensus building on problem solution (20). This is associated with honoring the experiences reported and views shared by the clinical staff, patient representatives, or other stakeholders as well as the normative-ethical framework of laws and guidelines. As a result, every EC works as a single-case assessment with an explicit process of agreement on the further procedure.

MATERIAL AND METHOD

This article provides an in-depth analysis of the published Basel EC case series (13). The case series uses a database developed on the grounds of systematic screening and categorization of EC documentations. Basel EC documentation (minutes) is highly structured in sections, mostly co-authored by a junior clinical ethicist and the EC chair acknowledging comments from the participants. It includes a front page containing the explicit demand and initial questions, the meeting's participants, any preliminary options (for problem solution), and the final ethical and practical conclusions qualified by information on the consensus. This is followed by an overview of (medical) facts and information, especially about the patient's situation. Next, ethical and legal aspects are formulated explicitly as well as any observations about the course of reasoning. Minutes close with the rehearsal of the ethical conclusions (page 1) complemented by articulating further steps, e.g. how the patient should be informed and by whom, open questions or obligations regarding follow-up. Usually, the minutes cover five or more pages. The single front page serves for quick orientation, while the full document shall enhance transparency for nonparticipants on the reasoning and conclusions considered useful if doubts or controversy arise [according to Ref. (23)]. Attached is a feedback form to be filled in by the requesting party. This form has standard and open questions that serve as a brief evaluation for the requesting party after the meeting (return rate for this sample: 54.2%).

For this study, 100 EC cases from February 2012 to November 2015 of the (more comprehensive) EC database of the Basel University Hospitals were screened for coercion as the main ethical issue, leading to a sample of 27 EC cases. Three of these cases were excluded from analysis, as they dealt with issues of organizational ethics of coercion (rather than clinical) referring to, at the time: The salient process of opening the doors of a psychiatric ward (24). No children were included. The documentation of the resulting final sample of 24 EC cases was screened by two reviewers using content analysis. The following predefined categories were used: type of coercive measures addressed, coercive measures agreed on in the EC conclusion, previously existing involuntary committal, issue of coercion stated in the EC request, reasons pros and cons coercive measures. The reasons pros and cons coercion were further analyzed according to the four principle approaches: respect for autonomy, beneficence, non-maleficence,[1] and justice (17). Further categories from the first case series regarding demographic and clinical characteristics of the patients involved, such as sex, age, disease, decisional capacity, or prognosis, were included in the analysis [cf. Ref. (13)]. Data were statistically analyzed using IBM SPSS Statistics 25. USB-EC and UPK-EC were analyzed comparatively due to their different core competencies in patient care including management of coercive measures.

RESULTS

Twenty-four EC cases mainly address ethical issues related to coercive measures for individual patients: 10 at USB and 14 at UPK.[2] Thus, such issues are slightly more frequent in the UPK ECs than in the USB ECs (58.3 and 41.7%, respectively). Most requests for such ECs come from adult psychiatry/UPK (58.3%), followed by requests from the medical division/USB (29.2%), and—with a clear distance—the surgical division/USB (8.3%). Physicians request EC more often (66.7%) than other professions, such as nurses (20.8%) or psychologists (8.3%) do. Patients or surrogates attend small minority of UPK- and USB-ECs only (4.2 and 12.5%, respectively). In almost half of the EC cases (45.8%), the written request for the EC did not specify—explicitly or implicitly[3]—"coercion" as the ethical issue in question beforehand. In these cases, the ethical issue of coercion is articulated during the EC for the first time, and its explicit articulation may be part of the clarification process.

Patient Characteristics

The median age of the patients is 47.0 years, and all patients are adults (range 20–70 years). Female patients are more often discussed in ECs addressing coercive measures (70.8%) than in ECs in total (57.0%). Almost two thirds of the patients have a combination of somatic and psychiatric diseases (62.5%), one third suffering from psychiatric diseases only (33.3%), and one single patient in the sample has [according to International Classification of Diseases, 10th Revision (ICD-10)] just a somatic disease. Prognosis regarding the main medical issue of the patient is (according to caregivers) most often uncertain (33.3%) or poor (29.2%) but never terminal. However, good recovery is judged probable only in two patients. Patient decisional capacity is (according to caregivers) given in none of the ECs addressing coercive measures. In three fourths of the ECs, capacity is either impaired or not given (41.7 and 33.3%, respectively); in one fifth, it is unclear, whether it is given or not. Capacity is, thus, significantly more often compromised in ECs addressing coercive measures than in ECs in total (binary logistic regression test: OR 1.845, 95% CI, p = .015). An advance directive (AD), according to the caregivers, is available only for one patient (information on AD is only available in 41.7%). Demographic and clinical characteristics are shown in **Table 1**.

Coercive Measures

In slightly more than one third of all 24 ECs, the participants of the EC (including the ethics consultant) agreed on *applying* one or more coercive measures for the patient in question as the best course of action (37.5%). Coercive measures most often agreed upon were involuntary committal (25.0%), followed by compulsory treatment (20.8%). This equals the frequency of ECs in which the participants did agree on *not applying* such

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[1] According to Beauchamp and Childress, the principle of non-maleficence refers only to the duty not to inflict evil or harm. The duty to prevent or remove harm, e.g. the concept of harm reduction, refers to the principle of beneficence.

[2] The ethical issues of all 100 EC cases are reported in Reiter-Theil and Schürmann (13).

[3] A request identifies coercion implicitly, if it states measures that are against the will of the patient.

TABLE 1 | Demographic and clinical characteristics of patient discussed in ethics consultation (EC).

Characteristic	Hospital		Total (*n* = 24)	% of total (*n* = 24)
	University Hospital Basel (USB) (*n* = 10)	Psychiatric Hospitals of the University Basel (UPK) (*n* = 14)		
Sex				
Female	7	10	17	70.8%
Male	3	4	7	29.2%
Age				
Median age (year) (range)	52.1 (28–69)	43.0 (20–70)	47.0 (20–70)	
Type of disease				
Somatic disease	1	0	1	4.1%
Psychiatric disease	1	7	8	33.3%
Somatic and psychiatric disease	8	7	15	62.5%
Decisional Capacity				
Given	0	0	0	0% (0%*)
Impaired	4	6	10	43.5% (41.7%*)
Not given	6	2	8	34.8% (33.3%*)
Unclear	0	5	5	21.7% (20.8%*)
Not available	0	1	1	4.2%
Prognosis				
Good	1	1	2	8.3% (9.5%*)
Guarded	2	2	4	16.7% (19.0%*)
Poor	3	4	7	29.2% (33.3%*)
Terminal	0	0	0	0% (0%*)
Unclear	2	6	8	33.3% (38.1%*)
Not available	2	1	3	12.5%
Advance directive (AD) available				
Yes	1	0	1	4.2% (10.0%*)
No	3	6	9	37.5% (90.0%*)
Not available	6	8	14	58.3%

**Including missing data.*

measures as best course of action. In one quarter of the ECs, the participants left it *open*, whether performing coercive measures can be recommended at this time, e.g. due to missing information or other available options to be tested first, with priority. In some cases, coercive measures (e.g. involuntary admission) had already been applied before the EC took place (41.7%)[4].

Several types of coercive measures were discussed in the ECs: compulsory treatment (70.8%) such as compulsory pharmacological treatment, artificial nutrition, sedation, or diagnostics; involuntary committal (50.0%); and measures restricting liberty such as mechanical restraints or isolation (16.6%).

The spectrum of ethical reasoning as documented includes a variety of reasons pros and cons coercion that can be categorized according to the four principle approaches. All reasoning pros coercion ("pros") considers reasons referring to beneficence, such as prevention of dying, protection of patient best interests (relating to health or quality of life), protection from patient self-harm, or averting risks to third parties. Reasons referring to respect for autonomy are considered in two thirds of all reasoning pros (66.7%). These reasons relate to the issue of the patient's lacking decisional capacity, arguing that the patient's wishes against treatment are not autonomous due to his/her (temporary) incapacity and/or that compulsory treatment may restore decisional capacity and, thus, support his/her autonomy. Some reasons pros refer to the principle of justice, e.g. that not to treat the patient coercively would contribute to an unjustified undertreatment or to ineffective use of resources (29.2%). Only in one case a reason pros is mentioned referring to non-maleficence: involuntary committal would terminate an existing disruptive "therapeutic relationship" and allow the patient to build up a new and better one (4.2%).

Reasoning cons coercion ("cons") most often appeals to reasons referring to respect for autonomy, namely, that coercive treatment would inflict the right of the patient to decide about his/her own treatment (83.3%). In half of all reasoning cons, the principle of beneficence is referred to. It is argued that coercive measures would have a low probability of success or would not improve the patient's situation regarding his/her health or quality of life. One third of the reasoning cons appeals to reasons related to non-maleficence, namely, that coercive measures would have high risks of aversive effects for the patient. Only one case refers to a reason cons about justice, i.e., that there are no institutions available to treat the patient effectively against his/her will (4.2%).

The characteristics related to coercion and reasoning about coercion are shown in **Table 2**.

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[4] This did not affect the numbers of EC that resulted in agreement for coercive measures.

TABLE 2 | Type of coercion and reasoning.

Characteristics	Hospital		Total	% of total
	University Hospital Basel (USB)	Psychiatric Hospitals of the University Basel (UPK)		
Coercion as main issue in EC	*(n = 50)*	*(n = 50)*	*(n = 100)*	
Yes	10	14	24	–
No	40	36	76	–
Type of coercion addressed*	*(n = 10)*	*(n = 14)*	*(n = 24)*	*(n = 24)*
Involuntary committal	5	7	12	50.0%
Compulsory treatment	7	10	17	70.8%
Measures restricting liberty	2	2	4	16.6%
Type of coercion according to conclusion*				
Involuntary committal	3	3	6	25.0%
Compulsory treatment	2	3	5	20.8%
Measures restricting liberty	0	1	1	4.2%
Previous involuntary committal				
Yes	3	7	10	41.7%
No	7	7	14	58.3%
Request includes issue coercion				
Yes, explicitly	2	5	7	29.2%
Yes, implicitly	2	4	6	25.0%
No	6	5	11	45.8%
Reasons pro coercion*				
Respect for autonomy	6	10	16	66.7%
Beneficence	10	14	24	100%
Non-maleficence	0	1	1	4.2%
Justice	3	4	7	29.2%
Reasons con coercion*				
Respect for autonomy	6	14	20	83.3%
Beneficence	4	8	12	50.0%
Non-maleficence	3	5	8	33.3%
Justice	0	1	1	4.2%

**Multiple selection possible.*

Evaluation of EC—Outcome Criteria

All included ECs led, according to the documentation, to a consensus shared by the participants of the EC; this includes a newly formed explicit agreement. Characteristically, these agreements also cover procedural aspects such as who should try to convince the patient or other decision makers in order to still prevent the coercive measure. EC outcomes were, as far as reported, always implemented in practice afterward. EC meetings and written records are considered helpful by the requestors/feedback respondents in all cases. Outcome criteria are shown in **Table 3**. However, unavailable data are more frequent than optimal in this sample.

DISCUSSION

Clinical staff appears more sensitive to perceiving ethical uncertainty or conflict than being prepared to articulate a focus of ethical concern in precise terminology, especially regarding coercion. EC meetings have, thus, inter alia the role to identify or "diagnose" the ethics focus of the problem(s) presented in EC and to bring forward specific solution(s) according to the concept of ethics facilitation (22).

Patient Characteristics

Coercive measures are not only a matter of reflection in EC concerning the psychiatric patients in the sample (14 out of 24); they are also discussed in some cases of the somatic hospital (10 out of 24). Even there, patients may show complex conditions connected with psychiatric symptoms, especially loss of capacity, sometimes in connection with lacking insight and adherence contributing to deterioration of physical health.

Of the few studies quantifying ethical issues discussed in EC, most do not report figures relating to coercion (25–29). Some of them, however, report how frequently patient "autonomy" or "refusal" was the central topic in EC. Unfortunately, this may or may not include the discussion of coercion as long as it is not mentioned or excluded explicitly in the used category system. Without any standardized categorization of EC content such as coercion, comparative EC research will, thus, remain impossible.

Patient decisional capacity proved to be a key component of ethical reasoning, especially in relation to the duty to prevent harm. Alone, it is not a sufficient reason to justify coercion. According to the data, capacity had been qualified uncertain by the clinicians in one-fifth stimulating questions about the procedure and quality of assessment in practice. As capacity

TABLE 3 | Evaluation of EC—outcome criteria.

Characteristic	Hospital		Total (*n* = 24)	% of total (*n* = 24)
	University Hospital Basel (USB) (*n* = 10)	Psychiatric Hospitals of the University Basel (UPK) (*n* = 14)		
Consensus				
Yes	9	13	22	100%(91.7%*)
No	0	0	0	0% (0%*)
Not available	1	1	2	8.3%
Novelty of the consensus				
Yes	8	13	21	100% (87.5%*)
No	0	0	0	0% (0%*)
Not available	2	1	3	12.5%
Results implemented				
Yes	3	6	9	100% (37.5%*)
No	0	0	0	0% (0%*)
Not available	7	8	15	62.5%
EC/written records found helpful by requestor				
Yes	3	10	13	100% (54.2%*)
No	0	0	0	0% (0%*)
Not available	7	4	11	45.8%

**Including missing data.*

is significantly more often compromised in ECs addressing coercive measures than in ECs in total, it has to be acknowledged that this patient characteristic deserves the utmost attention and carefulness. As far as the professional judgment of capacity is made in a less than systematic way, the rationality or even ethicality of decision making on coercion may be impaired. This problem has recently been acknowledged by the Swiss Academy of Medical Sciences, issuing its new guideline on capacity by offering recommendations and protocols for capacity assessment that appeared after the EC cases took place (2018).

Only in 1 out of 24 cases was an AD known of or available. This is an alarming result: given the fact that loss of capacity repeatedly occurs after recurrent clinical signals, it is wondered why more patients had not been forewarned and prepared timely, e.g. by the clinicians involved. Switzerland adopted the Child and Adult Protection Law (as part of the SCC Revision) in 2013 supporting patient ADs that are legally binding when applicable. The USB provides internal AD tools; the staff is obliged to ascertain on admission any existing AD. The UPK support the use of Ads, and psychiatry-specific treatment agreements and internal tools are also available for staff education and patient counseling. Advanced decision making of this kind would be of great value to both patient and caregivers. In the EC approach practiced here, the role of EC and session chair is included, where appropriate, especially when incapacitation seems a forthcoming threat to the patient, raising the question whether an AD should be suggested to the patient—always in combination with counseling. Also, CES is offered in this regard for cases where need be.

Coercive Measures

Restriction of privacy or freedom of communication, detention of persons admitted voluntarily, or physical coercion (holding) were not discussed in these cases, although permissible under specific circumstances according to Swiss law. On the whole, the documented outcomes suggest the hypothesis that using EC does not predetermine whether or not coercion will actually be applied in a case. Such an unprejudiced attitude may be appreciated as indicating open-mindedness. It may also be challenged, however, in the light of guidelines and policies that are dedicated to actually reducing the frequency of coercion in patient care. The S3-Guideline of the German Deutsche Gesellschaft für Psychiatrie und Psychotherapie, Psychosomatik und Nervenheilkunde (DGPPN; German Association for Psychiatry, Psychotherapy and Psychosomatics) on the prevention of coercion: "prevention and treatment of aggressive behavior in adults" is also followed in Switzerland, too. As its title reveals, its goal is the abandonment of coercion altogether (8), and it does not address indications for coercive measures in nonaggressive patients with intentions such as, e.g. life-sustainment. In contrast, the Swiss guideline "coercive measures in medicine" does not run under a prohibitive title similar to DGPPN (12). It states in its preamble:

"The guidelines are designed to promote and maintain awareness of the fact that coercive measures of any kind—even if they comply with all the relevant procedural requirements—represent a serious infringement of fundamental personal rights and thus require ethical justification in each case. (…) In all cases, careful ethical reflection is just as indispensable as rigorous compliance with legal provisions and applicable guidelines" (p. 5) (12).

A wider range of phenomena and areas of application is indeed covered: Patients with somatic as well as mental disorders, children and adolescents, patients in long-term or in domiciliary care, and finally, patients undergoing execution of sentences and (forensic) measures. It is, thus, more applicable to the EC context. Even though the Swiss guideline does not request that coercion be foregone completely, it insists that it should be ethically reflected—as is the case in EC: Is the practice of EC in Basel to be criticized for not fighting strongly enough against coercion? Would we expect EC cases to go without coercion as the consultation process mobilizes potential for other, better problem solutions?

As a matter of fact, the UPK are ranging relatively low in applying coercive measures in light of the Swiss report on psychiatric institutions (30). As the ANQ statistics show, approximately 3,000 cases (4.3% of all cases) fall under the category "measures restricting liberty" (German: "Freiheitsbeschränkende Massnahmen"), which includes compulsory treatment, but excludes involuntary committal. While numbers such as these would exceed the existing availability of case-based ethics support, it does make perfect sense to consider implementing prospective EC before specific measures such as coercive treatment (medication) are decided for patients under certain conditions, especially loss of decisional capacity. Moreover, this could and should be complemented by retrospective ethical case discussions on a more regular basis as was put to the test in the context of opening doors (24). Retrospective ethical case discussions could be practiced institution-wise and within the framework of model projects accompanied by evaluation. Practiced in larger rounds, they could cover considerable numbers of interdisciplinary staff by supporting them to anticipate and master ethical challenges. Preventing coercion on a large scale requires the implementation of educational strategies and efforts to professionalize prevention and de-escalation of patient aggression, additionally [see Ref. (8)]. Both USB and UPK have engaged in related activities (USB guideline on violence in patients and relatives; USB minimal standard of restraint). However, in the UPK, such guidelines exist, for internal use only.

Reasons and Ethical Reasoning

Ethical reasoning about the competing options is crucial for an unprejudiced decision complying with the normative framework and for building a robust consensus. Also, in our EC practice, core requirements of the DGPPN, as well as the SAMS guidelines such as the proportionality and the priority on using the minimally invasive/coercive measures, are explicitly followed. However, the application of coercion may, in the individual case, save life rather than accept premature dying, terminate reversible suffering rather than tolerate severe symptoms, and help to rebuild patient autonomy, i.e., capacity to engage in advance care planning, instead of watching a patient's deterioration of personality. The recovery of patient autonomy is, in fact, one of our preferred outcomes.

Evaluation of EC—Outcome Criteria

In general, requestor feedback on EC, where available, is more than appreciative. Specifically, the outcome that the consensus built in EC was new compared with the situation prior to the EC meeting, which was a crucial one: It corroborates the idea that EC is not about holding an understanding conversation, albeit being of an educational or psycho-hygienic value; it does not function like psychological supervision either (31). Rather, it offers specific components and concrete steps to methodically analyze and solve ethical problems in a clinical context (20, 22, 23). Two more outcome criteria are important in the evaluation: the implementation of EC results and the helpfulness (of both interactive sessions and written records) as experienced by the requestors. Both criteria are rated very high, but serve to only roughly estimate the value of the respective EC. Further elaboration of the concepts is, in our view, reserved to in-depth qualitative single case studies. Also, the return rate in this sample was with 54.2% rather moderate; we have, however, succeeded since in obtaining more regularly and frequently, feedback from requestors by using active reminders.

Limitations of the Study

No empirically validated judgment is provided about the quantitative proportion of cases including coercive measures in the two clinical settings in general and the respective EC cases. This kind of analysis has to await more comprehensive national epidemiological data on coercion at large. However, as the kind of study reported here is rather innovative in using a comprehensive database on EC cases, the results are certainly relevant to encouraging further investigations on EC in relation to coercion.

CONCLUSIONS

Coercive measures and their ethical legitimation are a matter not only in psychiatric EC but also in the acute somatic context.

Patient decisional capacity is more often compromised in ECs addressing coercive measures than in ECs in total; this relation requires further study. It is suggested making more efforts toward early and professional assessment of patient capacity.

Likewise, missed opportunities to forewarn and prepare patients timely, in combination with counseling them on an advance directive, should be investigated more extensively to pave the way toward improvements.

It is put to discussion whether EC should be recommended for standard use whenever coercion is an issue in patient care—ideally before it may be applied, or, otherwise in retrospect for quality development.

In order to allow for comparative EC research on a systematic basis, shared standardized categorization of EC content, e.g. regarding coercion, is indispensable.

ETHICS STATEMENT

Considering the approach of our case series, the Ethical Committee for North-western and Central Switzerland (EKNZ) granted an exemption from requiring ethics approval and consent to participate. Waiver was issued on 26.03.2019 by Nieke Jones, head of the scientific secretariat EKNZ.

AUTHOR CONTRIBUTIONS

EM and SR-T designed the study and drafted the manuscript. EM and JS carried out the case analyses. JS, CW, and SR-T contributed to the analysis and interpretation of data and worked on the text and references. SR-T supervised the study and revised the manuscript. MP read and approved of the manuscript. EM, JS, CW, and SR-T read, edited, and approved of the final manuscript; they also took care of the revision.

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Consumer Perspectives of Safewards Impact in Acute Inpatient Mental Health Wards in Victoria, Australia

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Background: Inpatient mental health wards are reported by many consumers to be custodial, unsafe, and lacking in therapeutic relationships. These consumer experiences are concerning, given international policy directives requiring recovery-oriented practice. Safewards is both a model and a suite of interventions designed to improve safety for consumers and staff. Positive results in reducing seclusion have been reported. However, the voice of consumers has been absent from the literature regarding Safewards in practice.

Aim: To describe the impact of Safewards on consumer experiences of inpatient mental health services.

Method: A postintervention survey was conducted with 72 consumers in 10 inpatient mental health wards 9–12 months after Safewards was implemented.

Results: Quantitative data showed that participants felt more positive about their experience of an inpatient unit, safer, and more connected with nursing staff. Participants reported that the impact of verbal and physical aggression had reduced because of Safewards. Qualitatively, participants reported increased respect, hope, sense of community, and safety and reduced feelings of isolation. Some participants raised concerns about the language and intention of some interventions being condescending.

Discussion: Consumers' responses to Safewards were positive, highlighting numerous improvements of importance to consumers since its implementation across a range of ward types. The findings suggest that Safewards offers a pathway to reducing restrictive interventions and enables a move toward recovery-oriented practice.

Keywords: inpatient, Safewards, seclusion, wards, restrictive interventions, consumer perspective, service users

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INTRODUCTION

In the contemporary Australian mental health service system, acute inpatient wards are challenging settings where a high proportion of consumers are involuntarily admitted, for example, in the years 2016–2017, 57% of Victorian inpatient admissions were involuntary (1). In this paper, we use the term "consumer" to describe people who experience mental distress and use public mental health services because this is the most commonly used term in Australia. Consumers of inpatient wards are vulnerable and in need of skilled and empathic care. Unfortunately, internationally, consumers report a myriad of harmful experiences during their inpatient care (2), many associated with restrictive practices. Such harms may be a contributing factor to suicides both during and after admission (3, 4). A long-standing imperative within service systems is to improve the consumer experience in inpatient wards, including decreasing harms (5, 6).

Previous research that has involved consumers providing feedback about their experience of inpatient services has identified a multitude of challenges to providing services that meet consumers' expectations for care and treatment. Consumers report that inpatient wards are custodial (7) and sterile (8), with stringent and arbitrary rules (9) and lacking fairness and respect for consumers (2). Consumers report feeling bored, in need of distraction (8), and unsafe (10, 11) and that staff do not have time for therapeutic engagement (8, 10).

With such challenges comes tension between staff and consumers and sometimes between consumers and other consumers (12, 13). These tensions can lead to conflict, such as aggression, substance use, or absconding (14), which can then result in the use of restrictive practices, sometimes described as containment (14). Containment practices, such as seclusion and restraint, and the use of force have negative consequences for consumers who experience them and for those who witness them (7, 9, 10). Criticisms of restrictive practices have been further highlighted in the UN Convention on the Rights of Persons with Disability (15).

Safewards is a model and set of 10 interventions designed to improve safety for both consumers and staff in inpatient wards by reducing conflict and containment (16), attracting wide interest as an intervention that can reduce the use of restrictive practices.

According to the Safewards model, multiple factors influence conflict and containment events in acute mental health inpatient settings. The model suggests a linear relationship such that originating domains precipitate a flashpoint that can then set in motion an incident of conflict possibly resulting in containment. The relationship between conflict and containment is reciprocal in that the use of containment can lead to further conflict (16) (see **Figure 1** for the model and **Box 1** for definitions of the model components). The model also suggests that the influence of staff modifiers is present at every level. Patient modifiers can influence processes either before or after a flashpoint, and patient modifiers are also influenced by staff modifiers (16).

More than 30 interventions were developed by the research team in the original design; consultation with expert nurses, consumers, and carer representatives from SUGAR (Service User and Carer Group Advising on Research) narrowed the pool of interventions to 16, which were then piloted in 2012. Subsequently, 10 interventions were included in a randomized controlled trial (RCT). The 10 interventions can be categorized into two groups (described in **Table 1**). The first group (noted with a 1 in brackets) included interventions that actively involve consumers in collaboration with staff in the ward. The second group of interventions (noted with a 2 in brackets) requires active change of clinicians' practice to implement new ways of working.

Positive outcomes of Safewards in relation to reducing restrictive practices were reported for the original RCT in the United Kingdom, which showed a significant decrease in conflict events (15%) and containment events (24%) (18). Subsequent evaluation of Safewards in Australia and internationally has reported mixed success. Maguire and colleagues (19) reported high implementation fidelity and fewer conflict events alongside improved ward atmosphere in a forensic mental health ward in Australia. Their study gathered consumer and staff perspectives regarding Safewards during fidelity checks, highlighting positive practice change, enhanced safety and more respectful relationships. A study in Southern Denmark found reductions in coercive measures and forced sedation after the implementation

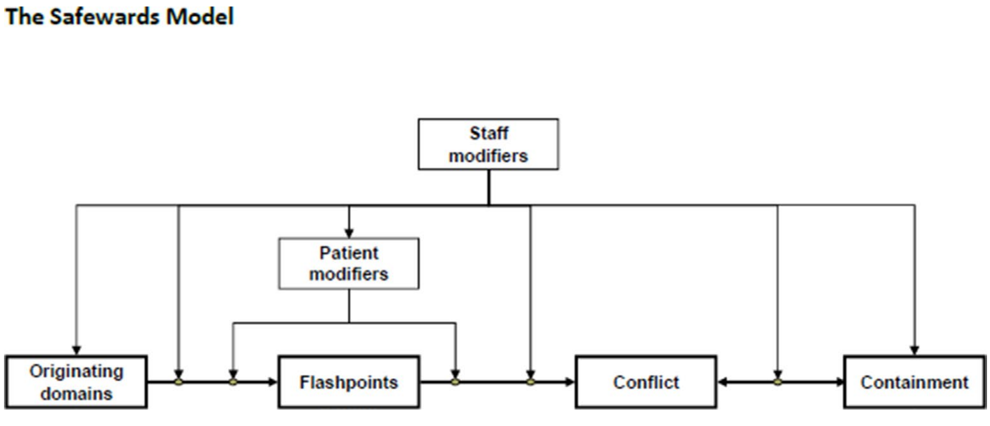

FIGURE 1 | Simple form Safewards Model (16, p. 500).

BOX 1 | Defining the components of the Safewards model (16).

Originating domains: six categories describing aspects of psychiatric wards: *patient community, patient characteristics, regulatory framework, staff team, physical environment,* and *outside hospital*. The frequencies of conflict and containment are influenced by the degree to which each of these originating domains is present or absent.

Staff modifiers: relates to staff as individuals or the team and the capacity they have to influence conflict and containment, by how they act to manage patients and the ward environment, initiating or responding to interactions with patients.

Patient modifiers: the way patients respond and behave toward each other that can influence the frequency of conflict and containment. Staff can also influence these.

Flashpoints: influenced by the originating domains, these are social and psychological situations, signaling and preceding imminent conflict behaviors.

Conflict: patient behaviors that threaten safety or the safety of others (e.g., violence, suicide, self-harm, absconding).

Containment: things staff do to prevent conflict from occurring or minimize harmful outcomes (e.g., prn medication, special observation, seclusion, restraint).

TABLE 1 | Safewards Interventions.

Intervention	Description	Purpose
Mutual Help Meeting (1)	Patients offer and receive mutual help and support through a daily, shared meeting.	Strengthens patient community, opportunity to give and receive help
Know Each Other (1)	Patients and staff share some personal interests and ideas with each other, displayed in unit common areas.	Builds rapport, connection, and sense of common humanity
Clear Mutual Expectations (1)	Patients and staff work together to create mutually agreed aspirations that apply to both groups equally.	Counters some power imbalances, creates a stronger sense of shared community
Calm Down Methods (1)	Staff support patients to draw on their strengths and use/learn coping skills before the use of PRN medication or containment.	Strengthen patient confidence and skills to cope with distress
Discharge Messages (1)	Before discharge, patients leave messages of hope for other patients on a display in the unit.	Strengthens patient community, generates hope
Soft Words (2)	Staff take great care with their tone and use of collaborative language. Staff reduce the limits faced by patients, create flexible options, and use respect if limit setting is unavoidable.	Reduces a common flashpoint Builds respect, choice, and dignity
Talk Down (2)	De-escalation process focuses on clarifying issues and finding solutions together. Staff maintain self-control, respect, and empathy.	Increases respect, collaboration and mutually positive outcomes
Positive Words (2)	Staff say something positive in handover about each patient. Staff use psychological explanations to describe challenging actions.	Increases positive appreciation and helpful information for colleagues to work with patients
Bad News Mitigation (2)	Staff understand, proactively plan for, and mitigate the effects of bad news received by patients.	Reduces impact of common flashpoints, offers extra support
Reassurance (2)	Staff touch base with every patient after every conflict on the unit and debrief as required.	Reduces a common flashpoint, increases patients' sense of safety and security

Adapted from the DHHS Safewards flier overview and original material developed by Professor Len Bowers, UK (17).

of Safewards, although they were unable to report the fidelity to the Safewards model (20). Several studies have reported low fidelity to the Safewards interventions and challenges in implementing Safewards (21, 22). Researchers have offered a number of possible explanations for this, including lack of management buy-in, lack of training (21), competing priorities in the organization and poor staff attitudes (22). To date, no published research reports the experiences of consumers in acute inpatient mental health wards when Safewards has been successfully implemented.

In light of state and national policies (23, 24) to reduce the use of restrictive interventions and deliver recovery-oriented care in Victorian inpatient mental health settings, the Victorian Government funded implementation of Safewards. Seven self-selected health services implemented Safewards across 18 wards in urban and regional Victoria. Our team was commissioned to conduct an independent evaluation of Safewards in Victoria. The project included evaluating training outcomes, impact of Safewards from consumer and staff perspective, and short-term and long-term outcomes related to implementation fidelity and seclusion rates. Findings have shown that local health service training for ward staff was successful in enhancing the knowledge, confidence, and motivation of staff to implement Safewards (25), and that seclusion rates were significantly reduced by 36% at 12-month follow-up in adult and youth wards implementing Safewards (26).

The development of Safewards has been reliant on nursing literature to date, benefiting very little from the important perspective of consumers. Consumer views were gathered as part of the Victorian evaluation. The aim of this study was to describe the impact of Safewards on consumers' experiences of inpatient mental health services.

METHODS

Design

A cross-sectional postintervention survey design was used to study consumer perspectives. Consumers were surveyed between January and March 2016, 9–12 months after Safewards was first implemented, at which time on average 9 of the 10 interventions were implemented. Therefore, regardless of the consumer's length of stay, they were all exposed to Safewards for most if not all of their admission.

Setting

This study is based on inpatient mental health wards in both metropolitan and regional Victoria. The average length of stay in acute wards in Victoria is 9.5 days (1). Our study reports data from four of the seven health services that opted to implement Safewards. Four health services agreed to consumers being approached to participate, providing either a consumer consultant or a nurse educator to facilitate the completion of surveys. The inpatient services were adult, adolescent/youth, and aged acute wards and secure extended care units.

Participants

Current consumers in 10 wards from four health services were invited to take part in the consumer survey. Consumers were approached by either a consumer consultant or nurse educator (who did not have direct consumer contact in the ward). If the consumer was interested to hear more about the study, s/he was given a participant information and consent form.

Measures

The purpose-designed survey included demographic characteristics and both quantitative and qualitative questions regarding the acceptability, applicability, and impact of the Safewards model and 10 interventions. Five quantitative questions covered: 1) recall of the model and each intervention, possible responses were "yes," "no," "unsure"; 2) how worthwhile participants thought Safewards was for them using a 5-point Likert scale: 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent; 3) how frequently they saw or were involved in the interventions; 4) the impact of Safewards on the atmosphere of the ward; 5) the impact of Safewards on four conflict events, that is, property damage, absconding, physical conflict, and verbal conflict. These conflict events were agreed upon by the researchers and the Government team piloting Safewards as the most relevant in the Victorian context at the time.

A 5-point Likert scale was used to answer the final three questions, whereby 1 = never, 2 = rarely, 3 = sometimes, 4 = usually, 5 = always. Participants who reported the Safewards model or any of the interventions as either "excellent" or "poor" were asked to provide extra information in response to open-ended questions. One text box was available for each response option. The decision to prompt for qualitative responses associated with the two outermost ratings was first pragmatic because we were conscious not to overburden participants. Second, we were keen to elicit the richest consumer views. So, we targeted qualitative follow-on questions to those who had a clear positive or negative view of the issue with prompts, such as if you rated the Safewards model or any of the interventions a "poor" can you briefly describe why the model/interventions were not suitable for your unit?

We next chose to prioritize detailed qualitative feedback regarding the 5 (of the 10) Safewards interventions that are specifically designed to involve consumers.

Further qualitative questions were posed about each of the five interventions, which directly involve consumers, the questions were 1) What do you think of the Clear Mutual Expectations on your unit and were you involved in their development?; 2) What were the Mutual Help Meetings like from your perspective?; 3) What did you think of the Calm Down Box, what was your favorite thing in the box?; 4) Did you feel that the discharge messages were helpful for you and did/will you write your own?

Procedures

The plain language statement and consent form and the administering consumer consultant or a nurse educator made clear that participation was voluntary and that participants could withdraw at any time. The survey was hosted on SurveyMonkey; participants chose to complete the survey themselves or have the support of a consumer consultant/nurse educator. Ethics approval was obtained *via* the Victorian Human Research Ethics Multi-site process (ID 15225L) for each of the involved services.

Data Analysis

Quantitative data were analyzed descriptively using SPSS version 22. Weighted averages for the Likert scales were calculated using the number of people who selected a given response and the weighting of that response. Qualitative data were analyzed using a thematic approach guided by the six-step approach outlined by Braun and Clarke (27). We elected to use an inductive process to uncover emerging themes (28). The steps we took were 1) to become familiar with the data, whereby the qualitative comments were read and counted to gain an understanding of the spread of feedback from participants; 2) initial codes were generated about the data, particularly assessing the spread of positive, negative, and neutral comments to provide a sense of the overall perspective of participants about Safewards; 3) comments of three or more words (i.e., those with some meaning to be elucidated) were categorized according to emerging themes; 4) we reviewed and where necessary reorganized the data according to the themes; 5) we discussed the names and definitions of each theme to ensure that they captured the essence of the data. Last 6), the analysis was written up and examined to ensure accurate representation of the data according to the themes. To strengthen the rigor of this analysis, two researchers, JF and BH, conducted steps 1 and 2 of analysis independently before discussing and refining the initial codes and undertaking the remaining steps.

RESULTS

Although 72 participants started the survey, not all completed every item, so valid participant numbers are presented throughout the results. **Table 2** shows the service type, participants' demographic characteristics, and length of current admission. Most participants were in adult services, mainly English-speaking, half were female, and on average 40 years of age. For most participants, their current admission had been from 1 to 4 weeks in duration at the time of participation.

Use of Safewards: Participants Recall and Perception of Acceptability

Table 3 demonstrates that participants recalled the interventions to varying degrees. The interventions directly involving consumers were more frequently remembered. **Table 3** also displays the weighted average of responses on the Likert scales and of how worthwhile participants believed each intervention to be, highlighting that participants rated all interventions good to very good with slight variation. More variability was evident in the frequency with which each intervention was used on the ward.

Impact of Safewards: Quantitative Data

Figure 2 displays participants' impression of whether four conflict events had reduced in frequency since the introduction

TABLE 2 | Participant demographics.

	Frequency	%
Gender		
Male	29	48
Female	31	52
Other	0	0
Language		
English	54	92
Other	5	8
Aboriginal Torres Strait Islander Status		
No	58	81
Aboriginal	2	3
Torres Strait Islander	0	0
Both	0	0
Missing	12	17
Age, mean and range	40 years	18–78
Service type		
Adult acute	46	64
Adolescent/youth acute	4	6
Aged acute	2	3
Secure extended care	8	11
missing	12	17
Length of current admission		
Less than one week	8	11
1–2 weeks	20	28
2–4 weeks	15	21
1–3 months	11	15
More than 3 months	6	8
Missing	10	14

of Safewards. Participants were most unsure about absconding and property damage; a small number of participants believed that Safewards never helped or usually helped. Participants were clearer about the impact of Safewards on physical and verbal conflict, with about 25% of participants reporting that Safewards usually or always helped to resolve physical and verbal conflict.

Figure 3 displays five statements about consumer's experiences of being "on the ward" while Safewards was being implemented. A small number of participants, between 16 and 21, chose to answer these questions. Those who did reported they felt safer in the ward (95% sometimes or usually), more positive about being in the ward, and more connected with the staff (85% sometimes–always). Most participants believed that staff and participants were "on a more even standing" (70% sometimes–always).

Impact of Safewards: Qualitative Data

The following section provides the results of the thematic analysis of qualitative data shared by participants. First, in 30 instances, participants took up the opportunity to provide open-ended responses regarding why they thought the model or intervention was unsuitable/suitable for their ward, when they had rated either the Safewards model or any of the 10 interventions *poor* (12 participants) or *excellent* (18 participants). Second, participants responded 198 times to open-ended questions about each of the five interventions that directly involve consumers, Mutual Help Meeting (48 comments), Know Each Other (37), Clear Mutual Expectations (36), Calm Down Methods (32), and Discharge Messages (45). **Table 4** displays the overall number of participants who provided their views about each of the interventions and the nature of their comment, positive, negative, or neutral. The following presents a synthesis of qualitative data arranged by six themes that emerged from the data: *Respect, Hope, Sense of community, Safety and sense of calm, Patronizing language and intention,* and *Implementation in practice.*

Recognition and Respect

The theme of recognition and respect arose from Clear Mutual Expectations and the Mutual Help Meetings, where participants highlighted more fair expectations that showed recognition of personhood and led to increased respect from staff. The use of Clear Mutual Expectations has reportedly resulted in fair expectation and positive changes related to less bullying from staff and comfort in knowing what is expected of consumers and staff "Good to know what's expected of you, and also staff." Increased recognition was also felt by participants taking part in Mutual Help Meetings, by enabling consumer voice to be prioritized, as illustrated by the following: "Meetings provide valuable information and provide clients a voice in the running of the facility and ownership." Involvement in the development

TABLE 3 | Participant feedback about each intervention.

Intervention	Recall the use of interventions, *n* = 70			Acceptability and applicability		Frequency of use in the unit	
	Yes (%)	No (%)	Unsure (%)	n	Weighted average	n	Weighted average
Clear Mutual Expectations	33	45	22	40	3.33	39	2.67
Soft Words	46	30	23	39	3.38	40	2.83
Talk Down	29	49	22	36	3.08	33	2.58
Positive Words	48	35	17	42	3.43	43	3.09
Bad News Mitigation	22	46	32	30	3.43	29	2.48
Know Each Other	67	20	13	55	3.4	51	3.25
Mutual Help Meeting	81	10	9	61	3.52	56	3.63
Calm Down Methods	62	19	19	45	3.4	43	3.21
Reassurance	54	25	22	43	3.51	40	3.13
Discharge Messages	68	22	10	55	3.24	49	3.02

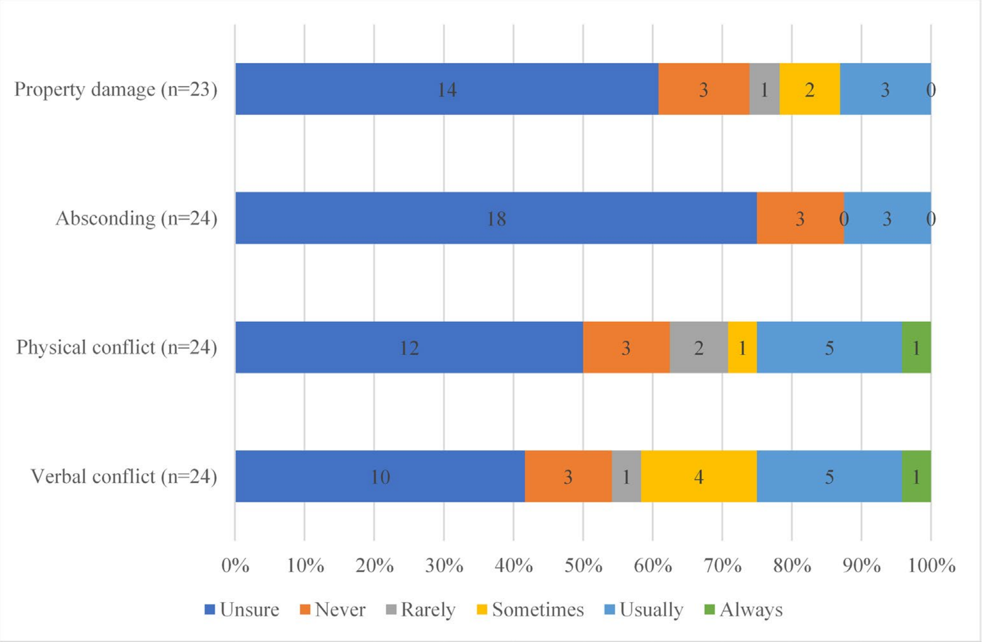

FIGURE 2 | Participants report of the impact of Safewards on conflict events.

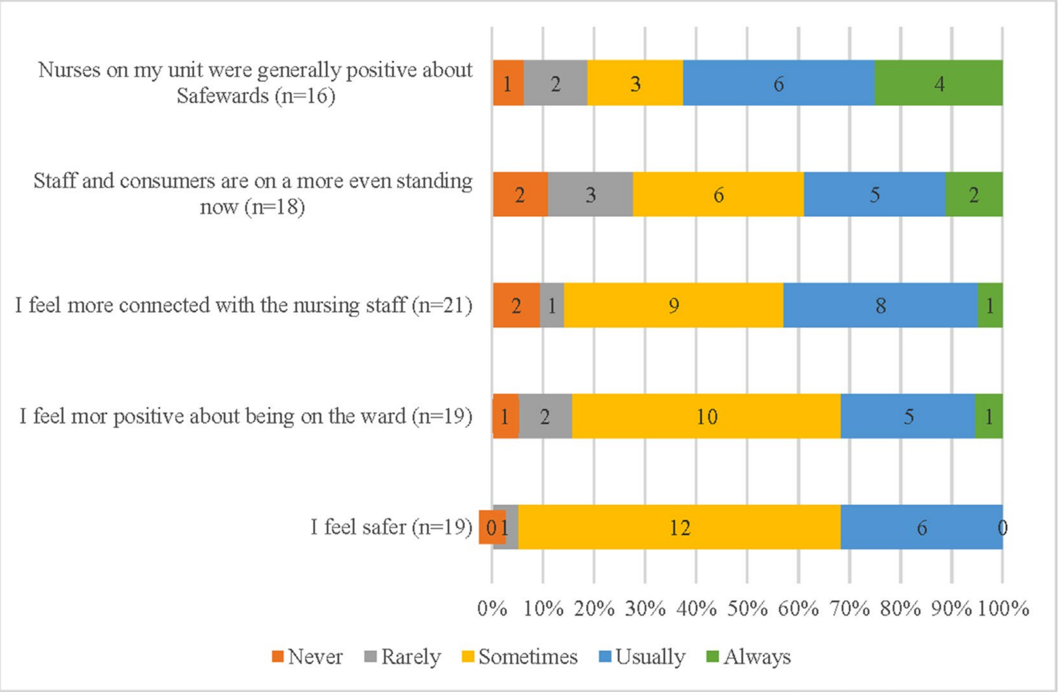

FIGURE 3 | Participants report of the impact of Safewards on the feel of the ward.

of Clear Mutual Expectations was reported by two participants. The concept of mutual respect was highly valued as the following quote illustrates. "Treat people as you would like to be treated, yes I was involved [in the development] and asked for respect."

Hope

Hope was a theme that arose from Discharge Messages, and quotes from two participants illustrate this: "If inpatient you're in a dark place, these bring you back to reality, safe and hope" and "Give people motivation to get better." Participants saw the

TABLE 4 | Number of participants who provided comments and the general nature of their comments.

	Total number of comments	Positive comments, e.g., Very helpful	Negative comments, e.g., It's childish	Neutral comments, e.g., I didn't know about it
Mutual Help Meeting	48	37	6	5
Know Each Other	37	27	6	4
Clear Mutual Expectations	36	24	4	8
Calm Down Methods	32	13	1	18
Discharge Messages	45	30	1	14

messages as "positive" and "helpful"; many reported that they would contribute a message as they were discharged, while others were reluctant to contribute because of being unsure of what to say.

Sense of Community

Sense of community refers to experiences of improvements in relationships between consumers and other consumers as well as between consumers and staff. A sense of belonging arose from participants being involved in Know Each Other, and responding to the specific agenda items in the Mutual Help Meetings all helped to reduce feelings of social isolation:

> "[Mutual Help Meeting] Helpful introduces you to people. Helps improve your stay. Gives your OT a better understanding of how to improve things on the ward. [The round of] Thanks, the people who have done positive things for you."

The Mutual Help Meetings were received positively by participants who reported that they were "very productive," "great idea," and "helpful." Some participants highlighted increased consumer participation and consumer voice in the day-to-day running of the ward, resulting in an increased *sense of community*, "Very good. Make you feel part of a team. Feel positive."

Know Each Other was viewed positively by many, for example: "I've always wanted this." Comments provided by participants detail reasons why this intervention was viewed favorably, particularly for increasing the *sense of community* in the ward. "Knowing others helped me communicating with others" and "Beneficial to have that rapport, makes me feel included." Other participants noted the impact this intervention had upon their view of staff as part of the ward community and that they appreciated knowing a little about the doctors and nurses." "This is a way of showing that staff are human."

Safety and Sense of Calm

This theme encompasses a change in the general feel of the ward as being a safer and calmer place as well as underscoring individuals' experiences of feeling calmer through the use of Calm Down Methods. Participants reported on the impact of Safewards as a whole impacting on overall sense of safety and calm personally and among people in the ward, for example: "Keeps everyone calm," "Useful and helps keep me safe and other patients calm as well," and "Feel more safer & stronger, it has been very educational."

Participants engaged with the items from Calm Down Methods as illustrated by the following: "hand cream, spray, shower gel, I have my own box." Furthermore, participants appreciated the opportunity for self-soothing, with a variety of options to choose from "I really like the dencorub smell it helps me" and "Yeah good, like the weighted blanket, like the light globe."

Clear Mutual Expectations was also found to facilitate a safer environment as noted by one participant "It's good, no more bullying."

Patronizing Language and Intention

The theme *patronizing language and intention* draws attention to the notion that some participants felt that not all of the interventions are suitable and respectful of consumers. This theme was evident across three of the five interventions. It encompasses a clear strand of negative consumer experience of Safewards.

Six participants commented that they did not find the Mutual Help Meetings useful either because they didn't see a positive outcome from the meetings or because they found the concept to be condescending "Don't like 'school behaviours' being incorporated, should be more adult."

Two participants did not hold a positive view of the Calm Down Methods intervention because of their perception that the language and intention were childish "Inappropriate use of words, e.g., calm down" and "Calm down box—it's for children. I don't think it's respectful to treat people as a child." One person shared a view of disapproval about the intention of Discharge Messages overall "Discharge Messages are cliché, [I] won't contribute."

Implementation in Practice

The theme *implementation in practice* reveals that participants observed that implementation and appropriate use of interventions are dependent on staff being willing and involved. One participant shared the insight about Safewards in general that "These [the interventions] were not used by the nurses, medication was offered rather than talking."

Doubts were also raised by several participants about staff ability to carry out the Clear Mutual Expectations and the variability between different staff, for example, those who are night or part-time staff "Full-time staff are usually better at it than casual/part-time staff, in my experience." One consumer highlighted lack of staff participation in Know Each Other. "Not all staff participated." Overall, responses indicate that participants see the value in skilled staff incorporating Clear Mutual Expectations into their practice and building rapport through Know Each Other but note that practice can be inconsistent.

One participant raised concerns about Know Each Other and need for privacy in the ward "Meetings are good because they're anonymous, not good to have private life being portrayed. A verbal group where this is talked about would be fantastic."

Many detailed responses regarding Mutual Help Meetings provide evidence that the intervention was being implemented as intended, for example: “Suggestions and requests to make improvements and a time for thanks,” highlighting some of the key agenda items presented in the intervention information.

In the main, the consumer survey responses showed a high level of awareness of the Safewards implementation and nuanced perspectives on its practices and impact. Overall, the qualitative data suggest that many of the participants were providing feedback based on current and previous experience in inpatient settings, for example, reporting less bullying. The majority of participants reported positive views and experiences of most of the interventions, expressing positive changes in relationships between consumers and staff as well as with other consumers. Participants were also positive about having input into the ward environment and being clearer about what is expected of everyone. A smaller number of participants were critical of certain aspects of Safewards, such as Calm Down Methods, or were critical that staff had not implemented some of the interventions adequately.

DISCUSSION

The aim of this paper was to describe the impact of Safewards on consumers’ experiences of being in an inpatient mental health ward. Sixty to eighty percent of participants recalled the consumer-focused interventions, except for Clear Mutual Expectations. Additionally, some of the practice-based interventions were recalled well, such as Reassurance, Soft Words, and Positive Words. Furthermore, participants were generally positive about the interventions and thought they were being implemented to varying degrees across the 10 wards. This high level of awareness among inpatient consumers of an inpatient model of care is (arguably) not typical (29).

Consumers offered considerable feedback on the experience and overall impact of Safewards. The quantitative findings highlight that some participants were more positive about being in the ward, feeling safer, and more connected with nursing staff as a result of Safewards. In terms of conflict events, participants highlighted a modestly positive view that Safewards interventions were serving to reduce the impact of physical and verbal aggression in the wards.

The qualitative findings of this study provide important context and depth to the quantitative findings. The following sections discuss each of the themes in turn integrating the quantitative and qualitative findings. We have used these areas to highlight, where appropriate, the alignment of these findings with recovery-oriented concepts, which are predominant in the literature reporting inpatient consumers’ expectations and experiences of services.

Respect

Respect from staff for participants and between the consumers was important in the feedback provided and mirrors the findings of Maguire et al. (19), who reported that both consumers and staff felt increased respect between the two groups (30). Participants in our study reported that Clear Mutual Expectations and the Mutual Help Meetings played a part in increasing the feeling of respect from staff for participants. This finding was further supported in the quantitative data, where some participants reported that staff and consumers were on a more even standing since Safewards implementation. Previous research has highlighted that consumers value being respected by staff, and it has a direct influence on the care they receive (31). More specifically, when feeling better (i.e., reduced symptoms), consumers report valuing increased influence over their care (32). Previous research suggests that consumers feel more respected when they are listened to about their own preferences during care (33). Participants in this study discussed being listened to in the Mutual Help Meeting, in the development of Clear Mutual Expectations, and in the choices they could exercise when using Calm Down Methods.

Hope

Hope is a core concept in the definition of recovery-oriented practice. In a synthesis of studies on consumer experiences of involuntary treatment, the concept of hope was found to be lacking in many experiences of care but essential to recovery (34). Consumer participants discussed the concept of hope when talking about Discharge Messages, stating that the messages were important in giving them hope, helping them to focus on staying positive. Furthermore, participants reported feeling more hopeful about being in the ward and feeling an increased sense of community because of the Mutual Help Meetings. Often, this was because of meetings increasing participants’ sense of inclusion and agency, also core components of recovery (35).

Sense of Community

The Mutual Help Meetings contributed to participants feeling more connected with fellow participants; there was appreciation for gaining and providing support to one another and thus feeling safer around one another. Furthermore, a positive sense of community was reported because of Mutual Help Meetings and Know Each Other, which can be related to social inclusion, connection to community, and experiences of citizenship. Hyde and colleagues (35) found that consumers valued such reciprocal support and it reduced feelings of isolation in the ward. Once consumers establish relationships with peers in the ward, they are grateful that, in some instances for the first time and in the midst of experiences of their distress, they feel understood. This finding accords with studies of consumer appreciation of emerging peer support roles in inpatient care (35).

Safety and Sense of Calm

The literature on safety in acute wards is vast; however, of particular relevance to this study is the literature showing that feelings of safety are enhanced when consumers feel valued, understood, and respected by staff (36, 37). Participants overall reported feeling safer, and participants who rated the model and interventions as excellent reported one of the key changes was that the ward felt calmer, which led to them feeling safer. This finding concurs with reports of consumers from a forensic mental health ward who stated that the ward was calmer and they felt safer after the implementation of Safewards (19).

There are several mechanisms by which the increased sense of safety may have occurred. In times of high acuity, consumers have reported that having predictable services contributed to a feeling of safety (32); in this light, Clear Mutual Expectations was viewed by participants in this study as beneficial. Furthermore, in their critique of Safewards from the perspective of consumers, Kennedy et al. (38) report that Know Each Other could increase consumers' sense of safety through holding some everyday knowledge about staff.

Evaluation of the Safewards implementation in Victoria in these same wards revealed a reduction in the use of seclusion, which may have impacted on the sense of safety in the ward (26). This notion is supported by converse findings of previous research that consumers feel unsafe in wards where restrictive practices are used by staff to maintain control and gain compliance (33). Previous research has highlighted that key stakeholders—consumers, carers, and staff—consider that restrictive practices are incompatible with recovery-oriented practice (39). So interventions that reduce restriction can be expected to result in an increased sense of safety.

Patronizing Language and Intention

Concerns voiced by some participants suggest that some components of Safewards can be viewed as patronizing, with such comments about Calm Down Methods being more suited for children. Language is particularly powerful with potential to reinforce condescending views of mental illness (40). This challenge can be addressed in the first instance by changing language used for interventions, such as Calm Down Methods, and by providing consumers with the opportunity to choose the tools available for this intervention. There is considerable scope for consumer perspectives to be foregrounded using coproduction processes, when Safewards interventions are reworked and new interventions are developed (38). Furthermore, the astute consumer critique of staff language and intent makes clear the need to ensure that the implementation of Safewards and other interventions is not undermined by a superficial approach that misses the intent of an intervention or strays from the model and underpinning evidence (41, 42). In large organizations, it is possible that some staff miss the meaning of such a program or that an ethos is not sustained after the initial burst of training.

Also, there is scope, based on this evidence and other consumer expert contributions (38), to refine specific language in the interventions, including changes to "Calm down." Steps have been taken already in different local settings such as "Chill kit" in some adolescent units.

Implementation in Practice

A small number of participants highlighted their observation that staff did not implement all of the interventions, and low implementation fidelity has been reported in other studies (21, 22). Qualitative data regarding each of the five consumer-engaged interventions illustrated that participants had a clear understanding of the Safewards interventions and their intent, which suggests that they had experienced the interventions as they were intended. This finding supports previous reports that fidelity to the interventions was high (on average, wards were implementing 9 or 10 of the interventions) at the 9- to 12-month time point after the initial trial of Safewards finished (26). It is, therefore, also likely that the five interventions that are less visible to participants—Reassurance, Positive Words, Soft Words, Talk Down, and Bad News Mitigation—played a part in the reported general experience of the wards as calmer and safer. In addition, the appropriate implementation of Positive Words and Soft Words is likely to contribute to participants' perceptions of respect from staff members. The implementation of Reassurance, Talk Down, and Bad News Mitigation is likely to have impacted on the sense of calm in the ward and the resulting feeling of safety.

Limitations and Strengths

There are three key limitations in the present study. First, the data were not representative of all wards involved in the trial because not all services granted ethics approval for consumers in inpatient units to be recruited and surveyed. Second, completion of surveys was variable; most participants were more inclined to provide qualitative comments than to answer the quantitative questions about flashpoints and impact of Safewards on the environment. It is impossible to know why fewer participants chose to answer the quantitative questions. Nevertheless, the qualitative and quantitative survey findings align well. Third, the sample may have been skewed toward those who were at that moment well enough to complete surveys and/or those who had a more positive experience of Safewards. Nonetheless, the participants were knowledgeable about Safewards and able to give rich responses.

Notwithstanding the limitations, our paper has a number of strengths. First, our research gives priority to the consumer voice across adolescent, adult, and aged acute inpatient wards and secure extended care units. Hence, it is one of few papers to consider the views of consumers about Safewards, and it highlights that Safewards can be well received in mental health services beyond the adult acute wards for which it was designed. Second, a strength of the study was that most participants had been present in the ward for at least 1 week and even up to 3 months, with ample opportunity to be involved in Safewards and experience the difference it made. Third, the timing of the survey was a strength to this research because Safewards was well implemented, thus ensuring consumers had good exposure to the interventions as they were intended.

CONCLUSIONS

Most participants were positive about Safewards, highlighting important improvements in their experiences of inpatient care since implementation. The findings of the present study highlight that Safewards offers a pathway to improving the relationship between consumers and staff and enables a move toward recovery-oriented practice. Qualitative comments from consumer participants have begun to elucidate findings in previous research, particularly regarding how and why some of the Safewards interventions alleviate negative experiences of consumers. Furthermore, the key themes arising from the qualitative data highlight the alignment between the impact of Safewards interventions and recovery-oriented practice, which is highly valued by consumers.

Safewards is making a difference to consumer experiences on psychiatric inpatient wards. However, Safewards needs ongoing attention to remain relevant. The consumer voice was largely missing from the initial development of the interventions (although consumers were consulted in selecting which interventions to trial) and the strong reliance on published literature for the development of the model and interventions may mean that Safewards is backward looking. To keep Safewards relevant, we now need to engage with the current day and critical perspective from consumers, to codesign ongoing development and evolution of the interventions based on evaluation findings. To this end, we look to suggestions made by Kennedy et al. (38) to extend Safewards to include varied interventions from the original 30, to maintain the momentum of change.

In the current context, with increasing importance being placed on coproduction and consumer perspectives as central to improving service delivery, we must rely on new ways to engage with the critical consumer perspective. This is especially important regarding promising models such as Safewards that were developed using literature that existed before the imperative "nothing about us without us" (43), the rights-oriented call arising from the mental health consumer movement. The credibility of the next stage of Safewards development rests on greater consumer voice at the level of collaboration, consumer-preferred language, and intervention refinements.

ETHICS STATEMENT

This study was conducted in accordance with and after recommendations from Victorian Human Research Ethics Multi-site process (ID 15225L). Participants were provided a Plain Language Statement and Consent Form. Participants had the opportunity to ask questions before signing the consent form. Completion of online surveys was anonymous. The protocol was approved by the Monash Health Human Research Ethics Committee.

AUTHOR CONTRIBUTIONS

JF and BH were involved in the development of the study, data collection, and analysis. JF, SB-H, BH and LB were involved in the interpretation of data. JF, SB-H, BH, SK and LB were involved in the writing and editing of the manuscript.

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Safewards Impact in Inpatient Mental Health Units in Victoria, Australia: Staff Perspectives

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Introduction: Mental health professionals working in acute inpatient mental health wards are involved in a complex interplay between an espoused commitment by government and organizational policy to be recovery-oriented and a persistent culture of risk management and tolerance of restrictive practices. This tension is overlain on their own professional drive to deliver person-centered care and the challenging environment of inpatient wards. Safewards is designed to reduce conflict and containment through the implementation of 10 interventions that serve to improve the relationship between staff and consumers. The aim of the current study was to understand the impact of Safewards from the perspectives of the staff.

Methods: One hundred and three staff from 14 inpatient mental health wards completed a survey 12 months after the implementation of Safewards. Staff represented four service settings: adolescent, adult, and aged acute and secure extended care units.

Results: Quantitative results from the survey indicate that staff believed there to be a reduction in physical and verbal aggression since the introduction of Safewards. Staff were more positive about being part of the ward and felt safer and more connected with consumers. Qualitative data highlight four key themes regarding the model and interventions: *structured and relevant; conflict prevention and reducing restrictive practices; ward culture change; and promotes recovery principles.*

Discussion: This study found that from the perspective of staff, Safewards contributes to a reduction in conflict events and is an acceptable practice change intervention. Staff perspectives concur with those of consumers regarding an equalizing of staff consumer relationships and the promotion of more recovery-oriented care in acute inpatient mental health services.

Keywords: mental health service, safewards, inpatient psychiatry, restrictive practices, recovery oriented care

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INTRODUCTION

In Australia and internationally, there has been a movement by consumers and carers, supported in national policy, toward the provision of recovery-oriented care (1, 2). The core of recovery orientation is that consumers, with or without symptoms of mental illness, are central in setting their own priorities for care and receive the necessary support to live a meaningful life of their choosing (3–5).

The current National Mental Health Policy emphasizes reducing use of restrictive practices in inpatient mental health services (6). Research has found that there is no evidence that seclusion is therapeutic (7). One qualitative study found diverse views among staff, some believing seclusion was part of treatment and others believing it was a punishment (8). Emerging evidence, particularly in the qualitative literature, highlights findings from consumers and staff that the use of restrictive practices, including seclusion, can be experienced as retraumatizing for consumers and for those who witness these practices (9–11). The use of restrictive practices can lead to consumers feeling unsafe and may interfere with ongoing personal recovery and engagement with services (11, 12).

Inpatient mental health services are complex environments for people experiencing the most acute symptoms of mental illness. People are often involuntarily admitted for short periods of time, and it has been asserted by some that the focus is on stabilization of a pharmaceutical regime. It has been suggested that staff in inpatient units tend to rely on medication as the primary treatment under a medical model of care (13–15). Organizational safety and risk management provide fundamental guidance to practice. Slemon et al. (16) have argued that the risk management culture that drives care in inpatient mental health settings results in a perpetuation of stigma that people with a mental illness are aggressive. Therefore, staff are responsible for maintaining the safety of everyone in the ward, legitimizing the use of restrictive practices to maintain control and safety (16, 17). Support for this approach is potentially located in findings that mental health professionals are at higher risk of being exposed to physical aggression than many other health care professionals (18). Mental health nurses are often fearful about being injured at work and may as a group feel that the use of restrictive practices (such as seclusion) is necessary (8). Staff also report cognitive dissonance (19) with feelings of guilt associated with forcing consumers to take medication and using restrictive practices but a sense of being trapped in these ways of working (8). Despite this tension, nurses are motivated to engage more therapeutically with patients, yet aspects of the institutional flow, such as short stays and excessive paperwork, discourage engagement. Even so, research has found that nurses who spend more time directly caring for patients experience greater job satisfaction (20).

It has been argued that the challenges inherent in caring for consumers in services that prioritize medication adherence and risk management have resulted in nurses lacking time and autonomy to engage in therapeutically meaningful interactions with consumers, causing frustration for both consumers and nurses (21, 22). The development of a therapeutic relationship is viewed by many as the single most important factor in a positive inpatient admission (12, 23, 24). Despite this, research in one Australian state using a work sampling methodology has found that only 32% of nurse time was spent in direct care (25). A slightly higher proportion of time (42.7%) in direct care was found by Whittington and McLaughlin (26) in an observational UK study; however, the specific measure regarding time spent in potentially therapeutic interactions was observed to be 6.75%. Goulter et al. (25) went on to conclude that the lack of time spent in direct care falls short of the expectations of consumers, and emerging evidence highlights that positive engagement is related to higher levels of consumer satisfaction (27). Furthermore, a review of literature related to the measurement of therapeutic relationships indicates that better quality therapeutic relationships may be achieved by nurses having increased time to spend with consumers, but that research regarding this is lacking (28). To improve this situation, Goulter et al. (25) suggest the need for "a comprehensive model of practice that draws on the best available evidence of what activities constitute best nursing practice in mental health settings" (p. 455). The Safewards model and interventions may provide one avenue of addressing the need expressed by Goulter et al. (25).

Safewards was developed after a series of comprehensive literature reviews and empirical research (29). Safewards offers a multifaceted approach to reducing conflict and the use of containing or restrictive practices by helping to shift the focus of staff back to direct care and building therapeutic relationships (30). Safewards is a theoretical model with 10 associated interventions designed to improve the safety of everyone in inpatient wards by reducing conflict (physical, verbal aggression, absconding) and containment (forced medication, seclusion, and restraint) events. For a full description of the model, see Bowers (30). Informed by extensive literature reviews and empirical research, the Safewards model proposes that six originating domains (the patient community, patient characteristics, regulatory framework, staff team, physical environment, and outside hospital) potentially contribute to flashpoints (e.g., a situation signaling and preceding a conflict event, such as physical aggression), which may then lead to conflict and containment (29). Staff have the potential to moderate each of these components of the model through their interactions with consumers. The interventions are described in **Table 1**.

In a pragmatic cluster randomized controlled trial of Safewards in the United Kingdom, Bowers et al. (32) observed a significant decrease in conflict and containment events in the Safewards condition compared with the control condition where a staff physical health improvement package was offered. However, variable success regarding implementation of Safewards has been reported in recent papers. Problems with implementation have included low adherence (fidelity) and lack of staff acceptance of the model (33, 34). This contrasts with high fidelity to the model in some settings, resulting in reduction in conflict events (35) and reduction in the use of forced sedation (36). Hence, high fidelity to the model is important to its outcomes. To date, the perceptions of staff from wards that have successfully implemented Safewards and therefore contributed to fidelity to the model have not been reported.

Based on the promising randomized controlled trial results from the United Kingdom, in 2014, the Victorian Department

TABLE 1 | Safewards Interventions.

Intervention	Description	Purpose
Mutual Help Meeting (1)	Patients offer and receive mutual help and support through a daily, shared meeting.	Strengthens patient community, opportunity to give and receive help
Know Each Other (1)	Patients and staff share some personal interests and ideas with each other, displayed in unit common areas.	Builds rapport, connection, and sense of common humanity
Clear Mutual Expectations (1)	Patients and staff work together to create mutually agreed aspirations that apply to both groups equally.	Counters some power imbalances, creates a stronger sense of shared community
Calm Down Methods (1)	Staff support patients to draw on their strengths and use/learn coping skills before the use of *pro re nata* medication or containment.	Strengthen patient confidence and skills to cope with distress
Discharge Messages (1)	Before discharge, patients leave messages of hope for other patients on a display in the unit.	Strengthens patient community, generates hope
Soft Words (2)	Staff take great care with their tone and use of collaborative language. Staff reduce the limits faced by patients, create flexible options, and use respect if limit setting is unavoidable.	Reduces a common flashpoint, builds respect, choice, and dignity
Talk Down (2)	De-escalation process focuses on clarifying issues and finding solutions together. Staff maintain self-control, respect, and empathy.	Increases respect, collaboration, and mutually positive outcomes
Positive Words (2)	Staff say something positive in handover about each patient. Staff use psychological explanations to describe challenging actions.	Increases positive appreciation and helpful information for colleagues to work with patients
Bad News Mitigation (2)	Staff understand, proactively plan for. and mitigate the effects of bad news received by patients.	Reduces impact of common flashpoints, offers extra support
Reassurance (2)	Staff touch base with every patient after every conflict on the unit and debrief as required.	Reduces a common flashpoint, increases patients' sense of safety and security

(1) Interventions directly involving consumers.
(2) Interventions requiring active practice change of clinicians
Adapted from the DHHS Safewards flier overview and original material developed by Professor Len Bowers, UK (31).

of Health in Australia funded seven self-selected health services to implement Safewards across 18 wards in urban and regional Victoria. Our team was commissioned to undertake an independent evaluation across the seven services. We used a pragmatic real-world evaluation design to evaluate training outcomes, impact of Safewards from consumer and staff perspectives, and short-term and long-term outcomes related to implementation fidelity and seclusion rates. The results from adult and youth acute wards suggest a significant reduction in seclusion rates, from 14.1 seclusions per 1,000 occupied bed days pre to 10.1 seclusions per 1,000 occupied bed days at 12 months' follow-up, representing a 36% reduction (37). At 12-month follow-up, on average, 9 of the 10 Safewards interventions were being implemented (37). Consumer feedback from Victoria highlights that consumers believed that there was a reduction in physical and verbal aggression after implementation of Safewards. Overall, consumers felt safer and reported increased connection with staff and each other, leading to an experience of care that was more in line with a recovery orientation (38). In this paper, we aim to report on staff perspectives that formed part of the overall evaluation findings and compare and contrast with previously reported findings regarding consumer perspectives (38).

METHOD

Design

A cross-sectional postintervention survey design was used to study staff perspectives. Staff were surveyed between December 2015 and April 2016, 9–12 months after Safewards was first implemented, at which time, on average, 9 of the 10 Safewards interventions were implemented.

Setting

This study is based on inpatient mental health wards in both metropolitan and regional Victoria, Australia. It reports data from six of the seven health services that opted to implement Safewards. The inpatient services were adult, adolescent/youth, and aged acute wards and secure extended care units.

Participants

Current staff on 14 wards from six of the seven health services that implemented Safewards were invited to take part in the staff survey. One service decided not to take part in the survey of staff.

Measures

The purpose-designed survey included demographic characteristics and both quantitative and qualitative questions regarding the acceptability, applicability, and impact of the Safewards model and 10 interventions. The survey was developed by the research team in reference to the overarching research questions with further input from the commissioning agency. All members of the research team were trained mental health clinicians who had experience working in inpatient settings alongside their research expertise. The face validity of the items was agreed to by all parties.

Five quantitative questions covered: 1) how suitable staff thought Safewards was using a Likert scale, where 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent; 2) how frequently interventions were used; 3) would they be sustained over the next 12 months using a Likert scale, where 1 = highly unlikely, 2 = not likely, 3 = possible, 4 = probable, 5 = highly probable; 4) the impact of Safewards on four conflict events (property damage, absconding, physical conflict, and verbal conflict) that were agreed upon by the researchers and the Government team piloting Safewards as the most relevant in the Victorian context at the time; and 5) the impact of Safewards on the atmosphere of the ward. Participants responded to these questions on a 5-point Likert scale. The Likert scale anchor points for questions two, four, and five were 1 = never, 2 = rarely, 3 = sometimes, 4 = usually, 5 = always.

Procedures

The plain language statement and consent form made clear that participation was voluntary, and that staff could withdraw at any time. The survey was hosted on SurveyMonkey; staff were sent a link from the local Safewards lead via e-mail. Ethics approval was obtained via the Victorian Human Research Ethics Multi-site process (ID 15225L) for each of the involved services.

Data Analysis

Quantitative data were analyzed descriptively using SPSS version 22. Weighted averages for the Likert scales were calculated using the number of people who selected a given response and the weighting of that response. Staff who rated the Safewards model or one of the interventions as "poor" or "excellent" were given the opportunity to provide a detailed comment. Qualitative data were analyzed by two of the researchers (JF and BH) using a thematic approach guided by the approach outlined by Braun and Clarke (39). We elected to use an inductive process to uncover emerging themes. The steps we took were 1) to become familiar with the data, qualitative comments were read and counted to gain an understanding of the spread of feedback from participants; 2) initial codes were generated about the data, particularly assessing the spread of positive, negative, and neutral comments to provide a sense of the overall perspective of participants about Safewards; 3) comments of 3 or more words (i.e., those with some meaning to be elucidated) were categorized according to emerging themes; 4) we reviewed and where necessary reorganized the data according to the themes; 5) we discussed the names and definitions of each theme to ensure that they captured the essence of the data; and 6) the analysis was written up and examined to ensure accurate representation of the data according to the themes.

RESULTS

One hundred three staff responded to the survey representing each of the 14 wards. The majority were English-speaking women with a mean age of 43 years (range, 21–61, SD 10.28). Each service type was represented, with secure extended care unit (SECU) being slightly overrepresented and adolescent/youth wards being slightly underrepresented. Fifty-five percent of staff were registered or enrolled nurses, and almost 20% reported being from another professional group, including occupational therapists, social workers, and medical staff (**Table 2**).

TABLE 2 | Participant characteristics.

	Frequency	%
Gender *n* = 76		
Male	22	28.9
Female	52	68.4
Other	2	2.6
Language *n* = 74		
English	70	94.6
Other	4	5.4
Service Type *n* = 76		
Adult	42	55.3
Adolescent/youth	4	5.3
Aged	13	17.1
SECU	17	22.4
Professional Role *n* = 72		
Clinical nurse educator	3	4.2
Nurse unit manager	5	6.9
Associate nurse unit manager	7	9.7
Clinical nurse specialist	3	4.2
Registered nurse	25	34.7
Enrolled nurse	14	19.4
Consumer consultant	1	1.4
Peer worker	0	0.0
Other	14	19.4

SECU, secure extended care unit.

Table 3 displays the weighted average response according to the suitability of Safewards, the frequency of use in the ward, and the likelihood of the intervention remaining in place over the next 12 months. On average, staff rated the suitability of the Safewards model and interventions as good to very good. Variation among staff may indicate differences in service settings; however, there was not enough data in each group to test this statistically. Staff reported that each of the Safewards interventions was used in their ward on average sometimes to usually. Staff held a positive view that it was probable to highly probable that Safewards would still be in place in their ward in 12 months' time.

Figure 1 displays four conflict events and the corresponding rating of staff regarding the impact of Safewards on these. Staff were conservative about the impact of Safewards on absconding and property damage, reporting that Safewards usually or always positively impacted (30% and 35%, respectively). A small group of staff reported that they were unsure or it never had an impact on absconding and property damage. In contrast, staff were clearer that Safewards impacted on physical and verbal conflict, with 45% and 55%, respectively, reporting that Safewards usually or always had a favorable impact.

Figure 2 displays five statements about staff's experiences of being "on the ward" while Safewards was being implemented. Most staff reported that the nurses were positive about the introduction of Safewards, with a minority reporting that some nurses in their ward were actively opposed to Safewards. Staff felt safer in the ward (50% usually or always) and more positive about being in the ward. Most staff believed that staff and consumers were "on a more even standing" (90% sometimes–always).

Qualitative Responses

The following provides a thematic analysis of the responses provided by staff. Staff rated interventions as "poor" between 1% and 5% of the time, and six staff provided 13 written comments about their responses. Two themes describe the "poor" rating, *incompatible* and *procedural concerns*. The first theme highlights a staff view that the intervention is *incompatible* with nursing roles and responsibilities. For example, a staff member has a sense that their responsibility is greater than the patient's, and therefore, the interventions are inappropriate.

TABLE 3 | Suitability, use, and sustainability of Safewards model and interventions.

Model/Intervention	**Suitability**		**Frequency of use in the unit**		**Sustainability over 12 months**	
	n	**Weighted average**	***n***	**Weighted average**	***n***	**Weighted average**
Safewards Model	90	3.9			77	4.2
Clear Mutual Expectations	90	3.5	75	3.8	76	4.2
Soft Words	90	3.6	77	4.2	77	4.3
Talk Down	90	4.0	77	4.2	77	4.4
Positive Words	90	3.8	77	4.2	77	4.3
Bad News Mitigation	90	3.5	76	3.6	77	4.2
Know Each Other	90	3.7	78	3.9	76	4.1
Mutual Help Meeting	90	3.5	76	3.8	77	4.3
Calm Down Methods	90	4.0	77	4.3	77	4.4
Reassurance	90	3.8	77	4.3	77	4.3
Discharge Messages	90	3.7	77	3.6	76	4.2

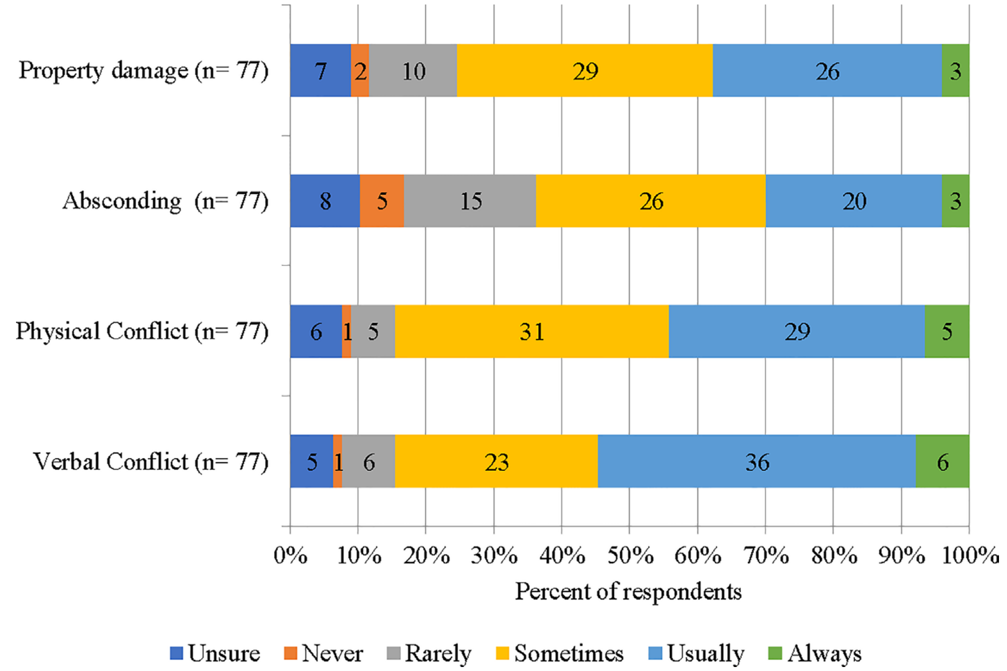

FIGURE 1 | Staff reports of the impact of Safewards on conflict events.

The second theme relates to *procedural concerns*, with some respondents reporting that the intervention was poor because there was no ownership taken for the intervention among the team. The critical comments from staff came from a small subset (n = 6) of participants, who were also likely to rate multiple interventions as "poor" or "fair."

Four key themes summarize the detailed responses of staff regarding their rating of the model or any of the interventions as "excellent." The themes are *structured and relevant, conflict prevention and reducing restrictive interventions, ward culture change, and promoting recovery principles*. Illustrative quotes are presented in **Table 4**. These four themes incorporate the views of 39 staff with 176 comments related to both the model and all 10 interventions.

In relation to the theme *structured and relevant*, staff put forward the idea that the model and interventions reminded them of their professional training and refreshed their thinking about providing more holistic care. Specifically, staff reported prioritizing the staff–consumer relationship with Safewards in ways that other ward system models may not. Staff affirmed that the model was clear and simple to follow.

The theme *conflict prevention and reducing restrictive practices* highlights staff's feedback regarding a renewed understanding of the relationship between conflict and containment, resulting in increased confidence to listen well and talk respectfully to consumers in a way that minimizes frustration and, by extension, interrupts the cycle of conflict and containment.

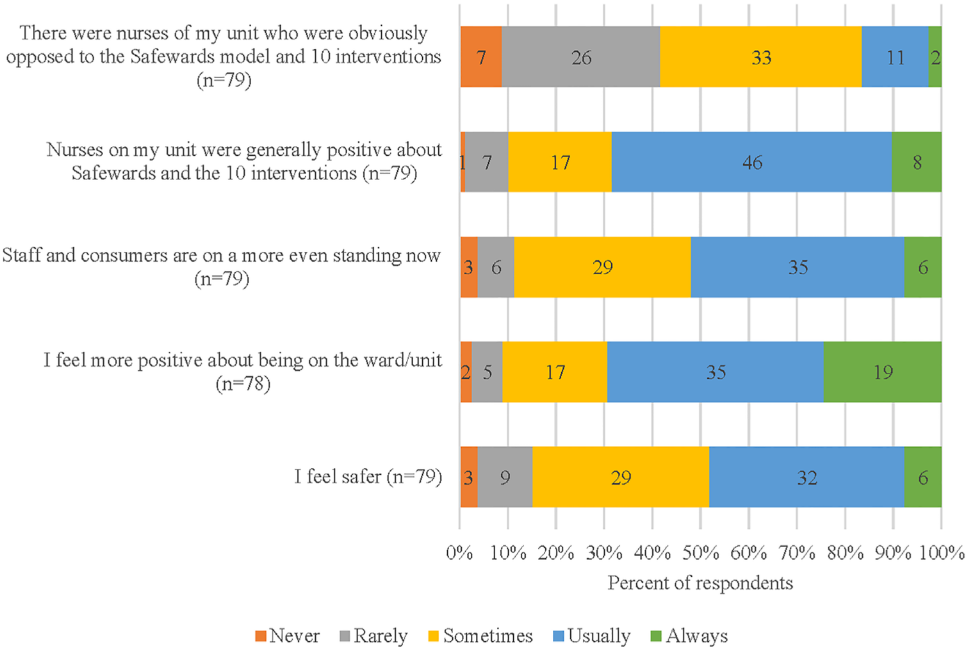

FIGURE 2 | Staff reports of the impact of Safewards on the feel of the ward.

The staff who highlighted a *positive ward culture change* described less social distance and enhanced mutual regard, arising from sharing responsibility and increased collaboration between staff and patients. A number of mechanisms related to specific interventions facilitated this culture change, for example, Know Each Other helped staff and consumers to find commonality with each other, Clear Mutual Expectations increased the sense of community in the ward, Positive Words led to attitude changes in staff, which in turn improved their interactions with consumers.

The theme *promotes recovery principles* captures the feedback from staff that a variety of interventions enhances consumer involvement in their care and treatment, hope and peer support, choice, dignity, and respect from staff toward consumers.

DISCUSSION

This paper reports on staff experiences and views of the suitability and impact of the Safewards theoretical model and its 10 interventions. Overall, staff reported that Safewards impacted on physical and verbal conflict and supported a positive change in the ward environment and relationships, helping staff to feel safer. The following sections discuss the current findings in relation to whether Safewards reduced conflict events or flashpoints. These findings can be contrasted with those obtained from consumers (38).

Reducing Restrictive Practices

Generally, staff indicated that Safewards had impacted on flashpoints in a positive way. Like consumers, the staff were most modest in their views about absconding and property damage. Staff were most confident in the impact of Safewards on verbal and physical conflict, although the staff group had a much stronger view of the impact of Safewards on physical and verbal conflict (45% and 55%, respectively, compared with 25% of consumers usually or always had an impact) (38).

The theme *conflict prevention and reducing restrictive practices* highlights the relational aspects of Safewards. The findings of this study indicate that, in challenging situations, staff feel more empowered and permitted to act with a renewed understanding of the impact of their responses on consumers. This may suggest a positive shift away from the use of restrictive practices to maintain compliance, thus giving consumers the potential to trust the staff more, consequently building relationships (12).

Shifting Culture and Improving Recovery-Oriented Practice

Staff reported that Safewards had a positive impact on their experience of being in the ward. Both staff and consumers described a more equal relationship as a result. These findings indicate some differences in perceived changes. Consumers were most positive about feeling safer in the wards (95% sometimes or usually); staff were slightly less so (85% sometimes to usually). In contrast, staff were more optimistic than consumers about the shift to a more equal staff–consumer relationship (90% compared to 70% sometimes to always) (38).

The qualitative findings highlighted themes unique to the staff perspective, such as *structured and relevant*. Staff were positive about Safewards legitimizing and operationalizing the centrality

TABLE 4 | Staff quotes related to themes and specific Safewards interventions or the model.

Theme	Model/Intervention	Quote
Structured and Relevant	Positive Words	"In an inpatient environment where there is a lot of negativity, utilizing positive words (especially during handover and in clinical interactions with other staff) created a more professional, supportive and 'positive' workplace."
	Model	"It feels like we desperately needed something to remind us why we got into this nursing, it brings it back to basics and it brings it back to the patient."
	Model	"Easy to implement and adopt to current practice, useful for positive patient outcomes."
	Model	"Easy to follow and helps to keep the ward running smoothly and calmly."
Conflict prevention and reducing restrictive practices	Model	"Model guides practice and helps us to understand the relationship between conflict and containment."
	Soft Words	"Sometimes it isn't what you say that is important rather what you don't say, staff don't need to have the last word but need to be there to listen. How you say something considering tone of voice and body language means so much."
	Talk Down	"This intervention has been helpful in re-educating staff about steps to help reduce/prevent an escalation in client's behavior so as to reduce the possibility of further restrictive interventions."
	Talk Down	"Structured process, easily to follow, assisted in reducing restrictive interventions, increased confidence."
Ward culture change	Model	"It feels like we desperately needed something to remind us why we got into this nursing, it brings it back to basics and it brings it back to the patient."
	Clear Mutual Expectations	"Collaborative—helped create a sense of community on the unit."
	Know Each Other	"On this unit we needed something to break down the barriers between patients and staff and it reminds you that you have common ground not only with patients but with each other. It allows us to focus on what we have in common rather than our difference."
	Know Each Other	"Works well to reduce detachment between patients and staff and to build rapport."
	Mutual Help Meeting	"This is awesome because it makes it about the patient and empowers them to have a say, and to be a part of what goes on around them during a time when a lot of choice is taken away."
	Positive Words	"If attitudes start with staff, consumers will reap the rewards making it an easier day for all."
	Positive Words	"The shift in culture and the shift in language used has been amazing. Staff attitudes have changed dramatically, and for the better."
Promoting recovery principles	Soft Words	"Utilizes principles of respect and humanity."
	Positive Words	"This shows respect for our clients and focuses on the positive gains which clients are making in their recovery."
	Calm Down Methods	"This is very relevant to this unit because we recently had a sensory room put in and we have been using this method with the high dependency patients as well as on the low dependency side. It also has given staff a chance to engage with patients when before we may not have had to try to think of other ways to deescalate."
	Mutual Help Meeting	"This intervention has helped change the focus from what staff can do for the client, to one where the client is more involved in the decision making about their treatment."
	Calm Down Methods	"This intervention has been very helpful and is used widely on the unit by most staff to assist clients in dealing with stressors and gives them some ownership of how they deal and treat issues relating to their situation."
	Reassurance	"A constructive intervention that offers respect and dignity."
	Discharge Messages	"Provides messages of hope for other patients, we can direct patients to the tree to show that discharge will happen for them and to hold onto hope."
	Discharge Messages	"The patients love it. For the patients to be able to read from other patient's messages of hope is far more powerful than anything that we as nurses can attempt."

of person-centered care. This finding supports previous research that nurses experience increased satisfaction when they are able to spend more time in direct interactions with their patients (20). These opportunities need to be built into ward routines. Safewards was viewed by most as feasible in the current practice environment of competing demands (25). Positive words specifically helped create a professional, supportive, and positive workplace. This finding may highlight one of the key drivers in our previous findings regarding a reduction in seclusion rates associated with Safewards. Previous research has found that negative staff morale increases the likelihood of conflict and containment; these were decreased when staff engaged in positive practice, such as being compassionate and valuing consumers (40).

Staff in this study highlighted that Safewards is clear and straightforward to understand and implement. This finding is at odds with other studies that have found staff did not readily accept or adhere to the interventions and, consequently, fidelity was poor (33, 34). In contrast, in Victoria, before implementation, staff in all wards participated in Safewards training, with evaluation surveys revealing significant increases in staff knowledge, confidence, and motivation to implement Safewards (Fletcher et al., submitted). This provides a possible explanation about staff understanding of the Safewards model and interventions and may explain the high fidelity scores achieved. Furthermore, staff in the present study reported that it was highly probable Safewards would be sustained in their health services over the next 12-months (2 years after Safewards was first implemented). Together, these findings provide support for the notion that Safewards has the potential to be sustained long-term and highlights some factors that may be key to achieving this sustainability (37).

Ward culture change relates to changes in staff attitudes toward consumers and building rapport, which stems from staff realizing and accepting that they are in a position to influence most aspects of the ward procedures and interactions. This corresponds to conclusions drawn in previous research that views about restrictive practices are divergent among staff. When staff connect with the uniqueness of a consumer, they are less likely to believe in the use of restrictive practices. In contrast, when distance remains between staff and consumers, staff view consumers as having "common needs and common restrictions" (8).

Feedback from staff in the current study aligns with consumer feedback regarding Safewards promoting aspects of recovery. In particular, consumers consulted in our work have expressed a view that Safewards promotes respect for consumers, enhancing consumer participation in their care, and the importance of dignity and hope (38).

Perceived Shortcomings

A small minority of staff rated the model or interventions as poor. Reasons provided included describing a lack of staff ownership resulting in the intervention not being implemented well. This theme aligns with the small group of consumers who rated some of the interventions poorly, with one reason being that staff did not use the interventions in some wards (38). Furthermore, staff rated some of the interventions as poor either because they believed that staff had more responsibility than consumers and therefore an intervention that attempted to level this out was viewed as problematic or because consumers were too unwell to use the intervention appropriately thus it was incompatible. These were not concerns experienced by the consumers (38).

Limitations

The current study may have included a biased sample as staff self-selected, so those with more positive views may have been more inclined to participate. Although all services were represented, the distribution was not representative of the number of wards involved in each service.

CONCLUSION

The present study suggests that the feasible and simple implementation of Safewards has had a positive and pervasive impact on the experience of staff in acute wards across Victoria. Quantitative data showed that staff identified the Safewards model and interventions as having a role in reducing physical and verbal conflict in wards and resulted in staff feeling safer. Qualitative data highlighted that staff experienced a shift in culture, resulting in better relationships with consumers and between staff, as well as a renewed focus on patient-centered, recovery-oriented care. Staff in particular described a less uneven relationship with consumers, suggesting that Safewards has an impact on power dynamics that has previously been linked to the use of restrictive interventions (8). Previous research has highlighted that, when staff are custodial rather than caring, the rate of incidents is higher and so is the potential for use of containing or restrictive interventions (41). A significant investment has been made in Australia in attempting to reduce restrictive interventions over the past two decades through law, policy, and practice change. Safewards appears to support these efforts and needs to be consistently implemented with fidelity to the model to continue the downward trajectory now observed in publicly available reports (42, 43). By easily fitting into the ward flow, Safewards can provide the increased motivation, momentum, and support for staff to engage with consumers more therapeutically and from a recovery-oriented perspective. Future research should focus on the intersection of Safewards and recovery-oriented practice on staff well-being and experiences at work. Further work is required to understand how Safewards interacts with other ward activities, such as sensory modulation (44, 45) and legislative coercion (46).

ETHICS STATEMENT

This study was conducted in accordance with and after recommendations from Victorian Human Research Ethics Multi-site process (ID 15225L). Participants were provided a Plain Language Statement. Consent was indicated on the first page of the online survey where participants were asked to "Please tick on the following statement to indicate that you have read and understood the participant information." Completion of online surveys was anonymous. The protocol was approved by the Monash Health Human Research Ethics Committee.

AUTHOR CONTRIBUTIONS

JF and BH were involved in the development of the study, data collection, and analysis. JF, BH, and LB were involved in the interpretation of data. JF, BH, SK, and LB were involved in the writing and editing of the manuscript.

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SYSTEMATIC REVIEW
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Effects of Seclusion and Restraint in Adult Psychiatry: A Systematic Review

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Background: Determining the clinical effects of coercion is a difficult challenge, raising ethical, legal, and methodological questions. Despite limited scientific evidence on effectiveness, coercive measures are frequently used, especially in psychiatry. This systematic review aims to search for effects of seclusion and restraint on psychiatric inpatients with wider inclusion of outcomes and study designs than former reviews.

Methods: A systematic search was conducted following PRISMA guidelines, primarily through Pubmed, Embase, and CENTRAL. Interventional and prospective observational studies on effects of seclusion and restraint on psychiatric inpatients were included. Main search keywords were *restraint*, *seclusion*, *psychiatry*, *effect*, *harm*, *efficiency*, *efficacy*, *effectiveness*, and *quality of life*.

Results: Thirty-five articles were included, out of 6,854 records. Studies on the effects of seclusion and restraint in adult psychiatry comprise a wide range of outcomes and designs. The identified literature provides some evidence that seclusion and restraint have deleterious physical or psychological consequences. Estimation of post-traumatic stress disorder incidence after intervention varies from 25% to 47% and, thus, is not negligible, especially for patients with past traumatic experiences. Subjective perception has high interindividual variability, mostly associated with negative emotions. Effectiveness and adverse effects of seclusion and restraint seem to be similar. Compared to other coercive measures (notably forced medication), seclusion seems to be better accepted, while restraint seems to be less tolerated, possibly because of the perception of seclusion as "non-invasive." Therapeutic interaction appears to have a positive influence on coercion perception.

Conclusion: Heterogeneity of the included studies limited drawing clear conclusions, but the main results identified show negative effects of seclusion and restraint. These interventions should be used with caution and as a last resort. Patients' preferences should be taken into account when deciding to apply these measures. The therapeutic relationship could be a focus for improvement of effects and subjective perception of coercion. In terms of methodology, studying coercive measures remains difficult but, in the context of current research on coercion reduction, is needed to provide workable baseline data and potential targets for interventions. Well-conducted prospective cohort studies could be more feasible than randomized controlled trials for interventional studies.

Keywords: coercion, restraint, seclusion, psychiatry, inpatient, effect, safety, effectiveness

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INTRODUCTION

Rationale

Coercion is a theme of worldwide importance in psychiatry and is defined as the use of an intervention against a person's will (1). Coercive measures can also have other dimensions, in particular, limitations of freedom of movement (1) that are frequently used in psychiatry, usually for containment of aggressive behaviors, but also in other circumstances and settings, including every medical specialty (2, 3). In the context of overriding a person's will, coercion raises ethics and legal questions. These measures limit several fundamental human rights, such as liberty of choice or movement, autonomy, and physical integrity (4), and are therefore subjected to international, European, state, and local laws and regulations (5, 6). Discrepancies regarding the use of coercive measures between countries and even regions inside the same country are important (7–9). They concern clinical practices as well as juridical and ethical application of laws or recommendations. Efforts are made for an international harmonization of guidelines and practices, for example, through the "European Evaluation of Coercion in Psychiatry and Harmonization of Best Clinical Practice" (EUNOMIA) project (10, 11).

Various forms of coercion exist that can be differentiated into formal, informal, and subjective coercion, but their definitions and interpretations vary between countries (12). Formal coercion usually includes involuntary admission, involuntary treatment, seclusion, and restraint. The two latter categories refer to methods limiting freedom of physical movement. Several kinds of physical restraint exist either mechanical when devices are used for immobilization or manual when staff holds the patient. Seclusion is the confinement of the patient in a locked room from which he cannot exit on his own (1). Involuntary admission corresponds to the hospitalization of the patient against his will. Involuntary treatment refers to the administration of a medication against the will of the patient (1). The concept of this coercive measure is however very heterogeneous and can take several forms and definitions depending on the local or state legislations (5). Informal coercion regroups persuasion, manipulation, or other types of control or influence (12, 13). Subjective coercion characterizes patients', caregivers', or stakeholders' points of view or feelings in situations of coercion. Subjective perception can differ from objective events (14).

The topic of coercion is particularly relevant in psychiatry as patients suffering from psychiatric disorders can lack decision-making capacity. The latter are thus susceptible to the other's influence or power abuse (12). This susceptibility can lead to disrespect of human rights (15). In this context, use of coercive measures in psychiatry is controversial and needs to be practiced with great care (16).

Importantly, clinical practice should follow the principles of evidence-based medicine. By definition, an intervention is legitimate only if a direct benefit for the patient is scientifically proven (17). However, few data exist on the real benefit of coercive measures, regarding efficiency, efficacy, or effectiveness (18, 19). Several problems inherent to the topic limit application of rigorous scientific methodology. These problems include the heterogeneity of definitions (four formal types of coercion, informal and subjective types) and clinical practices (variation between countries and between hospital of the same country) (4) as well as difficulties in collecting valid and reliable data, with patients not always capable of consenting to research and randomization difficult to implement (20). Despite these scientific limitations in the evidence base, coercive measures are commonly used in adult psychiatric clinical practice. Some multicenter studies reported epidemiological data on the difference of use of coercion between countries or hospitals of the same country. Globally the rate of use of coercive measures in the literature varies from 0.4% to 66% (21). In a multicenter study in 10 German psychiatric hospitals, Steinert et al. reported an exposition to coercion in 9.5% of admissions (22). In Martin et al., 6.6% of admissions in seven Swiss psychiatric hospitals were affected by mechanical restraint compared to 10.4% of admissions in seven German hospitals (23). In the same study, 17.8% and 7.8% of admissions were respectively affected by seclusion. The EUNOMIA multicenter project conducted at 13 centers in 12 European countries studied the characteristics of the use of coercion and of the patient population submitted to coercive measures (seclusion, restraint, and/or forced treatment) and searched for differences between countries (11). The results showed significant variations of frequency of use between countries, from 21% to 59% of involuntary admissions, with higher rates in Poland, Italy, and Greece (8, 24). These discrepancies between lack of evidence for efficiency and frequency of use highlight the need for further study of the effects of coercion in adult psychiatry.

In addition, recent research has addressed coercion reduction, mainly through development of programs aiming to reduce coercive measures (3, 25). However, in order to evaluate the effectiveness of coercion reduction, objective data on baseline measures are needed without implementation of specific interventions to reduce coercion. For these reasons, studies on the consequences of coercive measures are of great scientific and clinical importance. Gutheil stated in 1978 that seclusion could in theory permit containment, reassurance, and diminution of sensible input (26). Several studies and reviews have since studied risk factors and effects of seclusion and restraint, but the results for effectiveness have been extremely limited (18, 19). Predictors of the use of coercive measures have been studied more extensively (27, 28) but mainly through retrospective databases and analyses (16). Sailas and Fenton (19) and Nelstrop et al. (29), two systematic reviews, and Luciano et al., a critical review (28) found two randomized controlled

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Abbreviations: BDI-II, Beck Depression Inventory II; BPRS, Brief Psychiatric Rating Scale; CENTRAL, Cochrane Central Register of Controlled Trials; CINAHL, Cumulative Index to Nursing and Allied Health Literature; DVT, deep vein thrombosis; EUNOMIA, European Evaluation of Coercion in Psychiatry and Harmonization of Best Clinical Practice; PANSS, Positive and Negative Syndrome Scale; PICOS, participants, interventions, comparators, outcomes, study design; PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses; PROSPERO, International prospective register of systematic reviews; PTSD, post-traumatic stress disorder; RCT, randomized controlled trial; USPSTF, U.S. Preventive Services Task Force.

trials (RCT), but no other studies reporting results on effects or safety of seclusion or restraint with equivalent levels of evidence. Furthermore, the two systematic reviews have not been updated since 2012. The subject is of high importance due to the substantial consequences for patients, especially in case of severe mental disorders. In our view, one condition for legitimacy of coercive measures, not only juridical but also ethical and clinical, should be a beneficial effect for the patient. This could be a protective effect, but we were also concerned about the belief that coercive measures can have therapeutic effects. We have observed this belief in our experience, and it has also been described in the literature (30). We wanted to investigate whether or not this belief has scientific bases. An update of the recent literature on the evidence of efficiency (including efficacy, effectiveness and therapeutic benefit) of coercive measures is thus needed in order to evaluate the legitimacy of their use in clinical practice.

Due to the complexity of the subject, the systematic review needs to be limited to specific, well-defined questions. Efficacy of coercive measures is a fundamental question, as their use implies important clinical, ethical, and legal consequences. Concerning involuntary treatment, a direct beneficial and therapeutic effect seems more intuitive than for seclusion or restraint. Involuntary hospitalization is another way of coercion, for which the initial decision is mainly made outside of the hospital context. For these reasons, we chose to limit the present review to the study of seclusion and restraint that represent coercive measures limiting freedom of movement in order to investigate harmful or beneficial effects of these measures. Including involuntary treatment or hospitalization seemed to us to be another research question and would widen the scope of research questions too much for them to be answered in a single review. In addition, these methods directly concern the institutional practices in most countries and searching for their effectiveness and efficacy could provide important information for interventional studies aimed at seclusion and restraint reduction in clinical practice.

Objectives and Research Question

The aim of this study is to conduct a systematic literature review on the negative and potentially beneficial effects of seclusion and restraint on adult psychiatric inpatients, compared to non-exposure or to exposure to other coercive measures. This review should permit establishing the potential harms and benefits of these measures and, therefore, provide an improved evidence base for making decisions in acute psychiatric care. In addition, through systematic synthetization of available baseline data, this review should provide arguments for later implementation of coercion reduction programs. Finally, we aim to synthesize the methods used to study the topic in order to propose a systematic approach for structuring research and improvement of the evidence basis.

As Sailas and Fenton found already in 2012, there have been only two randomized controlled trials on the effectiveness of seclusion and restraint (19). We chose to widen the search to prospective observational studies with various outcomes measuring benefits and harms of seclusion and restraint. Even though this approach limits the evidence level, it will allow for a broader appreciation of the consequences of interventions limiting liberty of movement.

MATERIAL AND METHODS

Study Design

This systematic review of the literature follows Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, with a search question defined with the participants, interventions, comparators, outcomes, study design (PICOS) method as described in the Cochrane Collaboration Handbook (31). The studied population includes psychiatric inpatients hospitalized in adult psychiatric inpatient units. Interventions are seclusion and/or physical restraint (mechanical or manual). The comparator is either non-exposure to seclusion and/or restraint or exposure to other coercive measures [involuntary admission or treatment, or seclusion and/or restraint (the one that is not the main intervention)]. We considered a broad range of potential beneficial and negative effects of seclusion and restraint, including objective effectiveness (symptom intensity, level of needed medication, and length of stay), safety, adverse effects, quality of life, incidence of post-traumatic stress disorder (PTSD), and patients' subjective perception of coercion.

Eligibility Criteria

Inclusion Criteria

Articles studying adult psychiatric inpatients and physically limiting coercive measures (seclusion or restraint) were selected. We included interventional studies (including randomized controlled trials) and prospective observational studies including case-control studies. Articles published in English, French, or German were included. Articles investigating effects of seclusion and restraint on adult psychiatric inpatients were included. After full-text assessment, we synthesized the various studied outcomes and summarized them in different subgroups, which are detailed in **Table 1**: objective effectiveness (symptom intensity, level of needed medication, and length of stay), safety, adverse effects, quality of life, incidence of PTSD, and patients' subjective perception of coercion.

Exclusion Criteria

Studies involving specific populations were excluded: non-psychiatric, geriatric, pediatric, outpatient, or forensic populations; somatic, addictive, or eating disorders; and intellectual disabilities. Studies on other coercive measures (involuntary admissions, forced medication, or informal coercion) were excluded.

We excluded retrospective studies (including extraction from databases), case series, and expert opinions. Qualitative studies restricted to thematic analyses were not included due to lack of objective data. Articles in other than the above-mentioned languages were not included. Studies on the staff's attitude to seclusion or restraint were not included, as in most studies these are considered predictive factors, rather than effects, of coercive

TABLE 1 | Explored outcomes.

Outcomes	Subgroups
Objective effectiveness	Symptoms intensity (including aggressiveness) (evaluated with PANSS (32, 33), BPRS (34–37) and BDI-II (36)) Need to change intervention Levels of needed medication Readmission rate Time to emergency resolution Length of stay Safety Quality of life after intervention Global functioning during and after intervention Ward environment
Adverse effects	Incidence of deep vein thrombosis during restraint Incidence of PTSD after intervention Influence of history of life-threatening events on traumatic effects of intervention Reported hallucinations during seclusion Occurrence of adverse events: agitation, suicide attempt or self-harm, revival of previous traumatism, death, hypertension, physical pain or fracture
Patients' subjective perception	Positive and negative reported feelings during and after intervention Acceptance and comprehension of intervention (helpful, necessary, or disapproved) Level of perceived coercion Discrepancy between objective and reported coercion Evaluation of interaction and dialogue with staff Influence of ward environment on perceived coercion Feeling of improvement, safety, or security during and after intervention Preferences between different coercive measures

PANSS, Positive and Negative Syndrome Scale; BPRS, Brief Psychiatric Rating Scale; BDI-II, Beck Depression Inventory II.

measures. Articles focused on risk factors or coercion reduction programs were excluded because they did not meet the search question criteria.

Search Strategies

We searched the following databases: MEDLINE *via* Pubmed, Embase, Web of Science, PsycINFO, Google Scholar, Cochrane Central Register of Controlled Trials (CENTRAL), Cumulative Index to Nursing and Allied Health Literature (CINAHL) *via* EBSCO, Cairninfo, PROSPERO, and Clinicaltrials.gov.

Search strategies are detailed in **Supplementary Table 1**. We designed comprehensive searches for the two main databases (MEDLINE *via* Pubmed and Embase), described in **Supplementary Table 1**. For less exhaustive databases, we employed the following keywords: (coercion OR restraint OR seclusion) AND (psychiatric OR psychiatry OR mental health) AND (effect OR safety OR harm OR efficiency OR efficacy OR beneficence OR risk OR mortality OR quality of life OR effectiveness). References of selected studies and reviews on seclusion and/or restraint were screened and referred to as "other sources" in **Figure 1** (19, 25, 27–28, 29, 38–40).

Data Sources, Study Selection, and Data Extraction

Data Management, Including Time Frame

The systematic literature search was conducted from the first available article to December 8, 2018. Databases searched have been updated since this date. Duplicates were removed before screening titles with EndNote™ X8.2.

Study Selection Processes

Two authors independently screened titles and abstracts for study selection. Disagreements were resolved by consensus. The eligibility of retrieved full-text articles was discussed with a third author.

Data Collection Processes

Data were extracted from selected articles using specified fields: author, year of publication, location, design and sample, studied interventions, explored outcomes, results, and risk of bias. When available, we reported quantitative results (percentages).

Data Analysis

A qualitative analysis of included studies was performed. Due to the heterogeneity of the outcomes reported, a quantitative analysis was not possible. The quality of evidence and risk of bias were systematically assessed for individual studies using the revised Cochrane Risk of Bias Tool (31) for RCTs and the U.S. Preventive Services Task Force (USPSTF) tool for observational studies (41, 42). Several potential sources of bias were evaluated depending on study design. For RCTs, assessed sources of bias were sequence generation, allocation concealment, blinding of participants, personnel and outcome assessors, selective outcome reporting, and other sources of bias. As described in the Cochrane Collaboration Handbook (31), RCTs can then be assigned to different categories of risk (low, moderate, or high). For observational studies, analyzed sources of bias were selection bias (assembly and maintenance of comparable groups), quality bias (adequacy of measurements and potential confounders with either restriction or measurement for adjustment in the analysis), information bias (loss to follow-up and definitions of interventions and outcomes), and selective outcome reporting. Meta-biases (selection and publication, information, and analysis bias) were evaluated following Institute of Medicine guidelines (42).

RESULTS

Study Selection and Characteristics

Applying the search strategy described above, we retrieved 8,590 articles from all databases (**Figure 1**), and 6,854 remained after removing duplicates. There were 438 articles eligible for abstract review, and 131 were eligible for full-text reading. Out of these 131, thirty-five studies were included

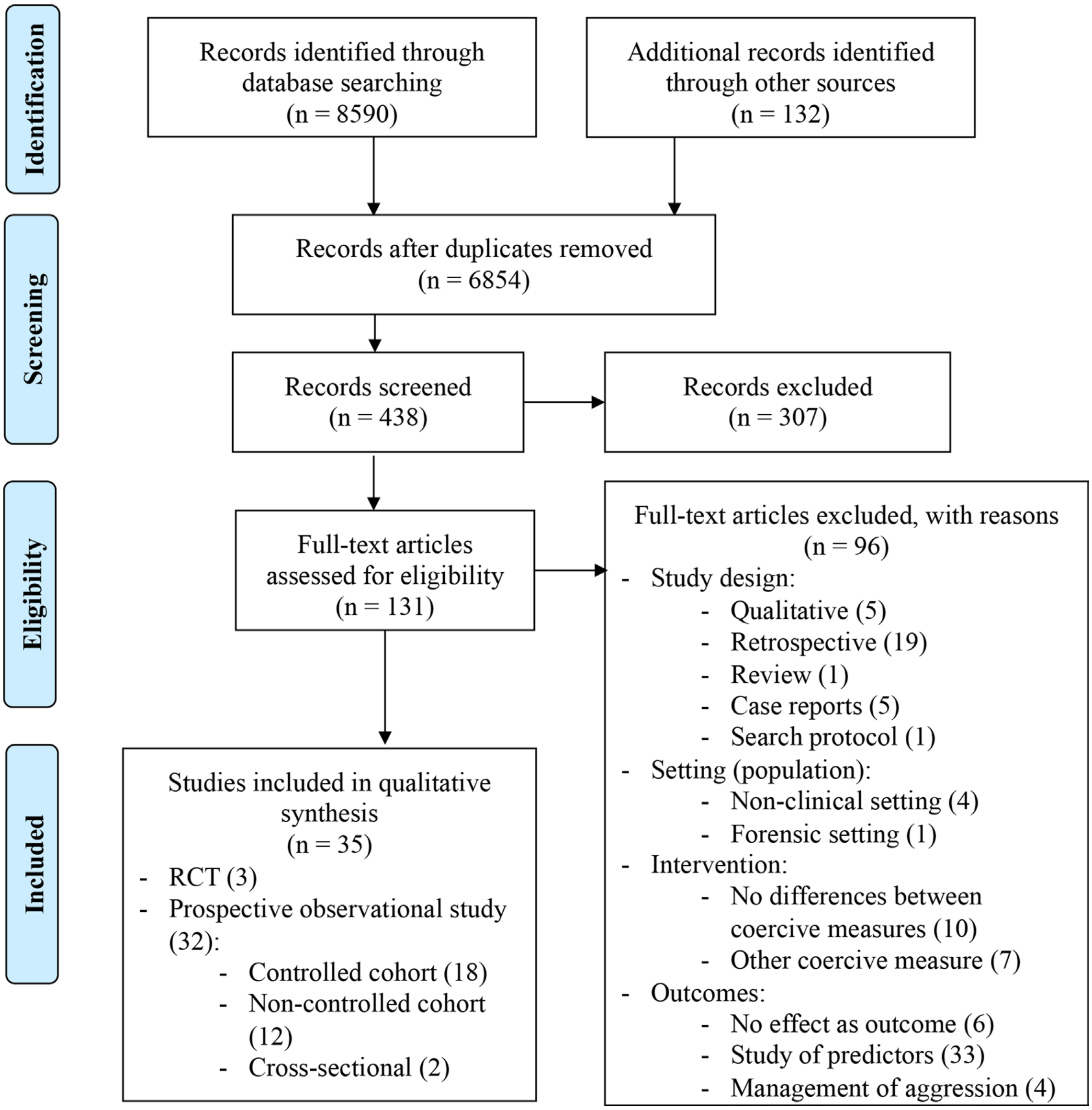

FIGURE 1 | Prisma-Flow Diagram (43).

in the qualitative analysis. In all, 96 articles were not related to the research question or did not meet inclusion criteria and were excluded. In terms of PICOS, exclusion criteria addressed the study design: 5 studies were qualitative, 19 were retrospective, 5 were case reports, 1 was a search protocol, and 1 was a review; the population/setting: one study took place in a forensic ward and four in a non-clinical setting; the interventions: 10 made no differences between types of coercive measures, and 7 did not study seclusion or restraint; and finally, the outcomes: 6 did not study effects of coercion but other outcomes, 33 studied predictive factors, and 4 studied aggression and its management but not the effects of seclusion or restraint (**Figure 1**). The characteristics of selected studies are arranged by study design, explored outcome, and comparator to the main intervention (**Table 2**). Three studies were randomized controlled trials, and 32 had a prospective observational design (30 cohorts and two cross-sectional studies). Four studies compared secluded versus restrained patients (32, 44, 56, 62). Two studies compared seclusion and restraint (without distinction) versus non-exposure (48, 58), and four studies compared these measures to other coercive measures (34, 36, 47, 63). Nine studies compared secluded versus non-secluded patients. Guzmán-Parra et al. compared restraint versus forced medication (57), and Wallsten et al. compared restraint versus non-exposure (37). Two additional studies provided data on secluded or restrained patients

TABLE 2 | Characteristics of included studies.

Article	Design and methods	Intervention vs comparator	Explored outcomes	Results and conclusions
Huf et al. 2012, Brazil (44)	- Unblinded RCT, 14-day follow-up - 105 agitated psychotic patients (54 secluded, 51 restrained) - Dg (restrained vs secluded): 82.3 vs 77.8% psychosis (SD or mania), 5.9 vs 11.1% psychological agitations, 11.8 vs 11.1% SU	Seclusion vs restraint	- Effectiveness - Adverse events - Subjective perception	- Negative effect - 2/3 secluded patients fully managed with seclusion, 1/3 changed to restraint - No significant difference between groups in effects, adverse events, or patients' satisfaction - Ccl: Suggestion to begin with seclusion that seems not to harm or prolong coercion
Bergk et al. 2011, Germany (32)	- Unblinded RCT - 102 patients (12 randomized/48 nonrandomized secluded, 14 randomized/28 nonrandomized restrained Semi-structured interview - Dg (randomized vs nonrandomized secluded/randomized vs nonrandomized restrained): 50 vs 71/86 vs 50% SD, 50 vs 8/14 vs 25% AD, 0 vs 21/0 vs 25% PD	Seclusion vs restraint	- Symptom intensity - Levels of needed medication - Adverse events - Subjective perception	- Negative effect - No significant differences for adverse events and subjective experience - Levels of medication and aggressive symptoms are only significantly lower for nonrandomized secluded patients - Ccl: Clinical decisions should take patients' preferences into account. RCTs on coercion are feasible
Vaaler et al. 2005, Norway (33)	- Non-inferiority RCT - 25 secluded patients in a traditional manner; 31 in a redecorated room - Dg (new interior vs traditional interior): 51.6 vs 24% SD, 16.1 vs 28% AD, 16.1 vs 24% SU, 6.5 vs 4% OD and 9.7 vs 2% O	Seclusion	- Ward environment - Length of stay - Symptom intensity - Subjective perception	- Negative and beneficial effects - No significant differences between groups - Ccl: No negative effects of a refurnished room on seclusion efficacy
Cashin 1996, Australia (45)	- Prospective quasi-experimental study - 53 involuntary admissions (27 secluded patients, 26 non-secluded) - No diagnostic information but no significant difference between groups	Seclusion vs non-exposure	Time to emergency resolution Levels of needed medication	Beneficial effect No significant differences between groups Ccl: Seclusion may be the most effective choice in some circumstances
Hafner et al. 1989, Australia (46)	- 38-weeks multi-center prospective study - 30 secluded and 60 non-secluded patients - Dg (secluded, no difference between groups): 46.3 (vs 23% non-secluded) SD, 12.2% BPD, manic state, 12.2% MDD, 9.8% OD, 7.3% PD, 9.8% SU, 2.4% BRP	Seclusion vs non-exposure	- Levels of needed medication - Length of stay - Readmission rate	- Negative and beneficial effects - 25% more neuroleptic medication for secluded patients, suggesting that seclusion did not permit to reduce the levels of medication required to manage psychiatric agitation - Less medication for non-secluded patients, suggesting that secluding agitated patients may reduce the unit level of dangerousness - No differences in length of stay or readmission rate, suggesting no adverse effect of seclusion
Georgieva et al. 2012, Netherlands (47)	- 3-year prospective study - 125 coerced patients (62 secluded, 18 forced medicated, 34 secluded and forced medicated, 11 secluded and restrained) - Structured questionnaires - Dg (secluded/involuntary treated/secluded and treated/secluded and restrained): 27/39/53/60% SD, 34/33/38/10% AD, 9/33/9/0% PD, 32/28/13/30% SU, 5/0/6/0% PTSD	Seclusion and restraint vs other coercive measures	- Effectiveness - Adverse events - PTSD - Subjective perception	- Negative effect - Combined seclusion and restraint with higher psychological and physical burden than seclusion alone or seclusion and forced treatment - No significant difference in effectiveness - Ccl: Forced medication seems better tolerated. Seclusion and/or restraint could give revival of previous traumatism or PTSD
Soininen et al. 2013b, Finland (48)	- 1-year prospective study - 36 secluded or restrained (no distinction) patients, 228 non-exposed - Structured questionnaire - Dg (secluded vs non-secluded): 54 vs 33% SD, 31 vs 49% AD, 14 vs 18% O	Seclusion and restraint vs non-exposure	Quality of life	- Beneficial effect - Exposed patients reported a better subjective quality of life at discharge compared to non-exposed patients - Ccl: Either seclusion and restraint had only short-term negative influence on quality of life, or the observed association may not be causal

TABLE 2 | Continued

Article	Design and methods	Intervention vs comparator	Explored outcomes	Results and conclusions
McLaughlin et al. 2016, 10 European countries (34)	- Multi-center prospective study (EUNOMIA project) - 2,030 involuntary admissions, 770 with one or more coercive measures (84 secluded, 439 restrained, 556 forced medication). - 1,353 interviews - Dg (coerced vs non coerced): 68 vs 60% SD	Seclusion and restraint vs other coercive measures	Length of stay	- Negative and beneficial effects - At 3 months, 843 involuntary admitted patients approved and 506 (37.4%) disapproved their previous admission. Forced medication was the only significant measure associated with admission disapproval - Seclusion and restraint were associated with increased length of stay (in multivariate analysis, only seclusion remains significant). Secluded patients' symptom intensity did not fully explain the observed increase
Soloff et Turner 1981, US (49)	- 8-month prospective study - 59 secluded patients, 159 non-secluded - Structured questionnaire - Dg (secluded vs non-secluded): 42.4 vs 40.9% SD, 5.1 vs 1.9% BPD, 11.9 vs 11.3% other AD, 6.8 vs 4.4% OD, 8.5 vs 12.6% PD, 0 vs 11.3% neurosis, 23.7 vs 17.6% O (SU and MR)	Seclusion vs non-exposure	Length of stay	- Beneficial effect - Length of stay associated with incidence of seclusion, but no influence of chronicity and legal status at admission - Initial postulate: Seclusion as therapeutic and control function for patient and ward milieu
Schwab et Lahmeyer 1979, US (50)	- 6-month prospective study - 52 secluded patients, 90 non-secluded - Dg (secluded vs non secluded): 29 vs 29% SD, 19 vs 7% BPD, manic state, 14 vs 14% psychotic MDD, 14 vs 32% neurosis, 8 vs 3% SU, 6 vs 3% PD, 10 vs 12% O	Seclusion vs non-exposure	Length of stay	Negative effect Increased length of stay for secluded patients
Mattson et Sacks 1978, US (51)	- 1-year prospective study - 63 secluded patients, 160 non-secluded - Dg (secluded vs non secluded): 63 vs 38% SD, 17 vs 4% BPD, manic state, 10 vs 14% PD, 10 vs 44% O	Seclusion vs non-exposure	Length of stay	- Negative effect - Increased length of stay for secluded patients - Effect no longer significant when focusing on patients less than 20 years of age
Hammill et al. 1989, US (52)	- Prospective study - 100 patients (26 secluded, 74 non-secluded) with SD or SAD - Semi-structured interview	Seclusion vs non-exposure	- Length of stay - Subjective perception	- Negative and beneficial effects - Increased length of stay for secluded patients - 13/17 secluded patients evaluated seclusion as necessary
Plutchik et al. 1978, US (53)	- 2 prospective studies - 1st: descriptive (118 secluded patients, 118 randomly assessed non-secluded) - 2nd: qualitative (30 secluded and 25 non-secluded patients) - Structured interview - Dg (secluded vs non secluded): 64 vs 45.8% SD, 2.5 vs 0% BPD, manic state, 3.4 vs 8.5% psychotic MDD, 10.2 vs 13.6% depressive neurosis, 0.8 vs 5.1% SU, 6.8 vs 13.6% PD, 5.9 vs 8.5% adjustment reactions, 3.4 vs 5.1% OD, 2.5 vs 0% MR	Seclusion vs non-exposure	- Length of stay - Subjective perception	- Negative and beneficial effects - 1st study: Increased length of stay for secluded patients - 2nd study: 40% secluded patients rated seclusion as not helpful. 60% reported feeling better after seclusion
Mann et al. 1993, US (54)	- 6-month prospective study - 50 secluded patients - Structured questionnaire - Dg: 24% MDD, 10% dysthymic disorders, 30% BPD, 2% SAD, 16% SD, 6% BRP, 8% SU, 4% none	Seclusion	- Length of stay - Subjective perception	- Negative and beneficial effects - Seclusion safe and secure (67%) - Feelings of constant attention and care from staff (45%) - Increased length of stay for secluded patients (compared to general unit mean)

TABLE 2 | Continued

Article	Design and methods	Intervention vs comparator	Explored outcomes	Results and conclusions
Ishida et al. 2014, Japan (55)	- Prospective study - 190 restrained patients - Dg: 3.9% OD, 9.9% SU, 63.5% SD, 14.9% AD, 1.1% somatoform disorders, 6.6% PD	Mechanical restraint	Adverse effects	- Negative effect - D-dimer augmentation for 72 restrained patients with prophylaxis. - US Doppler of lower extremities showed asymptomatic DVT in 21 patients (11.6%) - Incidence of DVT associated with excessive sedation, longer duration of restraint, lower antipsychotic dosage - Ccl: Probable underestimation of DVT in routine use of restraint
Steinert et al. 2013, Germany (56)	- Cross-sectional study, 1-year follow-up after Bergk et al. 2011 - 60 of 102 (59%) previous patients (31 secluded, 29 restrained) - Dgs: 63% SD, 23% BPD, 14% O	- Seclusion vs restraint	- PTSD - Subjective perception	- Negative and beneficial effects - Seclusion reported as less restrictive - 1 secluded and 2 restrained patients with symptoms fulfilling PTSD diagnosis - Ccl: The lower than expected incidence of PTSD may be due to natural resolution of symptoms or to the interviews conducted with the patients, which could have helped prevent PTSD
Guzmán-Parra et al. 2018, Spain (57)	- 2-year prospective study - 111 coerced patients (32 restrained, 41 forced medicated, 38 forced medicated and restrained) - Dg (restrained vs involuntary treated vs combined): 4.9 vs 9.4 vs 10.5% SU, 58.5 vs 50 vs 68.4% SD, 22 vs 28.1 vs 18.4% AD, 2.4 vs 3.1 vs 0% anxiety disorders, 7.3 vs 6.3 vs 0% PD, 4.9 vs 3.1 vs 2.6% O	Mechanical restraint vs forced medication	- PTSD - Subjective perception	- Negative effect - Higher perceived coercion with restraint (compared to forced medication). - Higher post-traumatic stress with forced medication - Combined forced medication and restraint associated with higher coercion perception and less treatment satisfaction (than restraint or forced medication alone)
Steinert et al. 2007, Germany (58)	- Prospective study - 117 involuntary admissions with history of seclusion or restraint, 18 secluded or restrained (no distinction) patients at present admission - Structured questionnaires - Dg: 79.5% SD 8.5% other psychotic disorders, 12% SAD	Seclusion and restraint vs non-exposure	- Influence of history of life-threatening events on traumatic effects of intervention	- Negative effect - Bidirectional association of history of seclusion or restraint with life-threatening traumatic events. - Exposure to past traumatic events enhances the risk of revictimization and revival of previous traumatism during inpatient treatment - Ccl: Coercive measures may cause re-experienced traumatism
Wallsten et al. 2008, Sweden (37)	- 2-year prospective study - 115 patients (19 reported mechanically restrained but 8 false positives; 98 reported non-restrained but 4 false negatives); 15 truly restrained - Structured interview - Dg (true positives/true negatives/false positives/false negatives): 46/52/38/25% SD, 36/9/63/25% AD, 18/19/-/50% O	Mechanical restraint vs non-exposure	- Discrepancy between objective and reported coercion - Subjective perception	- Negative effect - 42% false positive and 4% false negative reports of restraint. - Causes are not clear [communication problem, memories failures (or false memories), or emotional traumatic reactivation] - Ccl: Subjective quality of reports of past traumatic events
Whitecross et al. 2013, Australia (59)	- 9-month prospective study - 31 secluded patients - Dg: 51.6% SD, 32.3% SAD, 16.1% O	Seclusion	- PTSD	- Negative effect - 47% probable PTSD (IER-S >33) after seclusion
Fugger et al. 2015, Austria (35)	- 18-month prospective study - 47 mechanically restrained patients - Dg: 23.4% OD, 12.8% SU, 19.1% paranoid SD, 8.5% catatonic SD, 4.2% SAD, manic state, 14.9% BPD, manic episode, 2.1% BPD, mixed episode, 2.1% recurrent MDD, 6.4% anorexia, 6.4% PD	Mechanical restraint after intervention	- PTSD - Subjective perception	- Negative and beneficial effects - 50% high perceived coercion and 25% probable PTSD - Less memory event, more feeling of being healthy and more acceptance of restraint than rated by physicians

TABLE 2 | Continued

Article	Design and methods	Intervention vs comparator	Explored outcomes	Results and conclusions
Palazzolo 2004, France (60)	- 6-month prospective study - 67 secluded patients - Semi-structured interview - Dg: 32.8% SD, 28.4% BPD, 14.9% BRP, 10.4% SAD, 5.9% anorexia, 4.6% somatoform disorders, 3% antisocial PD	Seclusion	- Hallucinations - Subjective perception	- Negative and beneficial effects - Anger was the most frequent reported emotion - 31% reported hallucinatory experience - 67% reported anxiety - 8% reported feeling better, and 8% the necessity of continuing treatment
Kennedy et al. 1994, US (61)	- Prospective study - 25 secluded patients with SD or SAD - Semi-Structured interview	Seclusion	- Hallucinations - Subjective perception	- Negative and beneficial effects - For 48%, seclusion was not helpful - 52% reported hallucinations during seclusion - 70% who experienced hallucinations during seclusion were hallucinating before seclusion but proportional increase of hallucinations during seclusion was not significant - Hallucinating patients had longer (but not significantly) seclusion stay, more therapeutic interaction (nurse-patient relationship) and levels of needed medication
Sagduyu et al. 1995, US (62)	- Prospective study - 25 secluded and 25 restrained patients - Semi-structured interview - 76% restrained and 80% secluded patients had a SD	Seclusion vs Restraint	Subjective perception	- Negative and beneficial effects - 40% secluded and 20% restrained with positive evaluation - 71% secluded and 89% restrained remembered past traumatic experiences - 73% secluded and 81% restrained reported negative feelings
Krieger et al. 2018, Germany (36)	- 18-month prospective study, - 213 involuntary admitted patients (78 mechanically restrained, 32 secluded, 30 forced medicated, 20 video monitored) - 51 voluntarily admitted patients in a closed ward, - Structured interview - Dg (coerced vs control groups): 71.1 vs 51% SD, 10 vs 21.6% SU, 12.8 vs 19.6% AD, 3.3 vs 7.8% PD, 33.6 vs 45.1% of comorbidities with SU	Seclusion and restraint vs other coercive measures	Subjective perception	- Negative and beneficial effects - Negative emotions associated with seclusion or restraint - Increasing understanding of use of seclusion or restraint during hospitalization - Seclusion preferred among all coercive measures, while restraint less accepted than the other measures
Gowda et al. 2018, India (63)	- Prospective study - 200 patients (40 mechanically or manually restrained, 36 secluded, 116 chemical restrained, 64 involuntarily treated, 29 ECT) - Dg: 48% SD, 43.5% AD, 18.5% O, 48.5% comorbidities with SU	Seclusion and restraint vs other coercive measures	Subjective perception at admission and discharge	Negative effect Physical restraint associated with a greater perception of coercion, followed by involuntary treatment, chemical restraint, seclusion and finally ECT
Sorgaard 2004, Norway (64)	- 17-week prospective interventional study - 190 admissions (16% secluded, 160 non-secluded) - Standardized questionnaires - Dg (baseline vs project phase): 26.8 vs 28.6% SD, 53.6 vs 41.2% AD, 3.6 vs 5.0% PD, 8.9 vs 11.8% SU, 7.1 vs 13.6% O	Seclusion vs non-exposure	- Adverse events - Subjective perception	- Negative effect - Seclusion as principal factor associated with perceived coercion (compared to age, sex, forced medication, or length of stay)
Martinez et al. 1999 (65)	- Cross-sectional study - 69 patients (53 secluded, 16 non-secluded) - Semi-structured interview - No diagnostic information	Seclusion vs non-exposure	Subjective perception	- Negative and beneficial effects - Negative perception of seclusion (62% overuse, 76.5% punishment) - 56.2% reported seclusion as needed

TABLE 2 | Continued

Article	Design and methods	Intervention vs comparator	Explored outcomes	Results and conclusions
Larue et al. 2013, Canada (66)	- 1-year prospective study - 50 secluded or restrained (no distinction) patients - Semi-structured interview - Dg: 66% SD, 30% AD, 2% PD, 2% anxious disorders	Seclusion and restraint	Subjective perception	Beneficial effect 52% agreed with improved behavior after seclusion
Soininen et al. 2013a, Finland (67)	- 18-month multi-center prospective study - 90 secluded or restrained patients (no distinction) - Structured questionnaire - Dg: 12% SU, 60% SD, 20% AD, 6% PD	Seclusion and restraint	Subjective perception after intervention	- Negative effect - Deny necessity and beneficence of seclusion or restraint - Dissatisfaction - Not enough dialogue
Keski-Valkama et al. 2010, Finland (68)	- 1-year prospective study - 38 secluded patients in general vs 68 in forensic wards - Structured interview - Dg in general wards: 71.1% SD, 10.5% SU, 15.8% AD, 2.6% O	Seclusion	Subjective perception	- Negative and beneficial effects - Mostly negative feelings, loneliness - Need for interaction - Seclusion as necessary - 54% secluded patients perceived seclusion as a punishment
Stolker et al. 2006, Netherlands (69)	- 18-month prospective study - 78 secluded patients - Structured interview - Dg: 67% SD, 11% BPD, 11% cluster B PD	Seclusion	- Ward environment - Subjective perception	- Negative and beneficial effects - Staying in multi-bed rooms prior to seclusion associated with less negative views of seclusion
Richardson et al. 1987, US (70)	- 1-year prospective study - 52 secluded patients - Semi-structured interview - Dg: 36.5% SD, 28.8% SAD, 19.2% AD, 9.6% atypical psychosis, 1.9% borderline PD, 1.9% organic hallucinosis, 1.9% dementia	Seclusion	Subjective perception	- Negative and beneficial effects - 31% patients reported anger, 58% felt punished - 50% reported seclusion as protection, 48% as necessary - 37% reported hallucinatory experience - 20/52 reported improvement after seclusion, 8/52 deterioration
Binder et McCoy 1983, US (71)	- 8-month prospective study - 27 secluded patients - Semi-structured interview - Dg: 45.8% SD, 33.3% AD, 8.3% SAD, 8.3% antisocial PD, 4.2% acute paranoid BRP	Seclusion	Subjective perception	- Negative and beneficial effects - 4 patients rated seclusion as therapeutic, 12 as necessary - 11 rated beneficial aspects (7 hypostimulation) - 18 negative emotions - For 14, seclusion had no effect, 3 beneficial effect, 2 negative effect, 5 first negative effect changed to beneficial effect
Tooke et Brown 1992, US (72)	- 11-week prospective study - 19 secluded patients (11 locked rooms, 8 secluded area) - Structured questionnaire - Dg: 47.3% SD, 26.3% MDD or suicidal ideations	Seclusion	Subjective perception	- Negative effect - 73% secluded patients (in locked rooms) felt punished - Strong negative feelings

vs, versus; RCT, randomized controlled trial; Dg, diagnoses; Ccl, conclusions; SD, schizophrenic disorders; AD, affective disorders; PD, personality disorders; SAD, schizoaffective disorder; BRP, brief reactive psychosis; SU, substance use; O, others; BPD, bipolar disorders; MDD, major depressive disorder; OD, organic disorders; MR, mental retardation; PTSD, post-traumatic stress disorder; EUNOMIA, European Evaluation of Coercion in Psychiatry and Harmonization of Best Clinical Practice; US, ultrasound; DVT, deep vein thrombosis; IES-R, Impact of Event Scale-Revised; ECT, Electro-convulsive therapy.

(without distinction) (66, 67), two examined only restrained patients (35, 55), and 10 studies examined only secluded patients. Diagnoses could differ between studies, but most diagnoses were psychotic disorders (ranging from 26.8% to 82.3%), followed by affective disorders (in particular mania) (varying from 12% to 53.6%), substance use (ranging from 4.9% to 32%), and personality disorders (varying from 1.9% to 11%) (**Table 2**). Two articles did not give diagnostic information (45, 65). Two studies selected patients based on the diagnosis of schizophrenic or schizoaffective disorder (52, 61). Symptom intensity was evaluated with the Positive and Negative Syndrome Scale (PANSS) (32, 33); the Brief Psychiatric Rating Scale (BPRS) (34–37), and/or the Beck Depression Inventory II (BDI-II) (36).

Synthesized Findings

Overall, evidence for negative effects have consistently been found across studies: PTSD (47, 57–59), medication need (46), increased length of stay (34, 50–54), deep vein thrombosis (DVT) (55). One study suggested a beneficial effect on quality of life (48). Drawing clear conclusions on beneficial effects of seclusion and restraint were not allowed. Effects of these measures included various outcomes (**Table 1**): two studies explored objective effectiveness of seclusion and restraint (45, 46), four examined beneficial effects, adverse effects, and subjective perception (32, 33, 44, 47), one examined adverse effects (55), one examined quality of life after seclusion or restraint (without distinction) (48), four examined the influence of seclusion or restraint on length of stay (34, 49–51), three examined length of stay and subjective perception (52–54), one examined the incidence of PTSD after seclusion or restraint (58), four examined incidence of PTSD and subjective perception (35, 56, 57, 59), two examined reported hallucinatory experiences during seclusion and subjective perception (60, 61) and 13 examined subjective perception of seclusion or restraint. Fourteen studies reported negative effects of seclusion and restraint, four reported beneficial effects, and 17 reported negative and beneficial effects. Results for these heterogeneous outcomes strongly diverge across studies. Some of them have struggles in achieving definitive conclusions, namely, regarding subjective outcomes. Below, we detail results for each explored outcome by study design and comparator to the main intervention.

Objective Effectiveness

In Bergk et al. and Huf et al., two RCTs comparing seclusion versus restraint, the two interventions had similar effectiveness in terms of level of needed medication (32, 44), intensity of aggressive symptoms, and safety during and after interventions (32). Level of needed medication and aggressive symptoms were significantly lower for the secluded, nonrandomized group compared to the secluded, randomized or restrained (randomized or nonrandomized) groups (32).

Georgieva et al., a prospective study, compared effectiveness (evaluated through global functioning and reduced aggression) between different coercive measures: seclusion or forced medication alone or seclusion combined with forced medication or restraint (47). Seclusion combined with restraint was not more effective than seclusion or forced medication alone or combined (47). In McLaughlin et al., a prospective multi-center study, length of stay was increased for seclusion, restraint, or forced medication compared to non-exposure (to each evaluated coercive measure, but only seclusion remained significant in multivariate analysis) (34). In Soininen et al., secluded or restrained patients (without distinction) reported better subjective quality of life at discharge compared to non-exposed patients (48). The authors concluded that, on the one hand, seclusion and restraint had only little or short-term negative influence on quality of life, and on the other hand, the observed association may not be causal. For them, variations in diagnosis between groups of patients could explain the observed differences (majority of mood disorders in non-exposed versus schizophrenia for exposed patients). Mood disorders are indeed associated with lower subjective quality of life in the literature (48).

In a prospective quasi-experimental study comparing seclusion and non-exposure, Cashin identified no significant differences for level of needed medication or resolution time for emergencies (45). Hafner et al. compared two units prospectively, one using seclusion and the other not using seclusion (46). Seclusion was compared to non-exposure in the same unit on one hand and to the other unit on the other. Secluded patients needed 25% more medication than those agitated but non-secluded in the unit not using seclusion. The authors concluded that seclusion was not sufficient to treat agitation as more medication was needed. On the other hand, in the unit using seclusion, non-secluded patients needed less medication than those in the unit not using seclusion, suggesting that seclusion could reduce the dangerousness of the ward (46). Several prospective studies found an increased length of stay for secluded versus non-exposed patients (49–54). However, in Mattson and Sacks, this effect was not significant when focusing on patients less than 20 years of age (51).

In Vaaler et al., an RCT comparing seclusion in furnished and unfurnished rooms, no negative influence of furniture was found on effectiveness in terms of length of stay or symptom intensity (33).

Adverse Effects

In Bergk et al. and Huf et al., the two RCTs comparing seclusion versus restraint, no significant differences between the two interventions were found for adverse events during or after the intervention in terms of agitation, suicide attempt or self-harm, fracture, revival of previous traumatism, death, hypertension, or physical pain (32, 44). Although 40% of patients were stated to be at risk for PTSD after seclusion or restraint in Bergk et al.'s RCT (32), only one secluded and two restrained patients had symptoms fulfilling PTSD diagnosis at a 1-year follow-up (56). These authors concluded that this lower than expected incidence of PTSD may be due to natural resolution of symptoms or to the interviews conducted with the patients, which could have helped prevent PTSD (56).

When comparing seclusion and forced medication alone or combined, or seclusion with restraint, Georgieva et al. reported more adverse events for seclusion combined with restraint than for seclusion or forced medication alone or combined (47). In a prospective study involving involuntarily admitted patients, Steinert et al. found a bidirectional association between history of seclusion or restraint (without distinction) and life-threatening traumatic events (58). Thus, the authors concluded that, on the one hand, exposure to past traumatic events could enhance risk of victimization and revival of previous traumatism during inpatient treatment, and on the other hand, seclusion or restraint may cause re-experienced traumatism.

In Guzmán-Parra et al., comparing restraint to forced medication, more traumatic experiences were reported after restraint (57).

In three prospective studies, 31% to 52% of secluded patients reported hallucinatory experiences (60, 61, 70). In the

Kennedy study, 70% of the 52% reported hallucinations were present before seclusion and the increased intensity during the intervention was not sufficient to conclude that seclusion may cause the hallucinations (61). Hallucinating patients had longer seclusion time and more therapeutic interaction and medication than non-hallucinating patients (61).

In Ishida et al., a prospective study involving mechanically restrained patients receiving prophylaxis, Doppler ultrasound of lower extremities showed 11.6% incidence of asymptomatic deep vein thrombosis. The authors concluded, therefore, that there was probably underestimation of deep vein thrombosis in routine use of restraint (55). In an observational study, Fugger et al. found a 25% incidence of PTSD after mechanical restraint (29% at hospital discharge and 22% at 4 weeks after discharge) (35), while Whitecross et al. found a 47% incidence of PTSD after seclusion (59).

Subjective Outcomes

In Bergk et al. and Huf et al., patients' preferences between seclusion and restraint were not significantly different (32, 44). After 1-year follow-up in Bergk et al.'s RCT (32), 58% secluded or restrained patients reported positive emotions, but mechanical restraint was assessed more negatively than seclusion (56). In Sagduyu et al., a prospective study comparing seclusion versus restraint, 40% secluded and 20% restrained patients evaluated the intervention as beneficial (62). Additionally, 71% secluded and 89% restrained patients remembered past experiences (confinement or physical abuse), and 73% secluded and 81% restrained patients reported negative feelings (62).

In Georgieva et al., seclusion combined with restraint was associated with higher perceived coercion than seclusion or forced medication alone or combined (47). In Krieger et al., comparing various coercive measures (involuntary admission combined with seclusion, mechanical or manual restraint, forced medication or video monitoring) to non-exposure (voluntary admission in a closed ward without other coercive measure), more negative emotions were related to seclusion or restraint (36). Patients' understanding of use of seclusion or restraint increased during hospitalization, and seclusion was preferred among all coercive measures, while restraint was less accepted than the other measures (36). In Gowda et al., another prospective study comparing perceptions of coercion from seclusion, physical (mechanical or manual) or chemical restraint, involuntary treatment, and electroconvulsive therapy at admission and discharge, physical restraint was associated with a greater perception of coercion, followed by involuntary treatment, chemical restraint, seclusion, and finally electroconvulsive therapy (63).

In Sorgaard, an interventional study, seclusion was the main factor associated with perceived coercion compared to age, sex, forced medication, or length of stay (64). In Martinez et al., a cross-sectional study, seclusion was rated as needed in 56.2% of cases but was mainly associated with negative perception (62% overuse and 76.5% punishment) (65).

In Guzmán-Parra et al., restraint was associated with a greater perception of coercion than forced medication (57). In Wallsten et al., a prospective study evaluating adequate patient reports of mechanical restraint, four restrained patients reported not having been restrained, while eight non-restrained patients reported having been restrained. The cause of these eight false positive and four false negative reports was not clear, as it could be due to communication problems, memory failures (false memories for false positive) or emotional traumatic reactivation (37). In this study, the authors raised the question of the subjectivity of patients' self-reports of coercion.

After seclusion or restraint (without distinction), patients reported a feeling of clinical improvement (66), as well as dissatisfaction, denial of necessity or beneficence, and insufficiency of dialogue with staff (67).

In Stolker et al., a prospective study evaluating the influence of the ward environment on perceptions of seclusion among secluded patients, perceived coercion was lower in cases of previous stays in multi-bed rooms compared to stays in single rooms (69). The authors concluded that the subjective effect of seclusion on patients could depend on the ward environment. In several prospective studies, seclusion was positively evaluated as safe and secure (54, 70) and slightly necessary (52, 70, 71). In three studies, patients reported feeling better after seclusion (53, 70, 71). In Mann et al., secluded patients reported positive feelings of constant attention and care from staff (54). In Keski-Valkama et al., more therapeutic interaction was demanded by secluded patients (68). Importantly, negative emotions were reported in most studies (70–72). Patients frequently reported seclusion as not helpful (46, 61, 71) or as punishment, ranging from 54% to 73% (68, 70, 72).

In Fugger et al., an observational study comparing patients' versus physicians' perceptions of mechanical restraint (during and after intervention), patients' ratings showed greater perceived coercion but less memory for the event, and greater feelings of being healthy and more acceptance than physicians expected (35).

Quality Assessment and Risk of Bias

RCTs (Revised Cochrane Risk of Bias Tool) (31)

The three included RCTs did not use true allocation. Bergk et al. used an optional randomization (32); Huf et al. could re-allocate some patients when stakeholders evaluated seclusion as not efficient (44). In Vaaler et al., allocation depended on patient number in the unit or previous admittance (on equal headcount) (33). Blinding was not possible due to the characteristics of the measures (seclusion, restraint, or no coercive measure). Selected studies published significant and non-significant results with beneficial and negative outcomes. Missing data, dropout, and reasons for refusing to participate were well documented in the selected studies. We found no identifiable selective outcome reporting in included studies for outcomes, time points, subgroups, or analyses, but few elements were available for detection of potential selective reporting. Registration of trials before study initiation was indeed performed only for Huf et al. (73). For this RCT, predetermined outcomes were identical to the final reported outcomes (44). Intention-to-treat analysis was respected in Huf et al. and Vaaler et al. (33, 44). In Bergk et al., statistical analyses were conducted without six drop-out patients (32). Intention-to-treat analysis was, therefore, not fully respected. Concerning other potential sources of bias, Huf et al. postulated that restraint is more restrictive than seclusion and concluded by suggesting beginning with seclusion (44). The starting hypothesis seems to be identical to the conclusion and, in our opinion, could be a tautology. In Vaaler et al, the authors compared the influence of interior design on seclusion effectiveness measured as symptom intensity and global functioning during and after intervention (33). However, in our view, the study design seems to be unclear. The aim of the study was to detect differences between patients secluded in furnished or unfurnished rooms. Outlined this way, the design seems to be a superiority study. However, the authors stated in the results and discussion that negative effects of furnished rooms on seclusion effectiveness could not be significantly found due to lack of power. Described this way, the null hypothesis that furnished seclusion rooms have a negative impact on seclusion effectiveness could not be rejected. This formulation would correspond to a non-inferiority design. Thus, there seems to be a discrepancy between predetermined study design and results interpretation. This discrepancy creates questions as to the adequacy of the conclusion stating that furnished rooms seem to have no negative effect on seclusion effectiveness. According to the revised Cochrane Risk of Bias Tool (31), and despite following adequate methodological guidelines, the three included RCTs could be assessed as having a high risk of bias, due most notably to non-exhaustive allocation and no ability to use blinding.

Prospective Observational Studies (USPSTF tool) (41, 42)

The included prospective studies reported the methods for group constitution and described the group characteristics for assessing comparability. Some studies did not search for confounding factors when an association was found between variables. For example, in several prospective studies, potential confounders were not stated for seclusion or restraint and length of stay (49, 50) or quality of life (48). Some studies had no control group for comparison of results (35, 54, 59, 71, 72). When present, others did not perform subgroup or quantitative analysis for significant differences between groups (62, 65). For some cohort or cross-sectional studies, lack of power and difficulties achieving rejection of the null hypothesis were a problem (45). Selected studies published significant and non-significant results with beneficial and negative outcomes. Missing data, dropout, and reasons for refusing to participate were well documented in the selected studies. We found no identifiable selective outcome reporting in included studies for outcomes, time points, subgroups, or analyses, but few elements were available for detection of potential selective reporting. Registration of trials before study initiation was indeed not performed for included studies, and we could not compare predetermined outcomes with final reported outcomes. Heterogeneity of seclusion and restraint definitions cause difficulties for assessing comparable outcomes. For some studies, seclusion meant open or locked rooms (49, 65), whereas in most studies, seclusion was defined as a locked room from which the patient cannot get out on his own. For other studies, physical restraint could be either mechanical or manual and sometimes both (35, 55, 57). Gowda et al. described the difference between chemical restraint (used during emergencies) and involuntary medication (in case of leverage) (63), while most studies referred to the two categories as involuntary (or forced) treatment. These authors also distinguished between subjective and perceived coercion, whereas most studies used one or the other without differentiation (63).

DISCUSSION

Summary of Main Findings

This review synthesizes a wide range of information into an original overview on coercive measures in adult psychiatric patients. Thirty-five articles addressed the search question on beneficial and negative effects of seclusion and restraint in adult psychiatry. The identified literature strongly suggests that seclusion and restraint have deleterious physical or psychological consequences. The incidence of PTSD after seclusion or restraint ranges from 25% to 47%, which is not negligible (35, 59), especially in patients with past traumatic events (58). The main diagnoses associated with the use of seclusion or restraint in the selected articles are schizophrenic, schizoaffective, or bipolar, currently manic disorders. Subjective perception has high interindividual variability and can be positive, with feelings of safety, help (54), clinical improvement (53, 66), or evaluation as necessary (52, 71). However, seclusion and restraint are mostly associated with negative emotions, particularly feelings of punishment and distress (62, 70, 72). Conclusions on protective or therapeutic effects of seclusion and restraint are more difficult to draw. Our results provide little evidence for these outcomes, but further research is clearly necessary. Objective effectiveness of seclusion and restraint seems to be comparable in terms of needed medication, symptom intensity, and adverse effects (32, 34, 44). Compared to non-exposure, they have deleterious physical and psychological consequences, like PTSD, revival of previous traumatism, DVT, increased length of stay, hallucinations, and negative emotions (47, 57, 64). Seclusion seems to be better accepted than other coercive measures, such as forced medication, while restraint seems to be less tolerated (36, 63). A reason could be that seclusion is perceived as a "non-invasive" method (63). Therapeutic interaction seems to influence perceptions of coercion and could help to avoid negative effects when coercive measures are not avoidable (54, 67, 68).

Overall Assessment of the Quality, Completeness and Applicability of Evidence

We chose to include a broad range of outcomes for effects of seclusion and restraint in adult psychiatry. We found 35 relevant articles with significant or exploitable results, but also a high heterogeneity with respect to the study designs and the explored outcomes. There are only three published RCTs, which point out the challenge of obtaining usable data to prove clinical efficiency and to identify benefits or harms of seclusion and restraint on patients with severe mental disorders. In an era of evidence-based medicine, it shows that daily clinical practices can still be traditional habits, more than therapeutic methods proven to be effective. This finding does not mean that coercive methods are not necessary in certain cases, but in the context of limiting human rights and potential deleterious consequences, the limitations of the evidence base should invite medical and nursing staff to question their practices and to use them with caution and with hindsight when the decision (as a last resort) to use them is made.

Methods for studying effects of coercion in adult psychiatry can be difficult to design. According to the Cochrane Risk of Bias Tool (31) and despite following adequate methodological guidelines, the three included RCTs could be stated as having a high risk of bias (32, 33, 44). However, due to the nature of the topic, it is very difficult to avoid these biases, and the realization and publication of studies are an excellent example of how to deal with the inherent methodological constraints. On the other hand, prospective cohort or cross-sectional studies can have difficulties achieving significant results or statements of causal inference. Lack of power, loss to follow-up, and presence of confounding factors are problems frequently faced in these studies (45, 48). This overview of evidence assessment outlines the difficulties in realizing clinical trials on this subject. Despite the complexities of the issue and the associated challenges, it seems relevant to give an assessment of the current state of the evidence related to seclusion and restraint in adult psychiatric patients, because of the fundamental aspects and the consequences inherent in these measures.

Comparison With Other Studies and Reviews

The previous review most comparable to ours was published by Sailas and Fenton in 2000, with a last update in 2012 (19). The authors found two RCTs awaiting publication meeting their search criteria, with no evidence of efficacy of seclusion and restraint. Our search criteria applied to the literature published until 2018 allowed us to include 35studies, 3 of which were RCTs. However, even this broader approach could not establish strong evidence of efficacy of seclusion and restraint. Heterogeneity of study designs, studies outcomes, and settings did not allow drawing clear conclusions on beneficial effects of these measures. Overall, this overview shows a very limited progress in establishing efficacy of seclusion and restraint. Thus, it supports the current trend of developing further research and political and juridical regulations, as well as reduction programs targeting these coercive measures.

With our search strategies, we included outcomes like staff attitude or effects of seclusion or restraint on staff, but no article seemed to study this outcome as a direct effect of coercion. Studies on staff perception of seclusion or restraint were found (74, 75) but seemed to evaluate opinion on the topic or risk factors for use of coercive measures more than direct effects of seclusion or restraint. In our opinion, they could not help address the search question.

Another source of limitation when studying coercion is the heterogeneity of definitions. We saw some differences when assessing the risk of bias. In the included literature, we found no difference made between coercion as a measure against the patient's will and a limitation of freedom of movement, which are two different elements of a coercive measure (1). To achieve a precise and adequate study of coercive measures, it would be important to specify and clarify the implicit dimensions of coercion.

Some studies are frequently cited in articles or reviews. Of those studies, we chose not to include Soliday 1985 and Wadeson and Carpenter 1976 because of thematic analysis of open interviews (76, 77). From our perspective, results did not address our search question regarding objective effect measures. One of the first articles on the topic is Gutheil 1978 that theoretically conceptualized the effects of seclusion as therapeutic (26). This concept has been quoted as a hypothesis in most studies and reviews (49), including Fisher 1994 (2) and Mason 1992 (78), despite the fact that these studies include few evidence-based results.

Some other studies could have been relevant for our search question but did not meet inclusion criteria. For example, Nawaz et al. 2007 conducted an RCT comparing the effectiveness of standard restraint and safety nets but in a geriatric population (79). Generalization of results to the adult psychiatric population seemed difficult, and therefore we did not include the study. Mion et al. 1989 studied physical restraint in a mixed adult, but mainly geriatric, population (80). In our opinion, no conclusion for adult psychiatric patients could be drawn, and we chose not to include the study.

Implications for Clinical Practice

Concerning clinical practice, Vaaler et al. found no influence of a furnished seclusion room on seclusion effectiveness (33). This study suggested that the settled norm (strictly unfurnished room for seclusion) could be reassessed, and habits could change in ways more agreeable to patients. The reported adverse effects should be taken into account in clinical practice, mainly when deciding the accuracy of using coercive measures on a patient. The incidence of PTSD after seclusion and restraint was not clearly stated and varied widely (from 25% to 47%) (35, 47, 57–59). Steinert et al. and Georgieva et al. found that seclusion and restraint may cause revivals of previous traumatism (47, 58). Difficulties comparing studies are undeniable, but these results show a trend toward potential traumatic experiences after seclusion or restraint. Palazzolo and Kennedy et al. have also reported hallucinatory experiences during seclusion (60, 61), in which occurrence mechanism is not clearly stated. Seclusion and restraint should therefore be used with caution, and staff should closely monitor development of post-traumatic symptoms or hallucinations. Following the hypothesis that the prevalence of DVT is likely to be underestimated under restraint (55), new protocols should be elaborated to prevent these negative effects of restraint when clinical circumstances require its use. Seclusion could be better accepted than restraint (36, 63). Preferred use of seclusion could be a possible change to implement in clinical practice, but it should still be used as a last resort method.

On the other hand, diagnostic variations could be a relevant factor in the use of seclusion or restraint. In the selected studies, patients were more frequently diagnosed with schizophrenic, schizoaffective, or bipolar, currently manic disorders. These results are consistent with the recent literature that reports associations between schizophrenic or organic mental disorders and risk of use of seclusion (81) and coercive measures generally (8, 22, 82). Martin et al. and Miodownik et al. found an augmented risk of seclusion and restraint for patients with schizophrenic disorders (83, 84), and Beghi et al. an increase of restraint for the same diagnoses (27). These associations have implications in clinical practice: psychotic disorders are known to often be chronic and associated with recurrent decompensation. The type of diagnosis could be considered as a moderator and risk factor of long-term use of coercion. Management of schizophrenic and psychotic disorders generally (including mania) should maybe be reassessed in the light of an augmented risk for the use of coercion. Therefore, the need for development of alternatives to coercive measures is a priority, as well as structured research to better understand efficiency of coercive measures and in which context they could be applied. In addition, this research should consider the subjective preference of patients (32).

Subjective perception of seclusion and restraint is mainly associated with negative emotions, like loneliness, helplessness, and feeling of punishment (36, 65, 68). Therapeutic interaction seems to influence perceptions of coercion and could therefore be of importance to help patients coping with these feelings and enhance the therapeutic effect despite the coercive aspect of the measure (85, 86). In several prospective studies, secluded or restrained (without distinction) patients reported feelings of constant attention and care from staff (54), asked for more interaction (68), or evaluated the latter as insufficient (67). Our hypothesis is that interaction with staff permits elaboration of the therapeutic relationship, which mediates treatment outcomes and particularly efficacy (85, 86). This finding suggests that possibilities of patient-staff interactions should be reinforced to develop therapeutic relationships and secondarily improve the effects and subjective perceptions of coercion. The place and meaning of the therapeutic relationship during coercion could therefore also be explored in future research. Helping to develop a secure therapeutic relationship for the patient could be an alternative to the use of seclusion or restraint, as relations as well as measures limiting liberty of movement have a containment function.

Implications for Research

Concerning research, our literature review clearly shows that significant results for effects of seclusion and restraint in adult psychiatry remain difficult to obtain. A reason seems to be the disparity in the topic of comparison as well as the complexity of elaborating study designs for agitated patients. In this review, we focused on prospective studies that allow identification of effects of coercive interventions. However, other approaches have been used in research on coercive measures but may be better suited to assess different outcomes. In the following paragraphs, we propose a brief review of different available methodologies and their appropriateness depending on the outcome of interest (**Figure 2**). In our opinion, specifying these differences is worthwhile for further clinical research in order to adapt the methodology to specific research questions and therefore obtain reliable and valid results. Further research on coercive measures is indeed needed, concerning epidemiology, efficacy, and risk prediction. Its purpose should be the elaboration of seclusion and restraint reduction programs and development of alternatives to their use.

Retrospective methodology is frequently used to determine risk factors and predictors of seclusion and restraint (16, 87). A retrospective methodology may however not be adequate for determining the effects of these measures as it can provide associations among risk factors but does not provide significant and reliable associations among effects of an intervention (**Figure 2**). It seems to us that methodology can greatly influence the significance of the final results.

Another current tendency emphasizes that coercive measures, particularly seclusion and restraint, are last resort methods and, therefore, should be reduced as much as possible. Accordingly, recent articles and reviews focus on reduction programs that have mainly been evaluated with outcomes directly reflecting coercive events themselves, in particular frequency, duration, and other parameters (3, 25). This approach has to be clearly differentiated from our question about the consequences of seclusion and restraint (**Figure 2**). It does not mean that direct study of coercive measures should be discarded as they are still frequently used and are needed as a last resort for difficult situations in clinical practice when no other alternative remains.

In this review, we focused on prospective studies addressing the consequences of seclusion and restraint (**Figure 2**). Scientific evidence of benefit or harm should ideally be investigated with randomized controlled studies (17, 88). However, concerning seclusion and restraint, and coercive measures in general, the feasibility of such studies is controversial (20). Despite an adequate method, the three published RCTs show difficulties in achieving easily interpretable results without high risk of bias. This observation raises the question of whether choosing an RCT design is adequate when studying the effects of coercion. One reason for the lack of data when using an RCT design could be that it is deemed dangerous to conduct a randomized controlled trial of seclusion or restraint. This makes the situation rather similar to that which exists in lethal diseases, for example, surrounding the Ebola outbreaks that raised ethical discussion on feasibility and adequacy of using RCT design when studying efficacy for candidate Ebola vaccines (89). In this ethical discussion, the authors were in favor of using RCT despite methodological difficulties and dangerousness, arguing with four often neglected factors (benefits to non-participants and participants once a trial is over, participants' prospects before randomization, and the near-inevitable disparity between arms in any randomized controlled trial) (89). When studying seclusion and restraint, the second and third factors seem not to be directly applicable, in particular due to the coercive aspect and implementation against the patient's will of the measure. These elements open a wide range of questions that would require supplementary reflection and discussion in further researches.

Cross-sectional studies are also often used in research on coercive measures, but investigation of benefits and harms is very limited with this study design. In this context, well-conducted

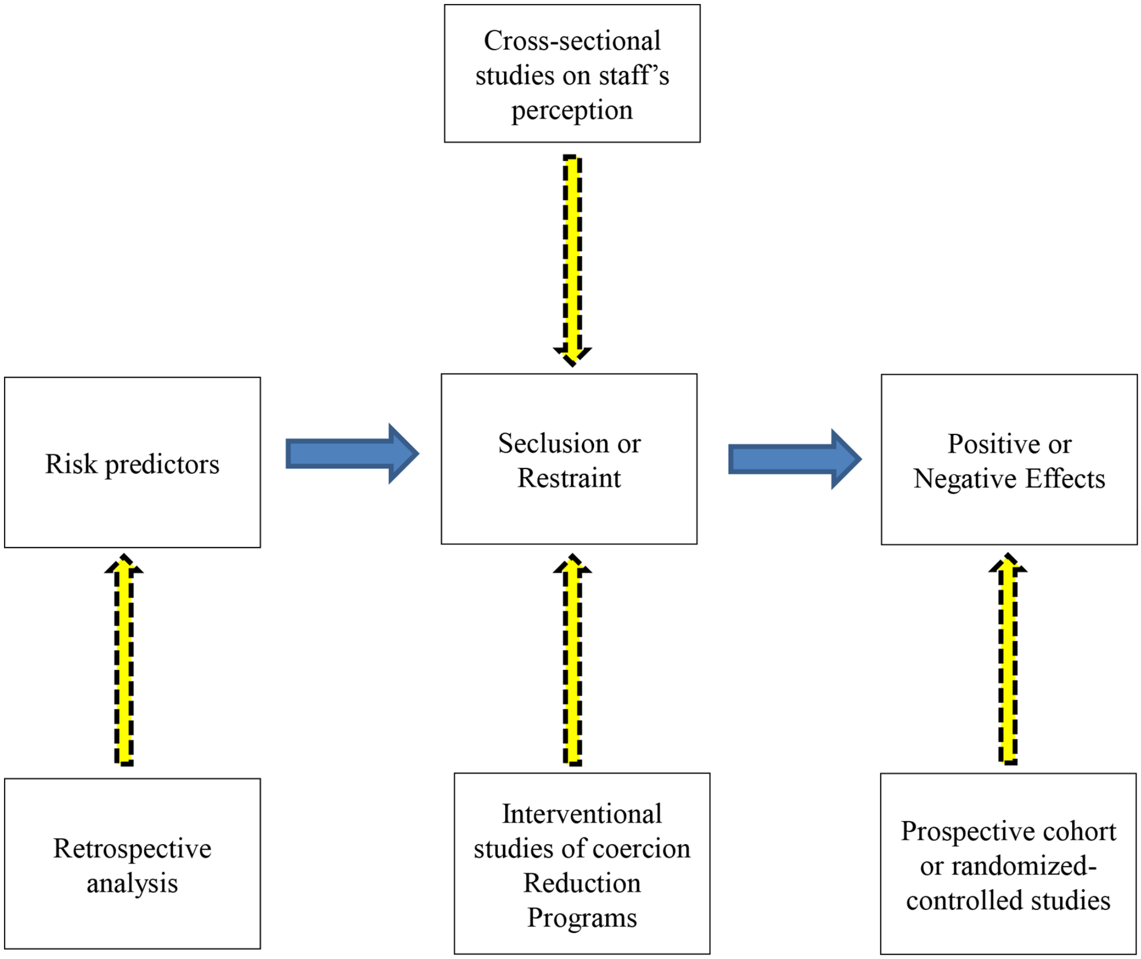

FIGURE 2 | Methodoligical differences in studying risk predictors and effects of seclusion and restraints.

prospective cohort studies seem to be more feasible than RCTs and should produce meaningful results for effects of seclusion or restraint, even though the evidence level will be reduced in comparison to RCTs. This design could allow collection of more useful results and therefore have greater impact on clinical practice changes.

Strengths and Limitations

The main strength of our review is the broad and systematic search for effects of seclusion and restraint in terms of outcomes and methodology. To our knowledge, this review is the first to synthesize this kind of wide range of information and produce an original overview on the topic, with inclusion of beneficial and negative objective effects and patients' subjective perception of seclusion and restraint. This review also examined the methodology used for studying coercive measures. To our knowledge, this aspect has thus far not been considered in the literature and could clarify future research perspectives.

Synthesizing assessment of evidence from individual studies highlights some general problems in evaluating the effects of seclusion and restraint in adult psychiatry. Due to heterogeneity of study methods and settings through populations, interventions, comparators, and explored outcomes, synthesizing results and generalization to global conclusions could be at high risk of analysis bias and lead to inaccurate conclusions. For this reason, we tried to compare analogous studies between them and identify some perceptible trends rather than aggregate observations. These trends concern methodology for studying coercive measures on the one hand and effects of seclusion and restraint in adult psychiatry on the other hand.

The width of the conducted search and the selected outcomes are not only strengths but also limitations of our review, as the heterogeneity of the results clearly limits our capacity to draw definitive conclusions. Including objective and subjective outcomes in the same review is a new approach but again renders the integration of findings more difficult. Due to this inclusion of a broad range of outcomes, we had to limit the review to coercive measures limiting freedom of movement (seclusion and restraint). The exclusion of other types of coercion like involuntary admission or treatment is clearly another limitation of this review, which does not allow us to draw general conclusions about coercive measures. Searching for effects of the two other formal coercive measures should be considered in further research.

Concerning the risks of meta-biases (43), various databases and references of broad reviews on the topic were screened to retrieve any gray literature or unpublished studies that met inclusion criteria. Two conference abstracts were found that presented studies otherwise published and therefore were excluded. Non-English language articles were also included to limit these biases. The risk of selective reporting of outcomes and/or results is certainly elevated as no standard for outcomes exist and registration of trials was not performed except for Huf et al. (44). Overall, these limitations clearly point to the need for more original research on the consequences of coercive measures.

CONCLUSIONS

Effects of seclusion and restraint in adult psychiatry include a wide range of outcomes, and a broad variety of designs has been used to study them. Despite its clear limitations, the identified literature strongly suggests that seclusion and restraint have deleterious physical or psychological consequences. The incidence estimates of PTSD after seclusion or restraint vary from 25% to 47%, which is clearly not negligible, especially for patients with past traumatic experiences. Subjective perception of seclusion and restraint seems to depend on interindividual variability but is largely negative and distressful. No significant differences between them were found in terms of effectiveness or adverse effects. The main negative consequences reinforce the notion that seclusion and restraint should be used with caution and as a last resort method. Patients should be given the opportunity to take part in the decision whenever possible, and their preferences should be taken into account. The therapeutic interaction and relationship could be a main focus for the improvement of effects and subjective perception of coercion. In terms of methodology, studying coercive measures remains difficult and applicability of the evidence is still limited. Well-conducted prospective cohort studies could be more feasible than RCTs for achieving meaningful results on the effects of coercion. In the context of current research on coercion reduction, the study of effects of coercion provides workable baseline data and potential targets for interventions and, thus, a strong motivation for the development of coercion reduction programs.

AUTHOR CONTRIBUTIONS

MC contributed to development of the search question and strategies, data collection, and analysis, and to the main part of manuscript redaction. SH participated in development of the search question and strategies. SK supervised advancement of the project and contributed to data selection. OS supervised advancement of the project and participated in development of the search question, strategies, and data extraction. The four authors contributed to manuscript redaction and accepted the present manuscript.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyt.2019.00491/full#supplementary-material

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Compulsory Admission to Psychiatric Wards–Who Is Admitted, and Who Appeals Against Admission?

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Background: When persons with a mental illness present a danger to themselves or others, involuntary hospital admission can be used to initiate an immediate inpatient treatment. Often, the patients have the right to appeal against compulsory admission. These processes are implemented in most mental health-care systems, but regulations and legal framework differ widely. In the Swiss canton of Basel-Stadt, a new regulation was implemented in January 2013. While the current literature holds some evidence for factors associated with involuntary admission, knowledge on who uses the right to appeal against admission is sparse.

Aims: The study aims to examine if specific sociodemographic and clinical characteristics are associated with involuntary admission and with an appeal against the compulsory admission order.

Method: Routine clinical data of all inpatient cases admitted during the period from January 2013 to December 2015 at the Psychiatric University Hospital Basel were extracted. Generalized estimating equation (GEE) analyses were used to examine the association of sociodemographic and clinical characteristics with “involuntary admission” and “appeal against compulsory admission order.”

Results: Of the 8,917 cases included in the present study, 942 (10.6%) were admitted involuntarily. Of these, 250 (26.5%) lodged an appeal against the compulsory admission order. Compared with cases admitted on a voluntary legal status, cases admitted involuntarily were older and were admitted more often during the nighttime or weekend. Moreover, involuntarily admitted cases had more often a principal diagnosis of a schizophrenia spectrum disorder. Patients from cases where an appeal was lodged were more often female, had more often Swiss nationality, and were more often diagnosed with schizophrenia spectrum disorder.

Conclusion: Despite legal changes, the frequency of involuntary admissions in the observed catchment area seems to be relatively stable across the last 20 years. The percentage of appeals has decreased from 2000 to 2015, and only comparably few patients make use of the possibility to appeal. Better knowledge of the regulations, higher social functioning, and lower insight into illness might be associated with a higher probability of lodging an appeal. Future research should examine if specific patient groups are in need of additional assistance to exert their rights to appeal.

Keywords: involuntary treatment, coercion, human rights, psychiatry, Switzerland

INTRODUCTION

In emergency situations with impending danger to patients or others, and in chronically ill patients—when leaving them untreated would pose a danger to themselves or others—psychiatry has to exert a difficult dual mandate, balancing mental health care for the individual patient with his right to autonomy and the protection of others (1, 2). In the context of involuntary admission and of involuntary treatment, this concept of beneficial coercion is currently critically discussed (3, 4).

These matters are complicated through the rising awareness that involuntary measures in psychiatry can have adverse effects (4, 5): For example, closed-door settings may increase the risk of escalation and aggression (4), involuntary measures may be (re)traumatizing for the patients (6), and decreased therapeutic atmosphere and patient–therapist relationship (7, 8) may have lasting detrimental effects on a patient's motivation for treatment. Furthermore, even though involuntary measures like compulsory admissions may be well accepted by a majority of the public (9), they constitute a source for stigmatization of psychiatry and its patients with all accompanying detrimental effects (10). In addition, involuntary measures may not always provide the intended protection their use is based on: For example, it has been shown that treatment in a closed-door setting does not necessarily have the previously assumed positive effects on aggression, suicidality, and absconding (11–13).

Often, decisions become increasingly difficult because not only psychiatric but also legal and ethical aspects have to be considered. While structural prerequisites differ widely on international and even local levels (14–20), there is an ongoing discourse in current psychiatric research marking minimal standards for the decision to involuntarily admit mentally ill persons to inpatient treatment. In particular, the UN Convention on the Rights of Persons with Disabilities (CRPD) has promoted a critical discourse, stating that "the existence of a disability shall in no case justify a deprivation of liberty" (21). There also seems to be an agreement across the published literature that compulsory measures in psychiatry have to be considered only as measures of last resort when no other less restrictive alternatives are available (4, 22, 23). Accordingly, legal and structural regulations for compulsory measures have high requirements regarding assessment of the situation, documentation, quality control, and monitoring and, in general, include the right of the patients to appeal against decisions (3, 24, 25).

The Psychiatric University Hospital of Basel-Stadt follows a long-term strategy to promote open-door settings in psychiatry (23) and to decrease compulsory measures and stigmatization (10, 26, 27). Accompanying research could show that in the years 2011 onward, the frequency of seclusion and involuntary treatment could be decreased (22, 28–30) and that therapeutic atmosphere and patient satisfaction could be increased (7, 31) without noticeable detrimental effects on patients' and public safety and the provision of mental health-care support (32). In addition, a new legal framework concerning involuntary admission was implemented beginning in January 2013. However, until now, the effects on involuntary admissions and on appeals against these admissions have not been a focus of research, and, in particular, literature concerning predictors of patients' appeals against involuntary admission in general is sparse (33).

AIM OF STUDY

The current study aimed to examine the frequency of involuntary admissions and of appeals against them and if specific sociodemographic and clinical characteristics are associated with involuntary admission and appeals against the compulsory admission order. Based on the published literature, we hypothesized that known predictors of violence, self-harm, and poor insight are associated with involuntary admission and that admissions outside of regular working hours are associated with involuntary admission and the probability of appeals.

MATERIALS AND METHODS

General Framework

The data examined in the current analyses were gathered during a longitudinal hospital-wide 3-year observational study. It was conducted at the Department of Adult Psychiatry, Psychiatric University Hospital of Basel-Stadt (UPK). This hospital provides psychiatric in- and outpatient health care for about 190,000 people in Basel and the surrounding areas. The hospital has an inpatient treatment capacity of 250–260 beds on 15 wards. All wards provide diagnosis-specific psychiatric and psychotherapeutic treatment. While there are other specialized psychiatric hospitals and institutions in the canton, the UPK is the only institution for the compulsory admission of inpatients. In addition, basic health care in Switzerland covers only treatment in the home canton. Thus, nearly all involuntarily admitted psychiatric patients from the hospital's catchment area are admitted at the UPK.

Legal Framework

The legal framework concerning compulsory admission and appeals against admission is formed by regulations from cantonal and federal civil law (Swiss Civil Code, ZGB) and has been revised multiple times in the past. In 1978, the Swiss federal law was adapted to comply with the European Convention on Human Rights (ECHR), and the basis for a *Confinement to Provide Medical Aid*

("Fürsorgerischer Freiheitsentzug," FFE; Art. 397a–397f ZGB) was created and applied beginning in January 1981. The latest revision has been carried out in January 2013 with the establishment of a *Placement to Provide Medical Aid* ("Fürsorgerische Unterbringung," FU; Art. 426–439 ZGB). The legal basis in cantonal civil law is provided by the *Law for the Protection of Children and Adults* ("Kindes- und Erwachsenenschutzgesetz", KESG; last revised on 01.01.2013) (25).

Three main pathways can lead to compulsory admission (24): 1) When a person is deemed as being in need for mental health care despite objecting to treatment, a specially qualified public health officer ("Amtsarzt") has to assess the case. If i) there is a mental illness or mental impairment, ii) an impending danger to the person himself or to others, or a severe case of—e.g., physical or social—neglect (34), iii) there is an indication for inpatient treatment in a psychiatric clinic, iv) there is no other less restrictive measure available and commensurability is preserved, the public health officer initiates involuntary hospitalization for up to 6 weeks (25). 2) Following the principles outlined previously, the *Department for the Protection of Children and Adults* ("Kindes- und Erwachsenenschutzbehörde", KESB)—normally reacting to prior notice about dangerous situations—may initiate involuntary treatment with no limitations concerning the duration of treatment. 3) If a person who has voluntarily come into psychiatric treatment chooses to be dismissed, the treating psychiatrist may retain the person in treatment for up to 72 h if he presumes that the principles outlined previously are fulfilled. Within this time period, the patient either has to be dismissed or a public health officer has to assess if, indeed, all requirements for involuntary admission are fulfilled.

Independently from the pathway leading to compulsory admission, all patients have the right to appeal against the decision to commit them involuntarily. Hospital staff keeps the patients informed about their rights, assists patients with the procedure to appeal, or appeals on behalf of the patient if there are any signs that the patient objects to being hospitalized but is not able to appeal herself/himself. A specialized court ("Gericht für Fürsorgerische Unterbringungen", FU-Gericht) including a presiding judge, an external psychiatrist, and an advocate for the patient disputes the case within a maximum time of 10 days after the appeal is issued and decides if the inpatient treatment can be terminated or if the decision for an involuntary hospitalization is upheld. The patient may appeal to the Swiss federal court ("Bundesgericht") if there are objections to this decision.

Study Population

For the current study, we included all inpatients admitted to the Department of Adult Psychiatry of the UPK between 01/2013 and 12/2015. Due to legal requirements, all admitted patients were aged 18 and older. No further inclusion or exclusion criteria were defined to ensure a naturalistic sample.

Documentation and Management of Clinical Data

All data are recorded electronically by the responsible psychiatrists and psychologists using the provided clinical documentation system in its current version (Medfolio, Nexus AG, Villingen-Schwenningen, Germany). A broad data set has to be documented to ensure an optimal quality of clinical work and due to legal requirements of the *Swiss Federal Office for Statistics* ("Bundesamt für Statistik", BfS) and the *Swiss National Association for Quality Development in Hospitals and Clinics* (ANQ). This includes data on age, gender, nationality, marital status, housing situation, occupational situation, and principal diagnosis according to International Classification of Diseases, 10th revision (ICD-10) (35) at discharge. Type of admission was categorized as "voluntary" and "involuntary," and the decision to appeal against the compulsory admission order was recorded as "yes" or "no." In addition, the time of hospital admission was extracted from the patient files. We classified cases as admitted "within regular working hours" if admitted from Monday to Friday between 8 am and 4:59 pm. Cases admitted at any other time were classified as admitted at "nighttime or [during the] weekend."

All data were recorded during routine treatment and anonymized during extraction. Thus, according to current legal regulation, no approval from the local ethics committee was required for the current study. The current investigation complies with all national and international regulations, as well as with the Declaration of Helsinki in its current revision.

Statistical Analyses

We investigated the association of sociodemographic and clinical characteristics with type of hospital admission applying a panel data analysis using generalized estimating equations (GEE) with the binary response variable "type of admission" (voluntary vs. involuntary) and age, sex, nationality, marital status, housing situation, occupational situation, time of hospital admission, and F0, F1, F2, and F3 diagnoses as predictors. Due to the dependency of our observations within subjects, we chose compound symmetry as our covariance structure in the model (36). We repeated this analysis for all involuntarily admitted cases with "appeal against compulsory admission order" (yes vs. no) as the binary response variable.

Multiple imputation was used to estimate and compensate missing values for GEE analyses (37). An alpha level of 0.05 determined statistical significance, and data analysis was carried out using IBM SPSS Statistics for Windows, Version 25.0 (released 2017; IBM Corp., Armonk, NY).

RESULTS

We included 8,917 cases in the present study (equaling a mean of 2,972 cases per year), who received inpatient treatment during the observation period in our clinic. Across all cases, 7,975 (89.4%) were admitted on a voluntary legal status, and 942 (10.6%) were involuntarily admitted. Of these, a total of 250 (26.5%) lodged an appeal against the compulsory admission order. Demographic and clinical descriptive information is presented in **Table 1**.

Of all included cases, the top four principal psychiatric diagnoses were mood disorder (30.1%), substance use disorder (23.0%), schizophrenia spectrum disorder (19.0%), and neurotic/stress-related/somatoform disorders (12.6%). However, in cases with involuntary admission, the top four primary ICD-10 diagnoses were schizophrenia spectrum disorder (38.3%), substance use

TABLE 1 | Demographic and clinical descriptive information in voluntarily and involuntarily admitted patients and in patients using or renouncing their right to appeal the compulsory admission order.

Characteristic	Type of admission			Appeal against compulsory admission order		
	Voluntary	**Involuntary**	**Total**	**Yes**	**No**	**Total**
	***n* = 7,975**	***n* = 942**	***n* = 8,917**	***n* = 250**	***n* = 692**	***n* = 942**
Age (years)	45.61	48.36	45.9	47.77	48.57	48.36
Gender						
Male	3,829 (48.0%)	454 (48.2%)	4,283 (48.0%)	94 (37.6%)	360 (52.0%)	454 (48.2%)
Female	4,146 (52.0%)	488 (51.8%)	4,634 (52.0%)	156 (62.4%)	332 (48.0%)	488 (51.8%)
Nationality						
Other	2,443 (30.6%)	306 (32.5%)	2,749 (30.8%)	62 (24.8%)	244 (35.3%)	306 (32.5%)
Switzerland	5,532 (69.4%)	636 (67.5%)	6,168 (69.2%)	188 (75.2%)	448 (64.7%)	636 (67.5%)
Marital status						
Married	1,607 (20.2%)	102 (10.8%)	1,709 (19.2%)	19 (7.6%)	83 (12.0%)	102 (10.8%)
Separated/divorced	1,644 (20.6%)	153 (16.2%)	1,797 (20.2%)	45 (18.0%)	108 (15.6%)	153 (16.2%)
Widowed	341 (4.3%)	46 (4.9%)	387 (4.3%)	9 (3.6%)	37 (5.3%)	46 (4.9%)
Unmarried	3,960 (49.7%)	422 (44.8%)	4,382 (49.1%)	115 (46.0%)	307 (44.4%)	422 (44.8%)
Unknown	423 (5.3%)	219 (23.2%)	642 (7.2%)	62 (24.8%)	157 (22.7%)	219 (23.2%)
Housing situation						
Private residence	2,965 (37.2%)	306 (32.5%)	3,271 (36.7%)	102 (40.8%)	204 (29.5%)	306 (32.5%)
Living together with others	3,367 (42.2%)	214 (22.7%)	3,581 (40.2%)	59 (23.6%)	155 (22.4%)	214 (22.7%)
Assisted living	531 (6.7%)	80 (8.5%)	611 (6.9%)	10 (4.0%)	70 (10.1%)	80 (8.5%)
Hospitalized or in penal institution	323 (4.1%)	64 (6.8%)	387 (4.3%)	13 (5.2%)	51 (7.4%)	64 (6.8%)
Homeless	222 (2.8%)	45 (4.8%)	267 (3.0%)	13 (5.2%)	32 (4.6%)	45 (4.8%)
Other	73 (0.9%)	20 (2.1%)	93 (1.0%)	6 (2.4%)	14 (2.0%)	20 (2.1%)
Unknown	494 (6.2%)	213 (22.6%)	707 (7.9%)	47 (18.8%)	166 (24.0%)	213 (22.6%)
Occupational situation						
Employed	1,591 (19.9%)	73 (7.7%)	1,664 (18.7%)	18 (7.2%)	55 (7.9%)	73 (7.7%)
In education or civilian or military service	268 (3.4%)	11 (1.2%)	279 (3.1%)	6 (2.4%)	5 (0.7%)	11 (1.2%)
Other types of regular work	366 (4.6%)	32 (3.4%)	398 (4.5%)	10 (4.0%)	22 (3.2%)	32 (3.4%)
Retirement/disability pension	2,886 (36.2%)	378 (40.1%)	3,264 (36.6%)	97 (38.8%)	281 (40.6%)	378 (40.1%)
Unemployed	2,061 (25.8%)	170 (18.0%)	2,231 (25.0%)	45 (18.0%)	125 (18.1%)	170 (18.0%)
Unknown	803 (10.1%)	278 (29.5%)	1,081 (12.1%)	74 (29.6%)	204 (29.5%)	278 (29.5%)
Time of hospital admission						
Nighttime or weekend	2,619 (32.8%)	621 (65.9%)	3,240 (36.3%)	160 (64.0%)	461 (66.6%)	621 (65.9%)
Regular working hours	5,356 (67.2%)	321 (34.1%)	5,677 (63.7%)	90 (36.0%)	231 (33.4%)	321 (34.1%)
Principal diagnosis (ICD-10)						
F0 Organic, including symptomatic, mental disorders	343 (4.3%)	118 (12.5%)	461 (5.2%)	22 (8.8%)	96 (13.9%)	118 (12.5%)
F1 Mental and behavioral disorders due to psychoactive substance use	1,878 (23.5%)	177 (18.8%)	2,055 (23.0%)	36 (14.4%)	141 (20.4%)	177 (18.8%)
F2 Schizophrenia, schizotypal and delusional disorders	1,333 (16.7%)	361 (38.3%)	1,694 (19.0%)	127 (50.8%)	234 (33.8%)	361 (38.3%)
F3 Mood (affective) disorders	2,533 (31.8%)	151 (16.0%)	2,684 (30.1%)	41 (16.4%)	110 (15.9%)	151 (16.0%)
F4 Neurotic, stress-related and somatoform disorders	1,065 (13.4%)	55 (5.8%)	1,120 (12.6%)	7 (2.8%)	48 (6.9%)	55 (5.8%)
F6 Disorders of adult personality and behavior	609 (7.6%)	48 (5.1%)	657 (7.4%)	8 (3.2%)	40 (5.8%)	48 (5.1%)
Other psychiatric diagnosis	117 (1.5%)	13 (1.4%)	130 (1.5%)	3 (1.2%)	10 (1.4%)	13 (1.4%)
No psychiatric diagnosis	97 (1.2%)	19 (2.0%)	116 (1.3%)	6 (2.4%)	13 (1.9%)	19 (2.0%)

Values are given as number (percentage) for nominal variables and in mean ± standard deviation for continuous variables.

disorder (18.8%), affective disorder (16.0%), and organic psychiatric disorder (12.5%). 1.3% of all cases and 2.0% of all involuntarily admitted cases did not receive a psychiatric principal diagnosis at discharge.

The results of the GEE analysis with “type of admission” as dependent variable are shown in **Table 2**.

The GEE analysis suggested that “type of admission” (voluntary vs. involuntary) was significantly associated with age, nationality, marital status, time of hospital admission, and a principal diagnosis of an organic psychiatric disorder or a schizophrenia spectrum disorder. Cases admitted involuntarily were older, had less often Swiss nationality, were less often married, and were admitted more often during the nighttime or weekend hours, compared with cases admitted on a voluntary legal status. Moreover, involuntarily admitted cases had more often a principal diagnosis of an organic psychiatric disorder or of a schizophrenia spectrum disorder. However, we found no significant differences regarding gender, housing situation, occupational situation, a principal diagnosis of substance use disorder, and a principal diagnosis of an affective disorder in voluntarily and involuntarily admitted cases.

TABLE 2 | Generalized estimating equation (GEE) analysis with type of admission (admitted voluntarily or involuntarily) as dependent variable.

Characteristic	*B*	SE	df	*p*	95% CI
Age	0.012	0.0031	1	.000	0.005 to 0.018
Gender	0.021	0.0921	1	.817	−0.159 to 0.202
Nationality	−0.228	0.0968	1	.018	−0.418 to −0.038
Marital status	0.113	0.0434	1	.011	0.027 to 0.200
Housing situation	0.084	0.0439	1	.060	−0.004 to 0.172
Occupational situation	0.056	0.0364	1	.132	−0.017 to 0.129
Time of hospital admission	−1.166	0.0799	1	.000	−1.322 to −1.009
F0 principal diagnosis	1.180	0.1885	1	.000	0.810 to 1.549
F1 principal diagnosis	0.115	0.1454	1	.431	−0.170 to 0.400
F2 principal diagnosis	0.924	0.1328	1	.000	0.664 to 1.185
F3 principal diagnosis	−0.199	0.1344	1	.138	−0.463 to 0.064
Constant	−3.073	0.2949	1	.000	−3.652 to −2.494

CI, confidence interval; df, degrees of freedom; SE, standard error.

The results of the GEE analysis with "appeal against compulsory admission order" as dependent variable are shown in **Table 3**.

This second GEE analysis suggested that "appeal against compulsory admission order" (yes vs. no) was significantly associated with gender, nationality, and a principal diagnosis of schizophrenia spectrum disorder. Patients from cases where an appeal was lodged against compulsory admission were more often female, had more often Swiss nationality, and were more often diagnosed with schizophrenia spectrum disorder, when compared with cases where no appeal was filed. In detail, 127 (35.2%) of 361 involuntarily admitted cases with a schizophrenia spectrum disorder lodged an appeal against their compulsory admission order.

DISCUSSION

To our knowledge, this is the first study to examine appeals against compulsory admission within the current legal framework in Switzerland.

TABLE 3 | GEE analysis with appeal against compulsory admission order (yes vs. no) as dependent variable.

Characteristic	*B*	SE	df	*p*	95% CI
Age	0.000	0.0055	1	.967	−0.011 to 0.011
Gender	0.587	0.1726	1	.001	0.249 to 0.925
Nationality	0.474	0.1949	1	.015	0.092 to 0.856
Marital status	0.032	0.0852	1	.711	−0.136 to 0.199
Housing situation	−0.066	0.0670	1	.327	−0.197 to 0.066
Occupational situation	−0.026	0.0740	1	.723	−0.173 to 0.120
Time of hospital admission	0.044	0.1720	1	.797	−0.293 to 0.381
F0 principal diagnosis	−0.174	0.3742	1	.642	−0.907 to 0.560
F1 principal diagnosis	0.043	0.3192	1	.892	−0.582 to 0.669
F2 principal diagnosis	0.884	0.2666	1	.001	0.362 to 1.407
F3 principal diagnosis	0.496	0.3117	1	.111	−0.114 to 1.107
Constant	−2.582	0.6416	1	.000	−3.842 to −1.323

CI, confidence interval; df, degrees of freedom; SE, standard error.

Compared with previous publications describing the same catchment area and hospital (33, 38), the number of cases per year increased from 2,319 in the year 2000 (33) to a mean of 2,972 in the years 2013–2015. As the number of beds and the size of the catchment area did not change relevantly, this can mainly be seen as a correlate of a decreasing mean duration of treatment. Lopez et al. (38) and Eichhorn et al. (33) further reported about 320 cases of involuntary admission per year equaling about 170 per 100,000 persons in the catchment area for the years 1993 and 2000. In the present study, there were a mean of 314 involuntary hospitalizations per year equaling 165 per 100,000 persons in the catchment area. Thus, the frequency of involuntary admission can be seen as nearly unchanged from 1993 to 2015, despite notable changes in legal regulation. Due to the rising number of cases treated in the UPK, the percentage of involuntary admission decreased from 13.8% in 2000 (33) to 10.6% in 2013–2015. This might have exerted a positive effect on the mean clinical severity of cases and on the therapeutic atmosphere, further supporting the positive effects of the introduction of an open-door strategy in the hospital (22, 28, 29). In total, the frequency of involuntary admissions in our study is within the range found across Europe, with a minimum of 12.4 per 100,000 inhabitants in Italy and up to 232.5 per 100,000 inhabitants in Finland and with considerable national and regional variations (20, 39).

While the frequency of involuntary hospital admissions remained relatively stable with reference to the population in the catchment area and showed a limited decrease in relation to the number of inpatient cases per year, the percentage of appeals showed a notable decline: whereas 50.0% of the affected patients appealed against the decision to admit them involuntarily in 2000 (33), only 26.5% appealed in 2013–2015. Changes in the legal situation are only one factor that could be associated with this decrease. In particular, the introduction of an open-door policy with improvements in ward atmosphere, patient–therapist–relationship, diagnosis specific treatment programs on the wards, and an intensive discourse with public stakeholders—especially the public health officers deciding on involuntary admissions—might be relevant factors explaining this decrease (23, 32).

Exploratory analyses of the clinical characteristics showed that 1.3% of all cases and 2.0% of all involuntarily admitted cases did not receive a psychiatric principal diagnosis at discharge. While there are legal regulations where patients involuntarily admitted to a psychiatric hospital have to be diagnosed with a psychiatric illness (40), there might be scenarios in the current legal regulation in Basel-Stadt where it may be allowed to commit persons without a primary psychiatric diagnosis, e.g., in cases with a "mental impairment" not fulfilling diagnostic criteria for an ICD-10 diagnosis from chapter F and with a severe case of physical or social neglect. Furthermore, these might be cases where—in the initial situation with a limited set of available information and within limited time in an emergency situation—a public health officer presumes that a psychiatric disorder can be diagnosed, but during the course of hospitalization and at discharge, this diagnosis can be ruled out.

When considering predictors of involuntary admission, there was a significant association with higher age, presumably corresponding with the increased percentage of persons with an organic psychiatric disorder in the involuntarily admitted patients. While, in other studies, male gender has been repeatedly found to be associated with involuntary admission due to its known connection with aggression and violence (41–43), this was not the case in the current study. This may be a correlate of the legal criteria for compulsory admission in Basel-Stadt that are focused not only on aggression but also on conditions like self-harm, suicidality, and neglect. The other factors associated with involuntary hospital admission are in line with the literature (2), as lack in social support (e.g., as statistically associated with marital status and foreign nationality), difficult access to regular mental health care (e.g., as statistically associated with foreign nationality), increased use of emergency mental health care outside of normal business hours, and lack of insight (e.g., in organic psychiatric disorders and schizophrenia spectrum disorder) are known to be associated with involuntary commitment (14, 20, 39, 44). In this context, it is unclear why a diagnosis of an organic psychiatric disorder was not statistically associated with an appeal against involuntary admission; this should be subject to future research.

Female gender, being of Swiss nationality, and having a principle diagnosis of schizophrenia spectrum disorder emerged as significant predictors of appealing against compulsory admission. This might be connected with an increased probability to appeal in cases with better knowledge of the legal regulations and system and in persons with better social functioning and skills (45). In addition, persons with low insight into their illness (e.g., in an acute phase of a schizophrenia spectrum disorder) might be more prone to appeal against an—in their view unjustified—admission or might show more opposition to inpatient treatment leading to an appeal on their behalf.

Contrary to our hypothesis that decisions made in an emergency setting might be connected with a higher probability to appeal, admission time had no significant association with the decision to appeal. From a clinical point of view, this is of note, as 66% of the cases with involuntary admission presented during nighttime or weekends. This suggests that the majority of involuntarily admitted patients are assigned to our clinic outside of normal working hours. In the present study, 160 (26%) of a total of 621 cases admitted outside regular working hours lodged an appeal, compared with 90 (28%) of the total of 321 cases admitted during regular working hours. The finding that admission time was no significant predictor of appeals may be interpreted as an indicator that the system in place in Basel-Stadt requiring professional external assessment by public health officers is able to provide highly qualified decisions on involuntary admission within and outside of regular working hours. In addition, it underlines the importance of an inpatient treatment setting that ensures that working toward a therapeutic alliance and shared decision making with involuntarily admitted patients is equally pursued during nighttime and on weekends as during normal working hours. If this would not be the case, it could be expected that patients admitted involuntarily outside regular working hours would lodge appeals against compulsory admission orders more frequently, indicating comparatively more disagreement with treatment. However, other interpretations of these findings cannot be ruled out. While they could indeed be the correlate of ensured treatment consent and satisfaction, there is, e.g., the possibility that patients expect a lower chance of success with regard to an appeal for admissions outside regular working hours and that this causes comparable rates of appeals with regular working hours despite lower agreement with the decision to initiate inpatient treatment.

STRENGTHS

The current study explores a novel and clinically important topic, enabling better understanding on who appeals against involuntary admission in psychiatry. Strengths of this study include a naturalistic design with broad inclusion and no-exclusion criteria, examining a hospital with nearly complete coverage of involuntary inpatient treatment for its catchment area, the relatively large sample size of 8,917 cases, and the applied statistical analyses. In addition, comparison data from the examined catchment area are available over a time period of more than 20 years, enabling examination of the longitudinal development of the frequency of involuntary admissions and of appeals.

LIMITATIONS

As the GEE analysis method used in the current paper requires an adequate minimum sample size, some clinically interesting questions could not be examined, e.g., the predictors of a successful appeal. Furthermore, the current study used routine data, which enabled analysis of a relatively large dataset—on the other hand, some relevant information is not available from routine data and could therefore not be analyzed (e.g., length of involuntary commitment). In addition, the generalizability of the presented findings is limited due to differing legal regulations within Switzerland and in other nations.

CONCLUSION

The frequency of involuntary admissions in the observed catchment area seems to be relatively stable, with about 170 cases per 100,000 inhabitants in 1993, 2000, and 2013–2015. The percentage of patients who use the possibility to appeal has decreased from 2000 to 2013–2015, and only comparably few patients lodge an appeal. Better knowledge of the regulations, higher social functioning, and lower insight into illness might be associated with a higher probability of appealing against involuntary admission. Future research should examine if specific patient groups are in need of additional assistance to exert their rights to appeal.

DATA AVAILABILITY

The raw data supporting the conclusions of this manuscript will be made available by the authors, without undue reservation, to any qualified researcher.

ETHICS STATEMENT

According to current legal regulation, no approval from the local ethics committee was required for the current study.

AUTHOR CONTRIBUTIONS

CH designed the study. BA and JM collected the data. BA, JM, LH, and CH analyzed and interpreted the data. BA, JM, and CH wrote the initial draft of the paper. AS, SB, and UL revised the manuscript for important intellectual content. JM and LH had full access to all the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis. All authors have contributed to, read, and approved the final version of the manuscript. BA and JM contributed equally.

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Ward Atmosphere and Patient Satisfaction in Psychiatric Hospitals With Different Ward Settings and Door Policies. Results From a Mixed Methods Study

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Background: Open-door policies in psychiatry are discussed as a means to improve the treatment of involuntarily committed patients in various aspects. Current research on open-door policies focuses mainly on objective effects, such as the number of coercive interventions or serious incidents. The aim of the present study was to investigate more subjective perceptions of different psychiatric inpatient settings with different door policies by analyzing ward atmosphere and patient satisfaction.

Methods: Quantitative data on the ward atmosphere using the Essen Climate Evaluation Scale (EssenCES) and on patient satisfaction (ZUF-8) were obtained from involuntarily committed patients (*n* = 81) in three psychiatric hospitals with different ward settings and door policies (open, facultative locked, locked). Furthermore, qualitative interviews with each of 15 patients, nurses, and psychiatrists were conducted in one psychiatric hospital with a facultative locked ward comparing treatment in an open vs. a locked setting.

Results: Involuntarily committed patients rated the EssenCES' subscale "Experienced Safety" higher in an open setting compared with a facultative locked and a locked setting. The subscale "Therapeutic Hold" was rated higher in an open setting than a locked setting. Regarding the safety experienced from a mental health professionals' perspective, the qualitative interviews further revealed advantages and disadvantages of door locking in specific situations, such as short-term de-escalation vs. increased tension. Patient satisfaction did not differ between the hospitals but correlated weakly with the EssenCES' subscale "Therapeutic Hold."

Conclusion: Important aspects of the ward atmosphere seem to be improved in an open vs. a locked setting, whereas patient satisfaction does not seem to be influenced by the door status in the specific population of patients under involuntary commitment. The ward atmosphere turned out to be more sensitive to differences between psychiatric inpatient settings with different door policies. It can contribute to a broader assessment by including subjective perceptions by those who are affected directly by involuntary commitments. Regarding patient satisfaction under involuntary commitment, further research is needed to clarify both the relevance of the concept and its appropriate measurement.

Keywords: open-door policies, acute psychiatry, qualitative-empirical interviews, mixed methods, EssenCES, ZUF-8

BACKGROUND

The issue of coercion in psychiatry has been strongly debated in the past few years (1–3). Applying coercion requires an ethical and legal justification. Coercive measures and involuntary commitments in psychiatry in many European jurisdictions are legally based on the criterion of acute danger to self or to others and aim to avert harm for the involuntarily committed person or for third parties (4, 5). To reach this goal, it is a common practice to treat involuntarily committed patients in psychiatry on permanently locked wards (6).

In recent years, however, open-door policies, i.e., the reference of involuntarily committed patients to open instead of locked wards, have been intensively discussed as an alternative to the tradition of locked wards (7, 8). The major aims of open-door policies are to reduce the use of coercion and to strengthen patients' autonomy (9). Several psychiatric hospitals in Germany are trying to implement the concept, not least because of legal changes in some federal state mental health laws which state explicitly that legal commitments should be realized in an open setting, as far as possible. The concrete implementation of open-door policies ranges from the facultative opening of the doors of some wards for intermittent periods of time to permanently opening all wards of a psychiatric hospital (10).

A successful implementation of open-door policies requires several conceptual and organizational changes which, among others, include a strengthening of the therapeutic relationships, new security concepts and a further development of the therapeutic milieu (11–13). Burns (14) also argues for an enhancement of therapeutic engagement instead of emphasizing aspects of compulsion and control by locking the doors. Such claims have implications for research on open-door policies. Up to now, most studies have analyzed the effects of open wards regarding mainly objective security and risk management aspects, such as coercive measures, absconding, suicide attempts, or violence (7, 8, 15–18). This can lead to a disregard of other indicators, which go beyond objective security aspects and take into account the subjective perception of those who are directly affected by the involuntary commitment.

Two such more subjective indicators are ward atmosphere and patient satisfaction. Both concepts are sometimes discussed and applied together, but the character and the direction of the relationship between ward atmosphere and patient satisfaction remain unclear (19, 20).

Ward atmosphere was developed specifically for psychiatric settings and used several decades ago in the context of treatment outcome measurements (21, 22). In recent years, it has been discussed increasingly in the context of violence and aggression (23–25). Some complex interventions, such as the so-called engagement model, aim to reduce coercion by improving the ward atmosphere, i.e., by creating an "atmosphere of hospitability and warmth" and, thereby, strengthening the therapeutic alliance (26–28). There are also some studies which investigated ward atmosphere in relation to certain ward characteristics: Schalast and Sieß (29) examined the ward atmosphere experienced from patients and mental health professionals' perspectives in different psychiatric settings, with slightly different results for both groups. Among others, they showed that some aspects of ward atmosphere were rated lower on locked than open wards. Blaesi et al. (30) investigated ward atmosphere explicitly in the context of open-door policies, complemented by a four-year follow up after the opening of wards (31). They concluded that door opening influences ward atmosphere positively.

Patient satisfaction is a rather unspecific indicator which is commonly applied in the evaluation of health care interventions in general (32, 33). In the past decades, several scales have been developed and used to assess patient satisfaction in the specific context of mental health care (34, 35). There is evidence that patients who are more satisfied with the treatment received tend to be more adherent to therapies and profit more from them (36). Regarding involuntarily committed patients, this implies that an improvement of patient satisfaction might contribute to a reduction of involuntary interventions by enhancing treatment adherence and outcomes and preventing treatment refusals. Furthermore, Woodward et al. (37) point out that patient satisfaction is influenced, in addition to patient-related factors, by setting characteristics. This includes studies indicating that admission status, door status, and experience of coercion can have an impact on patient satisfaction (37–40). This leads to the question whether a psychiatric inpatient setting with an open-door policy can improve the satisfaction of involuntarily committed patients.

To the best of our knowledge, there have been no combined assessments of ward atmosphere and patient satisfaction in the specific context of different psychiatric inpatient settings with different door policies so far. Additionally, we are not aware of any studies concerning ward atmosphere and patient satisfaction which examined involuntarily committed patients directly by including them both in a quantitative and qualitative study. Therefore, our present study, first, aimed to investigate the differences in ward atmosphere and patient satisfaction in three psychiatric hospitals with different ward settings and door policies from the perspective of involuntarily committed patients, using standardized questionnaires. Second, we aimed to qualitatively assess patients and mental health professionals' experiences and attitudes toward open and locked wards in a facultative locked hospital. In this context, we intended to gain further insights into the relationships between different door policies, ward atmosphere, and patient satisfaction.

METHODS

The data presented in this paper are part of a larger mixed methods study consisting of a quantitative and a qualitative subproject. The study was approved by the Research Ethics Committee of the Medical Faculty of the Ruhr University Bochum (Reg. No. 15-5452).

The quantitative subproject included a standardized documentation and assessment of all involuntary commitments over a period of 6 months, between September 2016 and March 2017, in psychiatric hospitals with different ward settings and door policies. The documentation and assessment started with the first and ended with the last day of the involuntary commitment. Five hospitals were initially recruited for the study, but only four hospitals finally participated in the study. The additional assessment of ward atmosphere and patient satisfaction using standardized questionnaires was conducted only in three hospitals, so only results from the latter will be presented in this paper.

Hospital Description

All institutions participating were acute psychiatric hospitals located in the Ruhr Area in North-Rhine Westphalia, a federal state in Western Germany. They all had the obligation to admit involuntarily committed patient resident in a hospital's defined catchment area. As the sizes of these catchment areas were different, the hospitals participating differed in the total number of beds (hospital 1: 464, hospital 2: 137, hospital 3: 159). The three hospitals pursued different strategies to manage involuntary commitments including different door policies. No hospital participating made major conceptual changes during the period assessed.

In the first hospital, all involuntarily committed patients were referred to admission wards which were permanently locked. As a rule, these patients were not transferred to open wards until the end of their involuntary commitment. This means that all involuntarily committed patients included in that hospital stayed on permanently locked wards during the whole time of the assessment. Therefore, we refer to this hospital as "locked." The second hospital (referred to as "facultative locked") distributed all patients, including those who were involuntarily committed, to specialized wards according to their diagnosis. With this strategy, the hospital aimed to treat all patients on open wards. However, the mental health professionals could apply restrictive strategies in specific situations to prevent patients from absconding, including temporal door locking of a smaller division (10 of 32 beds) of the ward for patients with psychotic disorders. In the third hospital, all wards were permanently open. Acutely ill and involuntarily committed patients were evenly distributed over all non-diagnosis-specific wards with their doors never locked. Therefore, we labeled this hospital as "open."

Standardized Questionnaires

All involuntarily committed patients with preserved mental capacity were asked to fill out standardized questionnaires. Among others, the ward atmosphere was assessed with the Essen Climate Evaluation Scale (EssenCES) (41) and the patient satisfaction with the German adaptation of the Client Satisfaction Questionnaire (CSQ), the so-called ZUF-8 (42). The EssenCES consists of three different subscales: "Patients' Cohesion and Mutual Support," referring to the cohesion among the patients themselves, "Therapeutic Hold," focusing on the therapeutic relationship between patients and mental health professionals and "Experienced Safety (vs. threat of aggression and violence)" (41). It was originally developed in the context of forensic psychiatry but has also been shown to be a valid tool to assess ward atmosphere in general psychiatry (43). Each subscale consists of five items, coded from 0 to 4, thus, a maximum of 20 can be achieved for each scale with higher values representing a better rating. The ZUF-8 is an eight-item questionnaire on satisfaction with the inpatient care. Each item is coded from 1 (maximally negative) to 4 (maximally positive), therefore, an overall maximum of 32 can be reached with higher values representing a higher satisfaction (42). Furthermore, the severity of illness and level of psychosocial functioning were assessed by the treating psychiatrists using the Clinical Global Impressions (CGI) Scale (44) and the Psychosocial Performance Scale (PSP) (45).

The assessments described in this section were conducted not earlier than 72 hours before the end of the involuntary commitment. Data were analyzed using SPSS 25, calculating an ANOVA for each value. Pair-wise comparison was conducted with *post hoc* tests using Bonferroni. Subsamples were compared by using ANOVA for parametric measures and the Kruskal Wallis and the Chi² test for categorical measures, such as gender and diagnoses. A total of $n = 81$ (10.6%) gave their informed consent to participate in the additional survey and filled out the questionnaires (**Table 1**). When comparing the response rates between the three hospitals, it is striking that the

TABLE 1 | Involuntary commitments and response rate per hospital.

	Hospital 1 (locked)		Hospital 2 (facultative locked)		Hospital 3 (open)	
	n	%	*n*	%	*n*	%
Number of involuntary commitments	754		119		29	
Number of involuntarily committed patients	632		106		28	
Response rate for questionnaires	23	3.6	44	41.5	14	50.0

TABLE 2 | Sample characteristics in total and per hospital.

	Total		Hospital 1 (locked)		Hospital 2 (facultative locked)		Hospital 3 (open)	
	M/n	*SD/%*	*M/n*	*SD/%*	*M/n*	*SD/%*	*M/n*	*SD/%*
Gender (male)	44	54.3	12	52.2	24	54.5	8	57.1
Age	41.9	14.5	42.5	12.4	41.8	16.1	41.2	13.1
Multiply committed during study period (yes)	7	8.6	3	13.0	4	9.1	0	0
Previous inpatient stays	3.1	4.7	2.5	3.4	2.9	5.0	4.3	5.7
Previous involuntary commitments	0.7	1.2	1.0	1.4	0.6	1.1	0.7	1.2
Diagnosis								
Substance disorders (ICD-10 F1)	11	13.8	3	13.6	6	13.6	2	14.3
Psychotic disorders (ICD-10 F2)	42	52.5	11	50.0	21	47.7	10	71.4
Affective disorders (ICD-10 F3)	13	16.3	4	18.2	8	18.2	1	7.1
Others	14	17.5	4	18.2	9	20.5	1	7.1
Psychosocial functioning (PSP)	3.74	1.75	4.80	2.78	3.72	1.61	3.22	1.72
Severity of illness (CGI)	5.00	1.00	4.55	1.21	5.11	0.78	5.00	1.36

rate is much lower in the first hospital. However, despite the differing size of the hospitals the characteristics of participating patients, such as gender or age (**Table 2**), of the subsample from the locked hospital did not differ from the total sample. Only a slightly higher number of patients being committed more than once during the period assessed could be observed. Additionally, sample sizes were sufficiently equal and large to conduct statistical analyses on these data. Furthermore, the subsample of patients participating did not differ significantly in these characteristics from the overall sample of involuntarily committed patients (which is not presented in detail in this paper), indicating that there was no bias between participating and nonparticipating patients.

Qualitative Empirical Interviews

The qualitative subproject consisted of a semi-structured interview study with each of 15 patients, nurses, and psychiatrists. The interviews were conducted in the second hospital (facultative locked). We decided to conduct the interview study in this hospital, because the ward with the facultative locked setting allowed interviewees to compare an open with a locked setting directly. Therefore, an inclusion criterion for nurses and psychiatrists was to have work experiences on both open and locked acute psychiatric wards. Patients, on the other hand, were only included when they had experiences with involuntary commitment on the facultative locked ward. The sampling was conducted purposively to obtain a diverse sample selection. Further details regarding the sample characteristics and the procedures around the interviews are described elsewhere (12). The interviews were semi-structured and focused on different thematic aspects in the context of open-door policies. The data were analyzed following qualitative content analysis according to Mayring (46). After defining the relevant corpus of data, team members with different backgrounds (psychiatry, psychology, sociology, medical ethics) read and reread all interviews multiple times to gain familiarity with the data and identify and index potential themes and categories. Even though ward atmosphere and patient satisfaction were not directly addressed by the interview guideline, the former especially could be identified as a main theme in the interviews. During the following analysis, the coding evolved from concrete passages to more abstract levels, allowing coders to derive themes from the data directly while also complementing their analysis with a deductive approach. All statements which were made regarding the social climate or atmosphere on the ward were coded and assigned to the three subscales of the EssenCES ("Patients' Cohesion," "Therapeutic Hold," or "Experienced Safety") to produce comparable results between quantitative and qualitative data. The same was done for statements which referred to aspects comparable to the items of the ZUF-8. When analyzing the qualitative data, it was considered that some results might be caused by the special characteristics of a facultative locked setting. It was carefully selected and distinguished between statements which referred to an open or locked setting generally or could be transferred to a totally open or locked setting, and others which only seemed to be applicable to a facultative locked setting, as described above.

RESULTS

At the time of the assessment, neither the severity of illness nor psychosocial functioning of the patients differed significantly between the hospitals [CGI: $F(2, 66) = 1.44$, $p = 0.245$, PSP: $F(2, 53) = 2.45$, $p = 0.096$], and no significant correlations with any of the EssenCES subscales or the ZUF-8 could be observed.

Table 3 gives an overview of the measures for ward atmosphere (EssenCES) and patient satisfaction (ZUF-8), which will, hereafter, be presented in more detail together with results from the qualitative subproject.

Ward Atmosphere

The highest mean in the EssenCES in the total sample could be found for the subscale "Therapeutic Hold" with $M = 13.65$ ($SD = 4.93$), whereas the subscales "Patients' Cohesion" ($M =$

TABLE 3 | Ward atmosphere (EssenCES) and patient satisfaction (ZUF-8) in total and per hospital.

	Total		**Hospital 1 (locked)**		**Hospital 2 (facultative locked)**		**Hospital 3 (open)**	
	M	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***
Ward atmosphere (EssenCES)								
Patients' Cohesion	11.52	4.05	11.78	5.08	11.48	3.57	11.21	3.89
Experienced Safety	11.23	5.27	9.17	6.00	11.05	4.96	15.21	1.93
Therapeutic Hold	13.65	4.93	11.26	5.88	13.89	4.36	16.86	2.57
Patient satisfaction (ZUF-8)	21.66	4.72	22.15	5.82	22.16	4.66	19.23	1.24

11.52, *SD* = 4.05) and "Experienced Safety" (*M* = 11.23, *SD* = 5.27) were rated somewhat lower. **Figure 1** shows the results for all three subscales comparing the three different clinical settings. There were no differences regarding the subscale "Patients' Cohesion," which was confirmed by the statistical analysis (*F*(80) = 0.09, *p* = 0.915). A significant overall difference between the three hospitals was found for the other two subscales ("Experienced Safety": *F*(80) = 6.58, *p* = 0.002; "Therapeutic Hold": *F*(80) = 6.51, *p* = 0.002). Post hoc tests revealed that the open setting differed significantly regarding the subscale "Experienced Safety" both from the locked setting (*I-J* = 6.04, *p* = 0.002) and the facultative locked setting (*I-J* = 4.17, p = 0.022) and the open setting differed significantly from the locked setting regarding the subscale "Therapeutic Hold" (*I-J* = 5.59, *p* = 0.002).

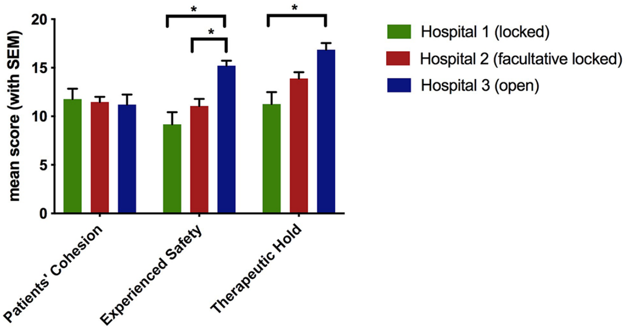
The results of the semi-structured interviews with the patients, nurses, and psychiatrists are presented following the structure of the EssenCES and grouped into pro and contra arguments regarding the different settings.

Patients' Cohesion

Concerning "Patients' Cohesion," the interviewees were mainly in favor of the open setting but also criticized facultative locked concepts.

Pro Open/Contra Locked

All groups agreed that open doors lead to a greater communicative exchange and support among patients.



asterisks representing significant group differences

FIGURE 1 | Subscales of ward atmosphere (EssenCES) per hospital.

> *And then the understanding among the patients. There is much more interaction, much more communication about one's own symptoms. Lovely, lovely groups form who sit together and who actually, in a way—once the therapeutic program is over—also structure the everyday life, which doesn't exist when the door is simply locked. (Nurse 2)*

Furthermore, there are more possibilities for withdrawal and privacy for patients and nurses in the open setting, which, consequently, lowers the potential of conflicts among patients. This could lead to better relationships up to friendships which formed during the inpatient stay. All groups stated that, on the contrary, conflicts among patients occur more often in a locked setting than in an open setting due to the fact that the same patients are locked up together in a limited space where they cannot avoid each other.

> *Well, simply that patients, loosely speaking, were threatening or bullying one another or whatever. And that's something you definitely noticed. Well, especially during the time when the door had been locked for a while; that there was a certain tension in the air, so to speak. (Psychiatrist 9)*

Against the background that open-door policies often are associated with the allocation of tense or aggressive patients to different wards instead of one single intensive care unit, psychiatrists highlighted the benefits of having a heterogeneous group of more or less severely ill patients on one ward.

> *They can go outside; they can go to another section. It mixes more with the healthier patients, too. In the past, you had all acute patients of the house in one section. It mixes more. (Psychiatrist 14)*

Contra Open/Pro Locked

Contrary to the psychiatrists, nurses stated that such a blending of patients may lead to a psychological strain for the less severely ill patients. Additionally, less acutely ill patients might experience a greater fear of more acutely ill patients and, therefore, be destabilized.

Contra Facultative Locked

Some answers in the interviews were directed specifically concerning the features of the facultative locked setting. Patients especially claimed that the intermittent locking of a ward in challenging situations creates an abrupt separation between patients, which, consequently, leads to further negative repercussions, such as feeling isolated or disadvantaged compared to the patients in an open setting. Additionally, all groups indicated that such a practice can lead to the apportionment of blame towards those patients who are considered responsible for the necessity of door locking.

Experienced Safety

Regarding "Experienced Safety," interviewees expressed different opinions and arguments in favor of both the open and locked setting.

Pro Open/Contra Locked

A lower feeling of tension was reported by all groups in the open setting, leading to a lower potential of aggression and conflict, regardless of the specific patients who are currently on the respective ward.

> *I've always experienced the locked door as a sort of pressure cooker, a kind of powder keg basically. The door was locked, and you noticed the tension in that section has intensified. That was the position in most cases anyway. (Nurse 11)*

According to the interviewees, this phenomenon can lead to a spiral of escalation, because patients who are already tense are made even more aggressive by the locked door and other patients become affected by this tension.

> *You build up frustration not only as a reasonably healthy but also as an ill person. You can't get out. The door is locked. And then frustration comes and … trash, littering, or demolishing walls or I don't know. Frustration bubbles up because the door is locked. (Patient 1)*

Furthermore, all groups pointed out that there are always comparatively stable and balanced patients in locked settings who are "incarcerated" with potentially aggressive patients and, thereby, put at risk. This is in line with patients reporting that they experience less fear when the doors are open. Interestingly, nurses and psychiatrists both mentioned that a higher feeling of safety in a locked setting is often deceptive, because locking the doors cannot completely prevent aggression or serious incidents. Instead, they see the problem that mental health professionals can underestimate risk situations on a locked ward and do not pay enough attention to imminent dangers or crises.

> *The second negative aspect of the locked door, I feel, is that a certain safety thinking sets in: "There's nothing behind there anyway, nobody could do anything and all the dangerous things are gone now." If someone then has a lighter or if someone tears off a chair leg in his psychotic force, as has happened, then one doesn't have it in one's head; that they can also tinker with stuff without something new getting in. (Psychiatrist 5)*

In this context, nurses and psychiatrists also discriminate between the safety experienced and real safety provided by locked doors.

> *[…] that a certain risk is always at play and that you cannot necessarily minimize that risk by locking the door. And then the question—what really provides us with safety, what is perceived safety and how much true safety really exists with a locked door. (Nurse 7)*

This is also experienced by the patients who mention that mental health professionals do not react to aggressive behavior in the locked setting as consequently as in the open setting.

Contra Open/Pro Locked

As a negative effect of the open setting, the nurses and psychiatrists pointed out that watching the door makes nurses a target of aggression, whereas a locked door is often more accepted as a physical border (12).

Furthermore, patients and nurses stated that a locked ward or a locked division might enhance the feeling of safety for the remaining patients on the open wards or divisions as it separates them from more acutely ill and potentially aggressive patients.

> *On the other hand, when the door was locked, when you have patients there who are antisocial, aggressive, whatever, then the patients of the other division of course experienced it as protection when the door was locked. (Nurse 11)*

Pro Facultative Locked

All groups reported some benefits of having the possibility of periodically locking a door. Patients and nurses expressed that some delusional patients might feel safer behind a locked door.

In addition, for nurses and psychiatrists, the door does not only represent safety for other patients but also for the mental health professionals themselves. It is highlighted that locking the door, at least for a short period, for example, when patients are in a crisis or in some cases of tense admissions, can lead to de-escalation and, therefore, makes the mental health professionals feel safer [see also (12)].

> *And I don't know if one should give up the possibility of once briefly locking the door. Simply to ensure safety. Not with the idea of leaving it like that, but like I said, to de-escalate the situation for a short time. (Psychiatrist 9)*

Therapeutic Hold

Similar to the opinion on "Patients' Cohesion," the interviewees mainly expressed the advantages of the open setting regarding "Therapeutic Hold."

Pro Open/Contra Locked

The most important benefit of open doors regarding "Therapeutic Hold" was seen by all groups in the greater mutual respect between patients and mental health professionals, resulting in further positive effects for all groups.

> *Well, it's really like a liberation when you get out of there [the locked division]; you're taken more seriously again, you feel. (Patient 14)*

The interviewees further mention that the greater respect and greater communication at eye level in the open setting leads to patients being more accessible, therefore, nurses and psychiatrists can build a relationship with them more easily. This is accompanied by more engagement of the mental health professionals and, therefore, more care in the open than in the locked setting. Patients also feel that the mental health professionals are more responsive and that there are more options to talk with someone when the doors are open.

> *If I keep the ward open, I really need to establish a relationship with him. I have to, in order to get a bit of a promise that he won't harm himself and I accomplish that much better when I enter this relationship openly, when I have to, and I depend on that when the door is open. (Psychiatrist 12)*

Additionally, all groups stated that the therapeutic relationship between patients and mental health professionals is strained in the locked setting, because patients might try to merely exploit mental health professionals to open the doors.

> *Due to the locked door, you are exploited to merely function as a key in that situation, to open the door. Patients also don't take you, in my opinion, they don't take you therapeutically seriously anymore. You have this key and they only see that key and they try, for better or for worse, to get you to stick it in, turn, get to the other side and from there on, so to speak, react, act to leave the ward somehow. (Nurse 2)*

Contra Open/Pro Locked

In contrast to the benefits reported, nurses mentioned that time-consuming tasks in the open setting, such as watching the open door, binds resources which can, consequently, result in fewer mental health professionals available for patient contacts and less time for primary nursing (see also (12)).

Patient Satisfaction

Concerning patient satisfaction, values ranged between $M = 19.23$ ($SD = 1.24$) and $M = 22.16$ (SD 4.66), and no significant difference could be found between the hospitals [ZUF-8: $F(2, 73) = 2.14$, $p = 0.125$]. The mean in the overall sample was $M = 21.66$ ($SD = 4.27$), which corresponds to 68% of the maximum value of 32. Patient satisfaction seemed to be relatively independent from the ward atmosphere; the measures of ZUF-8 correlated significantly only with the EssenCES subscale of "Therapeutic Hold" ($r = 0.39$, $p = 0.001$).

Statements from the qualitative interviews which could be interpreted as related to patient satisfaction and went beyond aspects of ward atmosphere referred mainly to the treatment offers within the hospital. All groups generally expressed points of criticism and suggestions of improvement concerning the treatment. Patients especially stated that the hospital did not offer sufficient psychotherapy or conversations with the staff in addition to pharmacological treatment and that there were too few opportunities for activities on the ward. These criticisms seemed to be more pronounced regarding the locked setting. However, the nurses and psychiatrists interviewed pointed out that the lower participation in therapies and activities was not primarily an effect of the door status but depended more on the patients' current state of health. Most patients in the locked setting are acutely ill and in a mental condition in which they are less receptive to therapeutic offers. In this context, the interviewees gave the recommendation to adapt the therapeutic offers to the needs and capabilities of acutely ill and involuntarily committed patients.

DISCUSSION

Ward Atmosphere

Considering the quantitative and qualitative data together, our results showed that ward atmosphere is associated with the ward setting.

(1) Regarding "Patients' Cohesion," the qualitative data indicated that an open ward setting can reduce conflicts among patients and, thereby, improve the mutual support. However, the quantitative data regarding this subscale exhibited relatively low values in all hospitals with no difference between the different settings. One possible explanation for this discrepancy might be that mainly more stable patients benefit from the factors mentioned in the interviews, such as distribution of tense patients and an increased radius of movement. The more severely ill involuntarily committed patients, on the other hand, might experience little support from their fellow patients in any case, due to symptoms, such as suspiciousness, or problematic behavior, such as aggression. Additionally, the qualitative results indicate that facultative locked settings might be especially problematic regarding patients' cohesion, as abrupt changes in the door status can have a negative impact on the relationships among patients. Our result that the door status does not apparently have an impact on patients' cohesion from the perspective of the patients themselves corresponds to the study of Schalast and Sieß (29). Even though Blaesi et al. (30) and Schalast and Sieß (29) indicated that there might be a positive influence of open doors on patients' cohesion rated by mental health professionals, in line with Lo et al. (31) and our qualitative results, this does not seem to be very consistent or clear. We conclude from the overall data that patients do not apparently benefit from open doors regarding their cohesion to fellow patients.

(2) Considering "Experienced Safety," our quantitative data revealed significantly higher values in the open compared to the facultative locked and locked setting. This is consistent with the results of previous studies (29–31), indicating a clear benefit of open doors for the experienced safety. Concordantly, the patients also emphasized the advantages of an open setting for their safety experience in our qualitative interviews. However, the mental health professionals did not

only highlight the de-escalatory effects of open doors but also articulated that the possibility of door locking can increase the feeling of safety in specific situations.

(3) "Therapeutic Hold" was quantitatively rated significantly higher in the open setting than in the locked setting. This was clearly supported by the qualitative data. All groups consistently experienced the benefits of the open doors, producing mainly a greater mutual respect and a better therapeutic relationship between the patients and the mental health professionals. These results seem to contradict previous studies, which showed no improvement of the therapeutic hold on open wards (29–31). From our point of view, the variations in the quantitative measurements may result from the differences in the samples examined. While we focused on the views of involuntarily committed patients, Schalast and Sieß (29) defined no specific inclusion criteria for patients, and Blaesi et al. (30) and Lo et al. (31) limited their assessment to mental health professionals. The relevance of sample characteristics is further supported by the results of our qualitative interviews, indicating that involuntarily committed patients benefit primarily from open-door policies. According to our interviews, a reason for that might be that the dependent and instrumental relationship between patients and mental health professionals in the locked setting is at least partially changed to a therapeutic relationship at eye level in the open setting.

Patient Satisfaction

Our qualitative data did not indicate a relationship between the open and the locked setting regarding patient's satisfaction with the treatment. Similarly, our quantitative assessment of patient satisfaction with the ZUF-8 showed no differences between the three psychiatric inpatient settings examined. The overall value of patient satisfaction revealed that patients were neither clearly unsatisfied nor satisfied with the inpatient treatment experienced during their involuntary commitment. In the ZUF-8 validation on a sample of patients in a psychosomatic hospital, Schmidt et al. (42) reported a skewed distribution towards higher values with a mean of 26.3. In a sample of voluntary and involuntary patients who had just recently been admitted to a psychiatric hospital, Borbé et al. (47) reported a mean value of 24.7. Compared with this, our values assessed seem to be rather low. However, regarding the specific population of involuntarily committed patients, our results are consistent with those reported in other studies (38). Thus, our results support the previous findings that involuntarily committed patients experience lower satisfaction than voluntary patients (36–38). This impact of the patients' legal status might also be a good explanation of the findings of other studies which—unlike our own study—showed a relationship between patient satisfaction and the door status (37, 39). In those studies, both voluntary and involuntary patients were assessed, which probably led to a confounding between the effect of the door status and the legal status, as involuntarily committed patients are usually treated on locked and voluntary patients on open wards. The fact that we assessed patient satisfaction on open vs. locked wards solely from the perspective of involuntarily committed patients could be an explanation why we did not find such a difference between the different settings.

Relationship Between Ward Atmosphere and Patient Satisfaction

Regarding the relationship between ward atmosphere and patient satisfaction, the only correlation we found was with the subscale of "Therapeutic Hold." As this statistical correlation was only small to moderate, there seems to be no strong relationship between the two scales. This is in line with previous studies (48, 49) and supports the assumption that ward atmosphere and patient satisfaction are rather independent from each other. On the other hand, the interviewees in the qualitative subproject saw a relationship between satisfaction with treatment and the amount and quality of therapeutic offers. Other studies also assume a link between patient satisfaction and therapy, among others showing satisfied patients are more adherent to the treatments offered (36). However, the direction of the relationship between patient satisfaction and "Therapeutic Hold" in our study remains unclear. On the one hand, more satisfied patients might have experienced greater therapeutic hold. On the other hand, a greater therapeutic hold might have improved patient satisfaction. It would be interesting to investigate this relationship further in the specific context of involuntarily committed patients in the future.

STRENGTHS AND LIMITATIONS

The main strength of our study is its mixed methods design using both quantitative and qualitative approaches to evaluate ward atmosphere in psychiatric hospitals with different ward settings and door policies. A further strength is that we also assessed patient satisfaction using a standardized questionnaire, especially because we focused our quantitative study on involuntarily committed patients and, therefore, on those persons who are most severely affected by the respective door policies. We ensured that our results were not limited to the patients' view by the addition of nurses and psychiatrists' perspectives in the qualitative interviews. As we assessed all involuntarily committed patients in the respective hospitals, the quantitative comparison was not limited to single wards or to a selective subgroup of patients. However, we are aware that the comparison between different hospitals always entails the risk of other influencing factors (such as architecture) which cannot be ruled out completely.

A major limitation of our study is the low response rate in the quantitative assessment of patients in the locked setting. The low rate might be caused by limited resources in the respective hospital due to the large total sample of involuntarily committed patients during the period assessed. However, we checked that the subsample of this hospital did not differ from the total sample of participating patients regarding specific characteristics (such as gender, age, previous hospitalization, or diagnoses). The response rates in the other two hospitals were higher and comparable to other studies examining the specific group of involuntarily committed patients (50, 51). To rule out any systematical bias in patient recruiting in all participating hospitals, we compared the sample of patients who filled out the questionnaire with the whole sample regarding sociodemographic aspects and found no relevant differences.

A second major limitation is that not all quantitative and qualitative assessments were conducted in all groups (nurses, psychiatrists, and patients) and hospitals. This limits the comparability of our results with previous studies, especially regarding the mental health professionals who were not included in the quantitative assessment. Furthermore, it is possible that the ZUF-8 was not the most suitable instrument to assess patient satisfaction in the context of open-door policies, as some items, such as those which ask whether one would recommend the treatment in the hospital to others, do not seem applicable to the specific situation of involuntarily committed patients. However, the ZUF-8 was developed especially for the psychiatric inpatient setting (35) and is an established instrument used in previous studies which included patients under involuntary commitment (37). Concerning the qualitative interviews, the limitation is that they were conducted in a context where the facultative door locking affected a small division of one ward (instead of the facultative locking of the door for the whole ward). We tried to consider the influence of this characteristic in the analysis; however, it is possible that this specific aspect plays a role in some of the statements given.

CONCLUSION

Involuntarily committed patients experience a better ward atmosphere regarding "Experienced Safety" and "Therapeutic Hold" in the open psychiatric setting when assessed by the EssenCES. Considering that open-door policies target mainly security aspects or the therapeutic relationship between patients and mental health professionals, this seems plausible. Regarding "Experienced Safety," the qualitative data further revealed specific advantages of a facultative locked setting which go beyond those being observed in a completely open or locked setting, such as short-term de-escalation. Patient satisfaction assessed by the ZUF-8, however, was not specifically associated with ward atmosphere or door policy. Qualitative data also indicated that, except from the support received from the staff, door policies do not influence the satisfaction with psychiatric treatment for involuntarily committed patients. Though, considering the correlation between patient satisfaction and "Therapeutic Hold," our results emphasize the need for an appropriate and more specific instrument to assess the patient satisfaction of those under involuntary commitment. With such an instrument, differences regarding patient satisfaction between psychiatric inpatient settings with different door policies might be found in future studies. Such studies should also address the research question whether and how patient satisfaction in the specific population of involuntarily committed patients can be improved as this could help to enhance different aspects of treatment (e.g., treatment adherence) and, thereby, help to reduce involuntary interventions.

Given the fact that involuntarily committed patients and—at least under specific circumstances—mental health professionals experience better therapeutic relationships and a greater feeling of safety in hospitals with an overall therapeutic and organizational setting which enables the (permanent) opening of ward doors, this can be regarded as an argument to further promote and evaluate open-door policies in psychiatric practice. Thereby, future studies should investigate (1) a possible moderator or mediator effect of ward atmosphere on objective security aspects, such as the use of coercive interventions or the likelihood of serious incidents, and (2) whether it is more advisable to maintain the option of intermittent door locking in specific situations or to forego such an option completely.

DATA AVAILABILITY

Given the small sample sizes and the detailed reports in the qualitative subproject, making the data publicly available would compromise privacy and anonymity of the research participants. Furthermore, the quantitative and qualitative datasets generated contain data that have not been analyzed and published yet. Upon reasonable request, they might be available at a later time from the corresponding author.

ETHICS STATEMENT

This study was carried out in accordance with the recommendations of the Research Ethics Committee of the Medical Faculty of the Ruhr University Bochum with written informed consent from all subjects. The protocol was approved by the Research Ethics Committee of the Medical Faculty of the Ruhr University Bochum (Reg. No. 15-5452).

AUTHOR CONTRIBUTIONS

IO, JV, GJ, and JG made substantial contributions to the conception and design of the qualitative subproject and GJ and JG to the conception and design of the quantitative subproject. JB, IO, and JG recruited and interviewed the participants in the qualitative subproject. The qualitative data were analyzed and interpreted by SE, JB, JK, IO, and JG. JK, BU, H-JA, SZ, PN, GJ, and JG managed the collection and preparation of the quantitative data, which were mainly analyzed and interpreted by SE and JG. SE, JB, and JG wrote the first draft of the manuscript.

All authors read the manuscript and were involved in revising and finalizing it.

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Psychiatric Advance Directives Under the Convention on the Rights of Persons With Disabilities: Why Advance Instructions Should Be Able to Override Current Preferences

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Psychiatric advance directives (PADs) are documents by means of which mental health service users can make known their preferences regarding treatment in a future mental health crisis. Many states with explicit legal provisions for PADs have ratified the United Nations (UN) Convention on the Rights of Persons with Disabilities (CRPD). While important UN bodies consider PADs a useful tool to promote the autonomy of service users, we show that an authoritative interpretation of the CRPD by the Committee on the Rights of Persons with Disabilities has the adverse consequence of rendering PADs ineffective in situations where they could be of most use to service users. Based on two clinical vignettes, we demonstrate that reasonable clinical recommendations can be derived from a more realistic and flexible CRPD model. Concerns remain about the accountability of support persons who give effect to PADs. A model that combines supported decision making with competence assessment is able to address these concerns.

Keywords: psychiatric advance directives, advance statements, United Nations Convention on the Rights of Persons with Disabilities, substitute decision making, supported decision making, informed consent, competence, mental capacity

INTRODUCTION

Psychiatric advance directives (PADs) are documents that enable mental health service users to make known their preferences regarding treatment in a future mental health crisis. By now, many countries have explicit legal provisions for PADs. Examples are Australia, Belgium, Canada, Germany, Ireland, India, Scotland, The Netherlands, the United Kingdom, and various states in the United States. With the notable exception of the United States, all these states have ratified the United Nations (UN) Convention on the Rights of Persons with Disabilities (CRPD), adding up to a total of 177 ratifications of the convention to date (1).

The Committee on the Rights of Persons with Disabilities (the Committee) and other important UN bodies consider PADs as important instruments contributing to the realization of the convention's general aims, such as promoting the autonomy and ensuring equal treatment of persons with disabilities (2–4). First efforts have been made to conceptualize PADs under the CRPD (5, 6). In the meantime, critics have raised the concern that the radical CRPD model developed by the Committee and adopted by other UN bodies will have the adverse effect of rendering PADs ineffective in typical mental health crises, thus depriving mental health service users of the opportunity to remain in control of their life and treatment by planning in advance (7–9).

By ratifying international human rights documents, states incur the obligation to incorporate the legal provisions of these documents in domestic law. If the critics are right, the legal provisions for PADs in countries that ratified the CRPD are thus at risk of being rendered ineffective. Thus far, it has not been clarified exactly why the radical CRPD model proposed by the Committee would seriously limit service users' opportunities to plan their treatment in advance. The aim of this article is to determine whether the radical CRPD model promotes or impedes the realization of service users' objectives in completing PADs.

The method for this paper is empirically and clinically informed conceptual and ethical analysis. After reviewing the empirical evidence on service users' attitudes toward PADs, we proceed by outlining two different models of the informed consent process. We first delineate what we have elsewhere called "the combined supported decision making model" (8). Supported decision making in the mental health care informed consent process refers to interventions aimed at enhancing service users' ability to make informed treatment decisions. The combined model combines supported decision making with an assessment of functional decision making capacities and with substitute decision making in cases where a person's functional decision making capacities remain below the threshold of competence despite the provision of support. Then we present what might be called "the radical CRPD model." This model is endorsed by several authoritative UN human rights bodies. According to the model, supported decision making should fully replace competence assessment and substitute decision making. After presenting two clinical vignettes, we derive clinical recommendations from each model. Here we argue that the combined supported decision making model promotes service users' goals in completing PADs, whereas the radical CRPD model renders PADs ineffective in cases where they could be of most use to service users. A more realistic and flexible CRPD model is more conducive to the realization of service users' goals but still raises concerns about the accountability of support persons. We close by giving recommendations for the implementation of PADs which can be supported by both the combined supported decision making model and the flexible CRPD model.

SERVICE USERS' ATTITUDES TOWARD PADS

Proponents of the radical CRPD model and proponents of progressive capacity-based models agree that far-reaching legal reform is necessary to promote the autonomy and ensure the equal treatment of mental health service users. Their disagreement is rather over whether the agenda for legal reform set by the radical CRPD model is conducive to the realization of these aims. This paper focuses specifically on the question whether the radical CRPD model promotes or impedes the realization of service users' objectives in completing PADs. To be able to answer this question, it is crucial that the voices of service users be heard: why do they decide to complete a PAD and what are their expectations of this instrument? We will thus start by reviewing the empirical evidence on mental health service users' attitudes toward PADs.

Service Users' Interest in PADs

Empirical studies consistently report a high interest in PADs among service users. A survey among 1,011 community mental health service users in five U.S. cities found that between 66% and 77% of respondents would want to complete a PAD if provided assistance (10). This study confirmed the findings of earlier studies with smaller sample sizes (11, 12). Research suggests that the interest in PADs is equally high in minority groups. A U.S. study among Latino service users using a structured interview found that 84% of 85 service users expressed interest in completing a PAD (13).

Comparable results were found in other countries. In a survey study among service users and clinicians conducted in New Zealand, 93% of 110 service users agreed that they supported PADs, and 87% indicated that they would participate in a PAD initiative if it were available (14). A survey study among 544 service users with bipolar disorder conducted in England and Wales found that 74% of respondents rated planning their care in advance as very important (15). A similar picture emerged in low- to middle-income countries with a more family-oriented approach to medical decision making. In a descriptive study conducted in India, 67% of 182 participants said they welcomed PADs in the initial interview, and 96% composed a PAD during the study period (16). Likewise, an Indian semi-structured interview study with 45 persons with severe mental disorders found that 89% of respondents were willing to complete a PAD (17).

The interest in PADS seems equally high among service users who have experienced involuntary commitment. In an Irish study, 84% of 67 service users who had been under involuntarily commitment expressed an interest in completing a PAD 1 year after discharge, even if only 56% believed that there are situations in which involuntary treatment with medication may be justified (18). Furthermore, research suggests that endorsement rates remain high after PAD completion. In a U.K.-based randomized controlled trial on joint crisis plans, 90% of the 44 participants in the intervention arm who were interviewed shortly after PAD completion said they would recommend the joint crisis plan to others, and 82% of 50 participants still held this view when interviewed at a 15 months follow-up (19).

The high interest in PADs among service users stands in stark contrast with the actual completion rates. A striking illustration of this is that in the aforementioned survey study in which between 66% and 77% of respondents indicated that they would want to complete a PAD, only 4% to 13% percent had a PAD (10). The low completion rates should not be interpreted as a lack of readiness among service users to complete a PAD. Studies found several barriers to PAD completion, such as lack of knowledge of, information about, and support for PADs (20–22). Research suggests that these barriers can be overcome by providing service users with support in completing PADs. A randomized controlled trial on facilitated PADs involving 469 persons with severe mental disorders found that 61% of participants in the intervention group completed a PAD after participating in facilitation sessions, compared to only 3% of participants in the control group (23).

Service Users' Attitudes Toward PADs

There is data available on service users' reasons for their interest in PADs. One source are surveys carried out among service users irrespective of whether they have a PAD. In a recent survey study conducted in New Zealand, between 90% and 94% of 110 responding service users either agreed or strongly agreed to statements that PADs increase service users' sense of responsibility, empowerment, and autonomy (14). This study confirmed earlier findings. In a U.S. survey study among various stakeholders, 82% of 104 persons with schizophrenia agreed or strongly agreed to the statement that PADs will give them more control over their own lives and over what happens to them in the future (11). In another survey among stakeholders conducted in the U.S., 87% of 32 responding service users agreed to the statement that psychiatric advance directives will help people with mental disorder feel more in control of their lives; in addition, the theme of empowerment, control, and rights was most prevalent in answers to open-ended questions on the benefits of PADs (24). The authors quote the following exemplary answer from a service user:

> *"I think psychiatric advance directives will help persons with mental illness feel some measure of control in their lives because they will be participating in big decisions concerning their lives. They will make the illnesses more real. Patients are taking responsibility for their well-being/recovery."*

There are also data available on whether service users still see empowerment and control as benefits of PADs after they completed a PAD and subsequently experienced a mental health crisis. A quantitative intervention study on facilitated PADs for persons with psychotic disorders did not find a general improvement of perceived treatment self-determination as compared to baseline scores at a follow-up 12 months after PAD completion (25). In other studies, the rates of reported control and empowerment remained high in the course of the study. In the context of a randomized controlled trial on joint crisis plans, 71% (n = 32) of participants who completed a joint crisis plan reported that they felt more in control of their mental health problem at immediate follow-up, and 56% (n = 28) of the participants held this view at a follow-up at 15 months (19). An interview study conducted in the U.S. similarly found that 26 of 30 service users approved of PADs at baseline, and 23 of 27 service users stated empowerment as the reason for their approval (26). Here, too, the initial enthusiasm waned somewhat in the course of the study: 23 of 26 service users who completed a PAD still agreed or agreed strongly that they are satisfied with the PAD, but 12 of them also voiced a variety of concerns.

A possible explanation of the discrepancy between feelings of empowerment at baseline and at follow up is the failure of the clinical team to consider and respect PADs fully. Clinicians may first of all fail to access the PAD because they are unaware of its existence or because it is unavailable at the time of a mental health crisis. Moreover, in many jurisdictions, clinicians must merely take into account a PAD as a source of information for medical decision making and may override it when doing so is judged to be in the service users' medical best interest. Improvements in both policy and practice are thus called for.

A U.S.-based interview study with service users with psychotic disorders who experienced a mental health crisis after PAD completion suggests that service users tend to consider PADs valuable even when they are not consistently followed by the clinical team. In this study, self-determination and empowerment emerged as one of three major themes (27). One service user explained:

> *"Yes, I want control even if I'm not in control. You know? Control issues are always an issue for me when an emergency occurs and if I need to be admitted to a hospital and give up controls, then I still want people to know what's best for me."*

During the interviews, many participants complained that their PADs were not consulted or honored during mental health crises. Nevertheless, most of them still approved of the instrument, with one participant giving the following exemplary explanation:

> *"It's probably one of the best things that's come into mental health in a long time because it gives you rights, while you're sound and while you know what's best for you – and you're the only person that knows what's best for you deep down. […] at least this way you do have some say in your treatment if it's read and people see it and it's legal."*

In cultures with a more family-oriented approach to medical decision making, service users tend to consider empowerment as an important benefit of PADs as well. In an interview study conducted in India, 16 of 18 service users who completed a PAD were happy at being offered the opportunity to document their own wishes and preferences regarding future treatment (28). The authors quote a female service user:

> *"I think writing the PAD will help me have control over future treatment, because I wrote it like a will, for my safety in the future. I liked it and think it will help me have control."*

Empirical evidence from quantitative studies suggests that service users' perception that PADs enable them to stay in control of their care is not merely subjective. A study conducted in the U.S. showed that across 90 crisis events in which a PAD was accessed by the treatment team, the average rate of care consistent with the instructions in the PAD was 67%, which is comparable with the consistency rate for advance directives for somatic care (29).

The Content of PADs

The content of PADs provides a good indication of service users' goals in completing them. Given that PADs were developed originally in the anti-psychiatric movement as a protection from psychiatry (30), a common concern is that service users will use PADs to refuse all psychiatric treatment in advance (31). Although promotion campaigns and PAD templates of some service user organizations give some cause for this concern (32, 33), empirical research showed that the seriousness of the issue should not be overestimated. Of a total number of 402 PADs analyzed in studies carried out in the U.S., the U.K., and India, none contained a general refusal of psychiatric treatment (23, 26, 34–36).

Another common concern is that PADs may contain ambiguous instructions for medical decision making. Research has shown this worry to be unfounded as well. In one study, physicians rated the instructions as feasible and consistent with practice standards for at least 95% of the 106 PADs (36). Another study similarly found that between 83% and 94% of 136 analyzed PADs contained preferences that were rated as feasible and consistent with practice standards (23).

Studies that analyzed the content of PADs found that service users use them to document a variety of preferences regarding their treatment broadly conceived. Preferences regarding medical treatment form a central domain. In a study carried out by Srebnik and colleagues, 106 PADs of users of community mental health services were analyzed: 81% of PADs contained advance consent to treatment with specific medication, 64% an advance refusal of specific medications, and 72% an advance refusal of electroconvulsive therapy (ECT) (36). A study conducted by Swanson and colleagues in which 136 PADs were analyzed yielded similar results: 93% contained advance consent to treatment with at least one specified psychotropic medication, and 77% contained an advance refusal of some specified medications (23). In both studies, none of the analyzed PADs contained general refusal of psychiatric treatment.

The results of these two studies may be biased toward treatment because the service users included in these studies are likely to be well-integrated in the psychiatric system and completed the PADs in groups with the help of a peer trainer and special software, or in facilitated sessions involving semi-structured interviews and guided discussions. Reilly and Atkinson analyzed 55 PADs presented to the Mental Health Tribunal in Scotland (35). This sample may be biased toward treatment refusal, as cases that come before the court are likely to reflect conflicts between service users, substitute decision makers and mental health professionals. In this study, 45% of the analyzed PADs contained advance consent to specified medications, 53% contained advance refusals of specific medications, and 42% contained advance refusals of ECT. Again, no PAD contained an advance refusal of all psychiatric treatment. Although the rate of PADs containing advance consent to medical treatment found in this study was lower than in the other studies, the study confirms that service users use PADs to make known preferences among treatment options rather than to refuse psychiatric treatment altogether.

Hospital admission is another important domain. Although Srebnik and colleagues found that 68% of analyzed PADs documented a preference for alternatives to hospitalization over hospitalization, nearly all respondents recognized the need for hospitalization, with 80% of PADs specifying preferred hospitals in case of admission and 48% specifying hospitals to avoid (36). The study carried out by Swanson and colleagues yielded comparable results: 89% of analyzed PADs contained an advance agreement to hospitalization in at least one inpatient facility, while 61.8% contained advance refusals of admission to particular hospitals (23).

Service users also use PADs to appoint substitute decision makers: 46% of participants in the study conducted by Srebnik and colleagues and around 77% in the study conducted by Swanson and colleagues appointed a substitute decision maker in their PAD (23, 36). Research shows that the involvement of a substitute decision maker increases the likelihood that care is consistent with PAD instructions (29). Note that this finding should not be interpreted as counting in favor of substitute as compared to supported decision making, for it seems plausible to assume that the involvement of support persons or decision making assistants would have a comparable effect. Other things that service users document in their PADs are preferences regarding de-escalation methods and coercive measures as well as treatment-neutral preferences, such as instructions regarding contact persons, persons not authorized to visit during hospitalization, and care of finances, dependents, or pets (36).

A comparable picture emerged from recent studies conducted in India, suggesting that the content pattern of PADs delineated above is not unique to Western and high-income countries (16, 17, 34).

THE COMBINED SUPPORTED DECISION MAKING MODEL

The normative status of PADs varies across models of the informed consent process. We will discuss two models, starting with the combined supported decision making model. This model builds on an influential model of informed consent process developed in medical ethics (37) and extends it to include supported decision making.

Respect for autonomy is a central normative pillar of the model, where autonomy is understood not so much as the ability to do what one wants at a given point of time as the ability to shape one's life according to one's own conception of the good (8). The value of autonomy is recognized in three ways. First, the model recognizes the instrumental value of autonomy: in a society characterized by value pluralism, service users themselves are typically in the best position to assess which of the treatment options maximally promotes their well-being. Second, it recognizes the inherent value of autonomy: irrespective of one's well-being, independently shaping one's life in accordance with one's own conception of the good is valuable in itself. The instrumental and inherent value of autonomy ground health professionals' duty to respect treatment refusals of service users who are competent to consent and to abide by their positive treatment choices as long as these are compatible with practice standards. Third, the model recognizes service users' positive claim on health professionals to be enabled to make autonomous choices. This grounds a duty on the part of health professionals not only to disclose the information about the consequences of the various treatment options in an understandable way but also to enhance service users' decision making abilities by means of supported decision making.

When service users have difficulties grasping the expected consequences of their choices, as may happen in a mental health crisis, the combined model requires mental health professionals to provide decision support. Although supported decision making as such has a broader scope, in the context of the mental health care informed consent process, it refers to all types of interventions aimed at enabling service users to make informed treatment decisions. Examples are everyday interventions (e.g., giving time to adapt or providing tranquil surroundings), medical interventions (e.g., reducing sedative medication or treating dehydration and infection), interventions that improve the quality of the disclosure information (e.g., enhanced consent procedures), or interventions that facilitate communication (e.g., plain language, braille or sign language). Social support is another dimension. Notable examples are support from family or friends, peer support, and advocacy (8). Though tested primarily in the context of research consent, empirical studies showed that relatively simple interventions can enhance consent capacity substantially (38).

The aim of supported decision making in the mental health care informed consent process is to assist service user in decision making and to enable them to make informed treatment choices. The combined supported decision making model recommends using a functional competence assessment to assess whether this aim has been attained (8). The functional criteria for competence developed by Grisso and Appelbaum can be used to assess whether supported decision making suffices to enable service users to make informed treatment choices. On this functional approach, service users are competent (i.e., have mental capacity) to make a treatment decision if and only if they are able to understand the relevant information, appreciate that this information applies to their own situation, rationally process the information, and express a treatment choice (39).

A competence assessment takes about 20 to 30 min. It consists of a semi-structured conversation between service user and mental health professional in which the mental health professional discloses the information relevant to the treatment decision at hand in an understandable way and asks focused questions to probe whether the service user is able to understand and appreciate the information, evaluate the consequences of the treatment options in light of her values and commitments, and communicate a treatment choice (39, 40). Support tools can and should be used during this conversation to enhance service users' decision making capacity.

On the functional approach, competence is a threshold concept defined in terms of a relevant threshold of functional decision making abilities. The concept is binary because it is designed to enable us to answer the practical question of whether persons should be allowed to decide for themselves or whether recourse should be taken to substitute decision making (41). Research shows that competence can be assessed in a non-arbitrary way, with very high levels of agreement among evaluators (42). The functional approach is furthermore non-discriminatory, as the criteria apply to all persons, regardless of whether they have a mental disorder. Though mental disorder is a risk factor for incompetence (40), research showed that many persons with mental disorders are competent to make informed treatment decisions (43), while a substantial share of persons without mental disorders are not able to do so (44). Finally, on the functional approach, determinations of incompetence are valid only at a specific point of time and for a specific treatment decision, and hence there is no place for indefinite or plenary guardianship on this approach.

During a mental health crisis, the provision of support is sometimes insufficient to enable service users to evaluate the risks and benefits of the treatment options in light of their values and commitments and give valid consent. When unable to consent, service users sometimes make choices that are incompatible with their own conception of the good and which disrupt their life plans. Since the combined supported decision making model serves to protect and promote service users' ability to shape their life according to their own conception of the good, it yields that service users' current preferences should not carry decisive authority under the assumed conditions.

The German legal framework employs the term "free will" to refer to the preferences of a person who is able to give valid consent and the term "natural will" to refer to the preferences of a person who is unable to give valid consent (45). Recently, George Szmukler has interpreted the central CRPD notions of "will" and "preferences" in an analogous way (9, 46). The point can thus also be put as follows: the combined supported decision making model serves to protect and promote service users' "will" or "free will" and thus grants the latter priority over service users' "preferences" or "natural will."

It is important to make explicit at this point that the combined model is fully capacity-based and does not permit substituted decision making based on the presence of mental disorder in combination with a perceived risk to self or others. When service users are unable to consent, the model introduces substitute decision making as a proxy for concurrent autonomous decision making. A substitute decision maker should thus decide *on behalf of* the service user who is unable to give consent. To give effect to the service user's "will," the substitute decision maker must make the treatment decision that the service user would make if she were competent to consent. The reason is that under the assumed conditions, these counterfactual preferences will better match service users' own conception of the good than their current preferences. This does not mean, however, that current preferences can be ignored or set aside. Service users who are unable to give valid consent must be involved in the substitute decision making to the extent of their ability, and their preferences should be given careful consideration; it is only that these preferences are not as decisive as the current preferences of a person who is competent to consent.

The proposed standard for substitute decision making is commonly referred to as the "substituted judgment standard" (39–41). It can be contrasted with the so-called "best interest standard," which requires substitute decision makers to make the treatment decision that is in the best interest of the service user. Although the best interest standard can be interpreted in a more subjective and person-oriented way, taking into account service users' will and preferences (9), in clinical practice, it is often interpreted according the medical model as prescribing the treatment that is medically indicated. The two standards come apart because what a service user would want had she been competent to consent need not be in her best interest (or what others take to be her best interest). While in most jurisdictions the law employs the best interest standard, in some jurisdictions substitute decision makers must abide by the substituted judgment standard. Notable examples are Germany (45) and various states in the U.S. (40).

Substitute decisions must be based on concrete evidence rather than speculation. Medical ethicists have proposed that substitute decision makers must base their decision on the following types of evidence (8, 37, 39):

1. advance directive
2. previously expressed treatment preferences
3. service user's values and commitments
4. service user's best interest

The logic of the order is epistemic: a PAD provides the most reliable evidence of what the service user would want if she were competent to consent, followed by orally expressed treatment preferences at a time when the service user was competent to consent, and treatment preferences derived from the service user's values and commitments. The notion of best interest in the last item on the list differs from that in the Mental Capacity Act (2005) in England and Wales. Where in the Mental Capacity Act, the notion of best interest functions as an independent normative standard for substitute decision making and encompasses other items on the above list, here it is construed narrowly and functions as a source of evidence: if there is absolutely no information available about a person's beliefs, values, and preferences and treatment cannot be postponed, as may happen in an emergency situation, providing treatment as medically indicated is most likely to be in accordance with what the person would have wanted had she been competent. This situation is unlikely to occur in psychiatry.

The items are listed in order of priority. This means that substitute decision makers may proceed to the next item on the list only if the previous item is unavailable, unclear, or open to multiple interpretations. An important implication of this is that an unambiguous and specific treatment refusal contained in a PAD must be respected even if doing so is allegedly not in the service user's best interest. In most jurisdictions, by contrast, the law leaves mental health professionals a lot of leeway to override PADs in what they take to be the best interest of service users. The combined supported decision making model challenges this approach. German guardianship law is a notable exception in this respect. If a person has a PAD, then according to the German Civil Code Section 1906a, para. 1 No. 3 BGB, involuntary treatment is permissible only if the treatment is compatible with the PAD (33).

On the combined supported decision making model, PADs fall under substitute decision making. Although there are other ways to spell out their legal force, on the combined model PADs depend on the concept of competence or mental capacity in two ways: PADs are valid only if service users are competent to write a PAD at the time of completion, and PADs enter into application if, and only if, service users are unable to make the treatment decision at hand. On the model, then, competence is a necessary condition for the validity of PADs and incompetence marks the point at which PADs take effect.

PADs can be either "binding" or "guiding." Binding PADs are authoritative directives that directly bind substitute decision makers and mental health professionals. Consequently, binding PADs must be *respected* by substitute decision makers and health care professionals. Guiding PADs are authoritative sources of information about the preferences that service users would have in the circumstances if they were competent to consent. Accordingly, guiding PADs must be *considered* by substitute decision makers and health care professionals. Given that PADs are the first item on the prioritized list of grounds for substitute decisions, substitute decision makers and mental health professionals must normally give effect to the preferences in guiding PADs. Whether a given PAD is guiding or binding depends among other things on the legal context and the quality of its instructions. On the combined model, both types of PAD fall under substitute decision making inasmuch as they provide a basis for decision making that is different from, and hence potentially in conflict with, the current preferences of service users.

THE RADICAL CRPD MODEL

Important UN bodies have a positive attitude toward PADs and advance care planning more broadly conceived. The Committee, for example, claims that "all persons with disabilities have the right to engage in advance planning and should be given the opportunity to do so on an equal basis with others" (2). Other UN bodies share this view. The High Commissioner claims that "instruments such as advance directives or powers of attorney should be promoted" (4) and the UN Special Rapporteur on the rights of persons with disabilities includes advance directives under a number of "supported decision making regimes" that "states must develop […] and intensify" (3).

Recall that on the combined supported decision making model, PADs function within a substitute decision making framework. The aforementioned UN bodies, on the other hand, call for the abolishment of substitute decision making regimes and their replacement by supported decision making arrangements (2–4). The Committee, for instance, claims that states parties have an "obligation to replace substitute decision making regimes by supported decision making," warning us that supported decision making "should never amount to substitute decision making" (2). It is important to note that dissenting opinions on this issue can be found within the UN human rights framework. Notably, the Human Rights Committee and the Subcommittee on Prevention of Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment do not support an absolute ban on substitute decision making and involuntary treatment (9, 47). Our focus in this section is on the radical abolitionist model. For ease of exposition, we will refer to this model as the "radical" CRPD model.

The call for the abolishment of all substitute decision making regimes is premised on a universal recognition of legal capacity. Legal capacity divides into legal standing and legal agency. Where legal standing denotes the ability to hold legal rights and duties, legal agency refers to the capacity to exercise those rights and duties, which can be done by entering into contracts and making legal transactions (2). According to the Committee, "all people, including persons with disabilities, have legal standing and legal agency simply by virtue of being human" (2). Since the act of giving informed consent involves an exercise of legal agency, the universal recognition of legal capacity entails a universal recognition of the right to give informed consent and to have one's treatment decisions respected.

In keeping with this, the Committee rejects the functional approach to competence and holds that "all persons, regardless of disability or decision making skills, inherently possess legal capacity" (2). From this, it follows that it is impermissible to take recourse to substitute decision making when a competence assessment attests that a person's functional decision making capacities fall below the relevant threshold of competence. The Committee rejects competence assessment and substitute decision making because it takes these practices to be discriminatory against persons with mental disabilities. Admitting that service users with substantially impaired decision making abilities sometimes make choices that are incompatible with their own conception of the good, the Committee nevertheless concludes that "at all times, including in crisis situations, the individual autonomy and capacity of persons with disabilities to make decisions must be respected" (2).

From this, it follows that service users' current preferences prevail and, hence, that treatment preferences delineated in PADs may not be prioritized over service users' current preferences. As a result, PADs are neutralized whenever they conflict with current preferences. Here, it is immaterial whether the PADs are binding or guiding. In the case of binding PADs, any current expression of preferences in conflict with those contained in the PAD involves an exercise of legal capacity and thus amounts to a formal revocation of the PAD. In the case of guiding PADs, both the preferences contained in the PAD and the person's current preferences provide evidence for the person's will and preferences, but there is no reason to assign more weight to past preferences documented on paper than to preferences currently voiced by service users.

Let us assess whether the relevant UN bodies accept these implications. The Special Rapporteur on the rights of persons with disabilities refers to advance directives as a supported rather than a substituted decision making arrangement. "Contrary to substitute decision making regimes," she continues to explain, "under a supported decision making arrangement, legal capacity is never removed or restricted; […] support must be provided based on the will and preferences of the individual" (3). The High Commissioner makes the point more explicit: "Even when such instruments [advance directives or powers of attorney] are in force," he claims, "persons with psychosocial disabilities must always retain their right to modify their will and service providers should continue to seek their informed consent" (4). The Special Rapporteur and the High Commissioner thus endorse the view that service users' current preferences constitute a revocation, or at least a modification, of their PAD whenever they conflict with the PAD instructions.

Accordingly, on the radical CRPD model, PADs seem to have legal effect only when service users are not able to express any wishes and preferences at all or when their current preferences are so diffuse that a sufficiently coherent interpretation of them is not possible. This indeed seems to be the Committee's official position. "The ability to plan in advance is an important form of support," it writes, "whereby [persons with disabilities] can state their will and preferences which should be followed at a time when they may not be in a position to communicate their wishes to others" (2). Likewise, the Special Rapporteur on the rights of persons with disabilities claims that advance directives "can be followed at a time when they may not be in a position to communicate [their will and preferences]" (3).

In view of this, the radical CRPD model of advance directives serves persons with mental disability only in a limited way. When in a coma, persons are not able to communicate their will and preferences, and the same may hold for persons in the late stage of dementia. Persons with moderate dementia may be able to express preferences, but these may be so diffuse that they cannot be interpreted in an unambiguous way. The radical CRPD model enables persons to plan in advance for such situations and so to remain in control of their treatment. But it is different with mental health crises. In a mental health crisis, service users typically remain able to communicate their preferences, and these preferences tend to be pronounced and unambiguous. It is quite common, for instance, that despite the support offered, service users in a mental health crisis tell others that they would rather be out on the street than be admitted to hospital. On the radical CRPD model, such pronounced preferences must be interpreted as a revocation of the PAD.

The empirical evidence on service users' attitudes to PADs reviewed in this article suggests that service users show interest in PADs not because they anticipate situations in which they are unable to express their preferences with sufficient clarity, but because they anticipate situations in which they express clear and strong preferences that are incompatible with their deeply held values and commitments. By limiting the scope of application of PADs to conditions in which persons are unable to express their preferences with sufficient clarity, the CRPD model renders PADs ineffective in situations in which they can enable service users to remain in control of their life and treatment.

In closing this section, we must consider a proposal made by the Committee to account for the legal effect of PADs without dependence on the notion of competence or mental capacity. The Committee proposes that "the point at which an advance directive enters into force (and ceases to have effect) should be decided by the person and included in the text of the directive; it should not be based on an assessment that the person lacks mental capacity" (2). In this way, service users can authorize mental health professionals to enforce their PADs against their current preferences. The proposal is thus roughly to conceptualize PADs in general as so-called competence-insensitive self-binding directives, or Ulysses contracts. Other proponents of the radical CRPD model have endorsed the proposal (3, 48), but thus far, it has not been worked out beyond this rudimentary idea.

Competence-insensitive self-binding directives raise a range of serious conceptual and ethical issues (49) which cannot be discussed within the limits of this paper. We shall therefore only briefly indicate why we are not convinced that the proposal is able to solve the problem delineated above. First, research suggests that the type of self-binding directive that can count on most support from service users is competence-sensitive (50, 51). Second, we think that on the radical CRPD model, it will be hard to explain why pronounced current preferences incompatible with instructions in a self-binding directive should not count as a revocation of the directive. These issues must be addressed more fully at another occasion.

CONFLICTS BETWEEN ADVANCE INSTRUCTIONS AND CURRENT PREFERENCES: TWO CASE VIGNETTES

The theoretical disagreement between the two models and their implications for the normative status and effectiveness of PADs is clear, but it remains to be determined to what extent the two models yield different recommendations for clinical practice.

To be able to derive clinical recommendations, we will present two hypothetical case vignettes involving PADs. The vignettes are based on our clinical experience. They involve a service user with schizophrenia and a service user with bipolar disorder, as members of these diagnostic groups are likely to be affected by involuntary measures. The content of the PADs is based on the general pattern emerging from the empirical literature. To reflect the broad range of PAD instructions, we describe one PAD containing preferences regarding medical treatment and one PAD containing treatment-neutral preferences. The vignettes reflect a conflict between the person's PAD instructions and the person's current preferences. Such conflicts occur regularly in clinical practice and allow us to make explicit the differences between the two models.

Case Vignette 1

Daniel, a 23-year-old man with a diagnosis of schizophrenia, is involuntarily admitted to a psychiatric hospital. The emergency services and police report that they were called by the man's family after he had repeatedly bashed his head against the wall in a state of acute agitation. The incident occurred in the apartment where Daniel lives together with his parents and his sister, who is 2 years younger.

Daniel's sister is present at the admission and tells the psychiatrist that she thinks her brother stopped taking his oral medication of 20-mg olanzapine a couple of weeks ago. He told his family that he believed the medication, though essential to treating psychotic episodes, cannot prevent future episodes. She tells the psychiatrist that in the last couple of weeks her brother became increasingly socially withdrawn, talked little to the rest of the family and spent most of the time alone in his room. Judging from the noises she heard from his room, she inferred that her brother slept little at night, and she also noted that he regularly refused to eat and drink, telling the family that he had no appetite.

During this conversation, Daniel sits quietly at his sister's side. He is fairly cooperative and answers most of the questions during the admission interview, though he appears suspicious and avoids eye contact with the psychiatrist. In the psychiatrist's judgment, Daniel has an acute psychotic episode with formal thought disorder, persecutory delusions, and auditory hallucinations, probably triggered by the abrupt stop of medication. She recommends Daniel to restart taking antipsychotic medication, explaining that this is likely to reduce his feelings of anxiety and state of agitation. Daniel suddenly jumps up from his chair and interrupts the psychiatrist, shouting: "I will never take anything from you, I know that you want to poison me!" Attempts to calm Daniel down and enter into a conversation with him fail, and he continues to refuse medication as well as other treatment offers made by the psychiatrist.

Thereupon, Daniel's sister reaches for her purse and hands over an advance directive to the psychiatrist. She tells the treatment team that her brother composed the advance directive shortly after his last inpatient stay somewhat over a year ago. The advance directive contains the following instruction: "In case I become psychotic again, I do not want to be treated with typical antipsychotic drugs, such as haloperidol, because I have experienced many unpleasant side effects of these drugs in the past. I get the most out of a low dose therapy with atypical antipsychotics, such as olanzapine or quetiapine."

Case Vignette 2

Debby is a 46-year-old woman with bipolar disorder who is treated in a psychiatric hospital on a voluntary basis. The reason for her admission in the week before was that some of her best friends had noticed signs of a beginning manic episode: Debby was euphoric, talked a lot, slept poorly, and displayed an increased drive to engage in activities. Two friends shared their worries with her in a conversation at home and proposed to bring her to the psychiatric hospital. Debby agreed, though somewhat reluctantly. She doesn't like staying in the hospital, but she benefited from inpatient treatments in earlier mental health crises and knows many of the mental health professionals working in the hospital.

During one of her previous inpatient stays, Debby had worked out a joint crisis plan with the support of a psychiatrist and a social worker. Among other things, the joint crisis plan contains statements about people with whom she wants to have contact during a manic episode and people with whom she wants to avoid contact. The latter group includes people from work but especially mentioned is her ex-husband Jason. Debby and Jason had been involved in what Debby described to her friends as an abusive relationship. Although they are divorced for some years now, they live in the same neighborhood and visit each other in irregular intervals. Sometimes these visits are enjoyable, but most of the time they end up in serious quarrels.

During the second week of the inpatient treatment, Debby's mental health worsens and her symptoms increase. Euphoria switches to dysphoria and her thoughts become increasingly incoherent. Intermittently, she is very agitated and easily irritable and refuses to take medication, telling the treatment staff that she is going through some serious struggles and has other things to attend to. During the visit of the psychiatrist, Debby tells the psychiatrist that Jason called her on her cell phone and that he will visit her tonight. The treatment team reminds her of her joint crisis plan and recommends her to cancel the visit. Thereupon, Debby gets furious and exclaims: "Do you want to keep me from seeing Jason? I am not ill! If you don't let him in, I'm out of here!"

CLINICAL IMPLICATIONS OF THE COMBINED SUPPORTED DECISION MAKING MODEL

The combined supported decision making model requires mental health professionals to provide support when it is reasonable to believe that service users' functional decision making abilities are (temporarily) impaired. There are reasons to think that Daniel and Debby fail to understand and appreciate the nature and potential consequences of the available treatment options (including the option of no treatment). Believing that the psychiatrist wants to poison him, Daniel seems insufficiently able to see that treatment with atypical antipsychotics was helpful in treating previous psychotic episodes. Debby, on the other hand, seems insufficiently able to appreciate her own mental condition and to estimate the potential negative impact of seeing her ex-husband. The treatment team must provide support to enable Daniel and Debby to make an informed treatment decision. Which form of support is appropriate highly depends on the individual and the context. Concretely, we think that Daniel could profit from giving him time to put his mind at rest and involving a peer support worker in the admission process. For Debby, it could be helpful to contact a friend who can support her and knows about her difficult relationship with her ex-husband.

If the provision of support raises Daniel's and Debby's functional decision making capacities up to the point at which they are competent to make an informed treatment decision, Daniel and Debby can make their own decisions. We think that, if provided adequately, supported decision making can yield this result in many cases. To be able to make explicit the differences between the two models, however, we will assume for the sake of the argument that, despite the provision of support, Daniel and Debby remain insufficiently able to understand and appreciate the implications of the decision they face. The combined supported decision making model yields that a substitute decision must be taken in such cases.

On the combined model, substitute decision making must be guided by the substituted judgment standard and, hence, the preferences that service users would have if they were able to make an informed decision should guide decision making. In both vignettes, the PAD is the most authoritative source of evidence for these preferences. When competent to make an informed treatment decision, Daniel concluded that he wanted to be treated with olanzapine or quetiapine rather than haloperidol in case of a mental health crisis. Similarly, Debby reached the considered judgment that it would be better for her not to be in contact with her ex-husband when in hospital. Regardless of whether the PADs in question are binding or guiding, substitute decision makers and mental health professionals have strong reason to abide by the PADs on the combined model.

The recommendation that follows is that the clinical team should intervene, where the intended outcome of the intervention is that Daniel takes his preferred medication and that Jason does not visit Debby. The answer to the question how the clinical team should intervene is highly context-dependent. The general principle is that mental health professionals should take the least restrictive means to give effect to the PAD and ensure that the risks and burdens of the intervention are clearly outweighed by the expected benefits of its success.

We are inclined to think that using physical compulsion to administer medication to Daniel does not satisfy these prerequisites and that the same holds true for denying Jason access to the hospital. In Daniel's case, the expected benefits of treatment with anti-psychotic medication do not immediately seem to outweigh the potential psychological harms of being subjected to physical compulsion and involuntary treatment. Moreover, it would seem that less restrictive alternatives are available. Various argumentative strategies, or "treatment pressures," have been identified by means of which clinicians can guide service users toward a certain treatment option (52). It would thus be an option to temporarily break off the admission interview, give Daniel the opportunity to calm down, and try to convince him of the benefit of treatment in accordance with the PAD at a later point of time. The option of applying physical compulsion should be contemplated only as a last resort when all less restrictive strategies fail and the conditions in the above-stated general principle are fulfilled.

In Debby's case, denying Jason admission to the hospital could result in an escalation of the situation and might have the unwanted effect of Debby leaving the hospital and visiting Jason of her own accord. It would thus seem that in this case, too, it is preferable to adopt transparent communicative strategies to convince Debby and Jason of the desirability of postponing their meeting. Should these strategies ultimately fail, the clinical team might attempt to arrange a visit of Jason under the supervision of a trusted member of the clinical team. Although this would compromise Debby's PAD instructions, under the assumed circumstances the option seems more faithful to the instructions than any of the alternatives.

It goes without saying that none of these interventions would be appropriate if Daniel and Debby were competent to make the treatment decision at hand. On the combined supported decision making model, all aforementioned interventions fall under substitute decision decision making and, hence, must be guided by the decisions service users would make in the circumstances if they were competent to consent. It should be emphasized that the combined model does not favor treatment over non-treatment. After all, had Daniel's PAD contained a general refusal of psychotropic medication and a preference for admission to a respite house over hospital admission, the combined model would yield that the treatment team have a strong reason to support Daniel in finding a respite house as soon as possible.

When the aforementioned strategies are used by appeal to PADs, it is essential that debriefing takes place afterward. This gives the treatment team the opportunity to explain why the interventions have been used, and it gives service users the opportunity to say whether they find the chosen intervention appropriate. It is recommendable to involve the support person or substitute decision maker in this conversation if service users approve of this. If service users have no support person or substitute decision maker, they can be offered the opportunity to appoint one. PADs should be updated based on the outcome of this conversation.

CLINICAL IMPLICATIONS OF THE CRPD MODEL

Like the combined supported decision making model, the radical CRPD model yields that support must be provided in both vignettes. We have described various forms of decision support in the previous section. We have assumed, for the sake of the argument, that supported decision making only marginally enhances Daniel's and Debby's decision making capacities. Unlike the combined model, the radical CRPD model rejects the concept of competence and denies that there is a threshold of functional decision making capacities below which substitute decision making should be effectuated: the current preferences of service users should be respected, whatever their functional decision making capacity. If no concessions are made, the radical CRPD model yields unequivocal judgments on the vignettes: Daniel's refusal of the medication for which he expressed a preference in his PAD should be respected, and the same holds for Debby's choice to see her ex-husband Jason. The radical CRPD model would thus render both PADs ineffective.

However, even proponents of the radical CRPD model admit that concessions must be made in some hard cases. It is sometimes said that hard cases make for bad law, but in psychiatry hard cases are not marginal or highly exceptional cases. Responding to cases of self-harm, Flynn and Arstein-Kerslake concede that an individual's current preferences "not necessarily represent the true will and preferences of an individual" (53). In such situations, PADs could first of all be used as a means to gently remind service users, as it were, of their deeply held values and commitments. Given the nature of mental health crises, the prospect of success for such gentle reminders seems limited. Flynn and Arstein-Kerslake note, however, that the right to legal capacity is limited by other legal rights and duties. Accordingly, they hold that support persons are permitted to act against the current preferences of a person only if the two following conditions are satisfied: "the support person is acting in an emergency situation and […] supporting the person's wishes would constitute civil or criminal negligence" (53).

Let us return to the vignettes to derive recommendations. It would seem that in neither case the two conditions are satisfied. A support person in Debby's case would clearly not be in an emergency situation, especially given that Arstein-Kerslake and Flynn stress that necessity defenses "need to be extremely limited" (53). The support person would thus have to give effect to Debby's current preferences on Flynn and Arstein-Kerslake's model, and this amounts to rendering her PAD ineffective. Stretching the notion of emergency somewhat, it could be argued that a support person in Daniel's case would be in a situation that qualifies for a necessity defense. Even then, however, it is very unlikely that respecting Daniel's current preferences (i.e., allowing him to go home without medication) would constitute civil or criminal negligence under current laws—and arguably this is even more unlikely under CRPD-compliant laws. The support person must thus give effect to Daniel's current preferences on Flynn and Arstein-Kerslake's model, and this amounts to rendering his PAD ineffective.

Moreover, even if we were to assume that supporting Daniel's current preferences would constitute civil or criminal negligence, the model would not allow mental health professionals to treat Daniel in accordance with his PAD instruction, which is to be given olanzapine or quetiapine rather than typical antipsychotic medication. The reason is that, in keeping with the logic of necessity defenses, Flynn and Arstein-Kerslake hold that involuntary interventions "should never rise to the level of forced medical or psychiatric treatment" (53).

Proponents of the radical CRPD model might admit that their model renders ineffective PAD instructions that deviate from current preferences yet claim that it does not render ineffective PAD instructions that overlap with current preferences. After all, if Daniel's PAD had contained a general refusal of all psychotropic medication, the model's clinical recommendations would be in line with Daniel's PAD instructions. Two things can be said in response. First of all, the empirical evidence reviewed at the beginning of this article showed that service users typically use PADs to express preferences among treatment options and that PADs documenting general refusals of psychiatric treatment are highly exceptional. The radical CRPD model would thus render the bulk of PADs ineffective. Second, even if we were to assume that Daniel's PAD contained a general refusal of psychiatric treatment, the model's recommendation to withhold treatment would not be based on Daniel's PAD but on his current preferences. Indeed, the model would yield the very same recommendation if Daniel had never completed a PAD. The PAD makes no difference.

Bach and Kerzner propose a more realistic and flexible version of the CRPD model (54). Where Flynn and Arstein-Kerslake completely reject the functional approach to competence, Bach and Kerzner propose to use a functional competence assessment to determine an individual's legal status. Individuals are accorded what Bach and Kerzner call "legally independent" status only if their functional decision making capacities meet a certain threshold. When an individual's capacities fall below this threshold, the individual can still exercise legal capacity through a supported decision making status when there is "at least one other person who has personal knowledge of the individual [and who] can reasonably ascribe to the individual's actions, personal will and/or intentions consistent with the person's identity, and can take reasonable consequential actions to give effect to the will and/or intentions of the individual" (54). Thus, if it is reasonable to assume that Daniel's and Debby's PADs instructions are more consistent with their identities (or own conceptions of the good) than their current preferences, Bach and Kerzner's model allows support persons to take reasonable consequential actions to give effect to the PADs. Plausibly, these actions are precisely those that substitute decision makers are permitted to take under the combined supported decision making model.

In view of this, the combined supported decision making model and the flexible CRPD model proposed by Bach and Kerzner seem to converge: just like the combined model, the flexible CRPD model uses a functional competence assessment to determine service users' legal status, and the responsibilities that the flexible CRPD model assigns to support persons under a supported decision making arrangement are the same as those that the combined model delegates to substitute decision makers under a substituted decision making arrangement. The only difference seems to be that proponents of each model call things by a different name. Disputes between proponents of the two models thus appear merely verbal.

An important difference must be noted, however. Since on the flexible CRPD model a service user in a supported decision making status still has legal capacity, consequential actions taken by a support person will count as an exercise of the service user's legal capacity. The concern has been raised that supported decision making may turn into *de facto* substituted decision making (55–57) and that this will not only render service users more susceptible to undue influence but also make it more difficult to make support persons accountable for their actions (8). Efforts have been made to conceptualize supported decision making and to address concerns about undue influence and accountability (53, 58–61). We believe that the combined supported decision making model can address these concerns because it combines the virtues of non-arbitrariness and transparency. The combined model is non-arbitrary because it determines service users' legal status by means of competence assessments, which yield very high levels of interrater reliability. The combined model is transparent because it makes explicit that service users decide for themselves and exercise their legal capacity as long as they are under a supported decision making arrangement and that substitute decision makers decide on behalf of service users under a substituted decision making arrangement.

CONCLUSION AND ACTIONABLE RECOMMENDATIONS

Mental health crises can disrupt the life plans of service users. PADs enable service users to remain in control of their life and treatment, and most service users complete PADs with this aim in mind. Various UN human rights bodies see PADs as a valuable form of support, but we have shown that the radical CRPD model adopted by some of these bodies renders PADs ineffective in situations where they could be of most use to service users. The clinical recommendations that follow from a more realistic and flexible CRPD model differ less from competence-based models than is often assumed, though concerns remain about undue influence and the accountability of support persons who give effect to PAD instructions. A model that combines supported decision making with competence assessment can address these concerns adequately.

There is enough common ground between the combined supported decision making model and the flexible CRPD model for proponents of each model to support the following recommendations:

- Policy makers should make legal provisions for PADs and limit mental health professionals' legal leeway in overriding PADs
- Mental health professionals should actively offer service users the opportunity to complete a PAD and support them in the process of completion
- PADs should be stored in ways in which accessibility to mental health professionals in crisis situations is ensured
- Competence assessments provide non-arbitrary criteria based on which it can be decided whether support persons should support service users' current preferences or give effect to PAD instructions
- Supported decision making must be provided before competence is assessed
- Mental health professionals must consult PADs in crisis situations and honor advance treatment refusals and requests
- All less restrictive alternatives must be exhausted before the option of involuntary treatment is contemplated
- Debriefing should be initiated after treatment has been provided based on a PAD, and PADs must be updated in light of this conversation

The implementation of these improvements in policy and practice will be an important step toward ensuring the equal treatment and promoting the autonomy of mental health service users.

AUTHOR CONTRIBUTIONS

All authors made substantial contributions to the conception and design of the work. AG and MS reviewed the empirical literature, MS reviewed the reports of the relevant UN bodies, and JG and MS constructed the clinical vignettes. MS worked out the central arguments and prepared the various drafts of the manuscript. AG, JG and JV revised the drafts critically for important intellectual content. All authors agree with the paper's arguments and conclusions and gave approval for the final version to be published.

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Reduction of Involuntary Admissions in Patients With Severe Psychotic Disorders Treated in the ACCESS Integrated Care Model Including Therapeutic Assertive Community Treatment

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Objective: The ACCESS treatment model offers assertive community treatment (ACT) embedded in an integrated care program to patients with severe psychotic disorders. Compared to standard care, it proved to be more effective in terms of service disengagement and other outcomes in patients with psychotic disorders over 12, 24, and 48 months. Many patients with severe mental disorders experience involuntary admissions which can be potentially traumatic. In this study, we assessed the effect of ACT on reducing involuntary admissions over an observation period of 4 years.

Method: One hundred seventy-one patients treated in ACCESS were included in this study. The primary outcome was rate of involuntary admissions during 48 months. Secondary outcomes were differences between those with and without involuntary admissions in the 2 years prior to ACCESS regarding change of psychopathology, severity of illness, psychosocial functioning, quality of life, satisfaction with care, medication non-adherence, and service-disengagement.

Results: Of 171 patients, 58 patients (33.9%) were involuntarily admitted to hospital in the past 2 years before entry. During the 4 years of treatment, 16 patients (9.4%) were involuntarily admitted to hospital which was a significantly lower rate compared to the 2 years before inclusion in ACCESS ($p < .001$). Comparing the two groups, larger improvements in severity of illness ($p = .004$) and functional status ($p = .043$) were detected in the group with no history of involuntary admissions. At 4-year follow-up, of the remaining patients, 69.2% ($n = 81$) were full adherent ($p < .001$), compared to 18.9% ($n = 31$) at baseline with no differences between the two groups over the study period (p = .25). Over 4 years, only 13 patients (13.2%) were service-disengaged due to non-practical reasons.

Conclusions: In this long-term study, we were able to demonstrate a reduction in involuntary admissions in four treatment years compared to the 2 years prior to admission to the ACCESS model in patients with severe and mostly multiphase schizophrenia spectrum disorders and affective disorders with psychotic features. This may help prevent patients from suffering from a potentially traumatic experience during treatment in the psychiatric system.

Clinical Trial Registration: www.ClinicalTrials.gov, identifier NCT01888627.

Keywords: psychosis, involuntary admissions, coercive, multiple episodes, follow-up

INTRODUCTION

With the progressive deinstitutionalization of psychiatric care, outpatient care has changed significantly in recent decades. The treatment of patients with the most severe forms of mental disorders, such as psychotic disorders (1, 2), is still demanding. Patients often remain very susceptible to future recurrences after a first episode and experience persistent or even increasing difficulties in symptoms and functioning, even when they are not acutely ill (2, 3). Schizophrenia spectrum and bipolar disorders (especially with comorbid substance use disorders) are associated with one of the highest risks of involuntary hospitalization for patients (4, 5). Compulsorily admitted patients often lack insight into their disorders and the need for treatment (6).

In addition, patients with schizophrenia spectrum or bipolar disorders often experience other forms of coercive treatment, such as seclusion, mechanical restraint, or coercive medication, or more subtle forms, such as informal coercion (7–9). Therapeutic staff have to deal with the difficult ethical and clinical task of patient care on the one hand, and with respect for patients' autonomy in trying to maintain a good therapeutic relationship between these conflicting requirements on the other. Therapeutic self-understanding does not include the use of institutional violence, sometimes necessary to prevent patients from harming themselves or others (10). Even when coercive measures are used to regain patients' autonomy and enable individuals to recover from a severe psychotic episode—for example, coercive treatment of patients is often experienced negatively and may be traumatic (11–13). A negative attitude and acceptance of future psychiatric care, unfavorable treatment courses with high relapse rates, and subsequent involuntary admissions as well as rejection of inpatient and outpatient treatment may possibly develop as negative consequences of such a loss of existential autonomy and coercion (10, 13–19). In addition, the experience and/or use of violence in a psychiatric treatment environment can be potentially negative and even traumatic for therapeutic personnel (20). Apart from those who perceive their coercive treatment as negative, there are a considerable number of patients who consider it to be justified retrospectively. Patients' perceptions of coercive experiences depend, among other things, on when patients are asked about a coercive event, the therapeutic relationship, how coercive measures are communicated to patients, and as how fair and effective they are experienced (12, 21–26). Studies with results on long-term outcomes on other variables such as treatment discontinuation, symptomatology, and functional status are sparse and have shown heterogeneous findings.

In recent years, various outpatient care models have been developed for patients with severe mental illnesses (SMI), which are adapted to their complex treatment needs and generally show positive effects. Most of them comprise multiprofessional teams and individualized, flexible, and domestic treatments such as assertive community treatment (ACT), flexible ACT (FACT), and intensive case management (ICM) (27–35). There are also other approaches, such as the Crisis Resolution Team, which offer temporary treatment (36).

Most study care models are diagnosis-specific and do not provide continuous and unlimited treatment for patients with severe mental disorders (32).

Because patients with SMI have high rates of withdrawal, non-adherence, involuntary admission, and often chronic disease progression, specific, timely, and permanent treatment may be required for patients with psychotic disorders beyond early detection of new episodes and pure crisis management (33, 37). In addition, treatment must overcome structural barriers and fragmentation of treatment systems to ensure therapeutic continuity. The therapeutic alliance depends, among other things, on continuous confidence-building and long-term treatment. Since the therapeutic relationship is one of the most effective factors for successful treatment, this must be ensured (38). In 2006, our group designed and evaluated a diagnosis-specific integrated treatment model with ACT (the ACCESS model) specializing in psychotic disorders (rather than critically ill patients in general), with a focus on maintaining a continuous therapeutic relationship, low-threshold psychotherapy, and family involvement and embedding the ACT team in an integrated care program that allows for need-adapted, time-unlimited treatment (27, 39). Under real-life conditions, the effectiveness of the program was continuously evaluated, and the results were published in various studies (27, 29, 39–49). The evidence of a reduction in involuntary admissions or the use of coercive measures in intensive care models is difficult to compare and ambiguous due to methodological differences in treatment systems used. It is known that unfavorable therapeutic conditions such as high barriers to access to psychiatric care, the availability of home treatment, or crisis intervention teams have an impact on the rate of involuntary admissions (50–52). In addition, involuntary admissions often take place in hours outside regular outpatient services (50–52). Early detection of an emerging episode to prevent a new crisis or rapid worsening of symptoms, combined with early involvement of family members or friends in the home environment, may be key elements of assertive outreach treatment. Although this could theoretically lead to prevention of involuntary admission due to early and rapid treatment, assertive outreach teams also attract critically ill patients who not only have a higher chance of involuntarily being admitted to hospitals but who are better able to recognize the need for treatment that, conversely, can increase or have no effect on the rate of (involuntary) admission (36, 53–56).

Although intensive treatment models can have positive effects on, amongst others, symptomatology, relapses, and hospital stay, there are few studies that assess their direct effects on involuntary admissions with heterogeneous outcomes, partly due to methodological differences, differences between national legislations, and model adherence in the implementation of assertive outreach structures (29, 49, 55, 57–61).

In our present study, we report the frequency of involuntary admission of 171 patients with severe psychotic disorders during 4 years of treatment compared to 2 years of treatment before admission to ACCESS. In addition, we performed outcome comparisons between a group that had involuntary admission and a group that had not been involuntarily admitted to hospital in the last 2 years prior to ACCESS in terms of outcome variables such as course of psychopathology, severity of disease, functional status, quality of life, and satisfaction with treatment. We assume that the rate of involuntary admissions would decrease compared to the 2 years prior to admission over an extended period of 4 years of treatment and that both groups would show similar improvements throughout the study period.

METHODS

Context, Sample, and Inclusion and Exclusion Criteria

The Psychosis Center of the University Hospital Hamburg-Eppendorf is responsible for the treatment of adult patients with severe schizophrenia spectrum disorders (SSD) or bipolar disorder (BD) in an urban catchment area of 300,000 inhabitants.

The ACCESS model is described in detail elsewhere (27) (29). The main features of the integrated care concept, including details on ACT, inclusion and exclusion criteria, and assessments, are presented in **Table 1** and **Table 2**. From May 2007 to March 2012, 171 patients with SSD and BD and severe mental illness were included within the ACCESS model. Of these, 171 patients who

TABLE 1 | Characteristics of the ACCESS treatment and inclusion/exclusion criteria.

Characteristics	Content
Integrated care model	
Catchment area with population size	• Catchment area of the Department of Psychiatry and Psychotherapy of the University Medical Center, 300,000 habitants
Health care facilities within the IC model	• Specialized psychosis inpatient unit with attached day-clinic; acute inpatient unit (closed ward), specialized psychosis outpatient center, ACT team, specialized day-clinic for first-episode psychosis patients in the age range of 15–29, working support outpatient center, 20 private psychiatrists
ACT team fidelity	
Maximum full-time equivalent caseload	• 15–25
Staff fidelity and skills	• Consultant psychiatrists, psychiatrists, psychologists, nurses, social worker
Staff skills	• Diagnosis-specific training in pharmacotherapy, cognitive behavioral (CBT), dynamic, and/or family psychotherapy, pharmacotherapy
Work style	• Shared caseload, patients are discussed in daily team meetings, weekly internal and external supervisions, regularly patient-centered network meetings
Availability	• Extended hours (8 a.m. to 6 p.m. Monday to Friday) and 24-hour crisis telephone and 24-hour emergency service within the Department
Contact with clients	• High frequency face-to-face contacts, assertive engagement, shared-decision making, "no drop-out" policy
Main interventions	• Case management; home treatment; individual, group, and family psychotherapies; psychoeducation; pharmacotherapy; social work
Inclusion and exclusion criteria	
Inclusion criteria:	• Diagnosis of a schizophrenia-spectrum disorder (i.e., schizophrenia, schizophreniform disorder, schizoaffective disorder, delusional disorder, or psychotic disorder not otherwise specified) or bipolar disorder with psychotic features, all assessed with the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) (62) • Aged ≥18 years • Present hospitalization because of an acute illness state as assessed by a psychiatrist • Presence of a certain severity of illness as assessed with the Brief Psychiatric Rating Scale, 24-item version (BPRS),(63) with (1) BPRS total score ≥40 points and (2) fulfillment of 1 of the following eight criteria: ≥6 points on item 10 (hallucinations); ≥6 points on item 11 (unusual thought content); ≥6 points on item 15 (conceptual disorganization); ≥ 10 total points on items 3 and 4 (depressive-suicidal syndrome); ≥6 points on item 4 (suicidality); ≥15 total points on items 8, 9, and 21 (manic syndrome); ≥15 total points on items 6, 12, and 20 (disruptive behavior syndrome); or ≥15 total points on items 13, 16, and 17 (negative syndrome).
Exclusion criteria:	• Psychotic disorders due to a medical condition were excluded.

TABLE 2 | Assessments and measures.

Assessments and measures	Details
Fidelity of the ACT team	Fidelity of the team to the assertive community treatment model was assessed yearly with the Dartmouth Assertive Community Treatment Scale (64). The DACTS has 28 criteria and 3 subscales [(1) human resources: structure and composition, (2) organizational boundaries, (3) nature of services]. The maximal score on the DACTS is 5, representing a perfect implementation of all ACT principles. At initiation of ACCESS, the total score was 4.5 and varied yearly between 4.2 and 4.6 points, indicating that fidelity of the treatment model was good.
Fidelity of ratings	Trained raters independent of the treatment team to avoid bias. All raters received extensive training, particularly for SCID-I interviews, BPRS, CGI-S, and GAF.
Assessment time points	Baseline, week 6, and months 3, 6, 12, 18, 24, 30, 36, 40, and 48
Diagnoses	Diagnoses of the psychotic disorder and comorbid axis I disorder(s) were assessed with the SCID-I (62).
Service disengagement	Service disengagement for non-practical reasons was considered to be present if a patient repeatedly refused further treatment despite the need and several attempts of reengagement (phone calls to patient and potentially home visits by the assertive community treatment team) (33).
Service use data	Treatment contacts consisted of face-to-face meetings as well as emails/letters, telephone calls, and contact with institutions or family members. Furthermore, hospital days (inpatient and day-clinic treatments) were recorded for each year of treatment. All service use data are presented for patients being actively treated in each year (i.e., excluding service-disengaged patients).
Baseline assessments	• Sociodemographic, functional, and pretreatment characteristics using the German version of the Early Psychosis File Questionnaire (65) • Employment/occupation using the Modified Vocational Status Index (MVSI) (66) and the Modified Location Code Index (MLCI) (66). "Employed/occupied" comprised paid or unpaid full- or part-time employment, being an active student in university, a full- or part-time volunteer; "independent living" comprised living alone, with a partner, or with peers. The MVSI and MLCI are scales rated from 1 to 7, with lower scores indicating a better vocational status and a better ability to live independently. • Duration of untreated psychosis with the Duration of Untreated Psychosis Scale (67–69) • Prevalence of previous inpatient treatment, lifetime involuntary admission, and admission within the 2 years before ACCESS were assessed by interviewing patients, relatives, and health service staff previously responsible for the patient. Data were validated by cross checking the hospital database. Involuntary admissions were due to danger to self or others. • Medication adherence was assessed using the criteria of Kane et al. (70). Therapists rated their patients as being fully adherent in the last 4 weeks if taking ≥ 80% of their prescribed medications, partially adherent when taking 20–80%, and nonadherent when taking ≤ 20% of the prescribed medications.
Baseline and follow-up assessments	• Psychopathology using the BPRS at baseline and every 6 months • Severity of illness using the Clinical Global Impressions—Severity of Illness scale (CGI-S) (71) • Level of functioning using the Global Assessment of Functioning (GAF) Scale(72) • Quality of life using the 18-item Quality of Life Enjoyment and Satisfaction Questionnaire (QLES-Q-18) (73) • Patients' satisfaction with their care using the Client Satisfaction Questionnaire (CSQ-8) (74) • Medication adherence (see previous paragraph above) (70)

were followed-up for 4 years were analyzed. All treated patients (N = 171) participated in the clinical routine assessments. The study was conducted in accordance with the latest version of the Helsinki Declaration, and written informed consent of the participants was obtained. All patients treated in the ACCESS model agreed that their data could be used in the ACCESS-II study whenever they were sufficiently stable, and the ability to consent was determined by a counseling psychiatrist. The ethics committee of the Hamburg Medical Association approved the observational study (registration number: PV4059). The study was registered at ClinicalTrials.gov (NCT0188868627).

To evaluate involuntary admissions before and after inclusion in the ACCESS program, we used a pre-post-mirror comparison design. We decided to evaluate a longer observation period of 4 years in order to better detect differences between the time before and after admission and between the two groups. Involuntary admissions were assessed 2 years before admission and during the 4-year observation period. Involuntary treatment included compulsory admission based on (1) the "Hamburger PsychischKrankenGesetz" (HambPsych KG; §12 and §9) with patients who meet the criteria of acute risk to themselves or others from a mental disorder initiated by a physician or psychiatric hospital ordered by law, or (2) the Bürgerliches Gesetzbuch (BGB) with compulsory admission initiated by a parent or guardian under §1906. While both actions require a very acute symptomatology, compulsory admissions of the second type cannot be performed if there is solely a danger for others. Both actions, which lead to involuntary admissions to hospitals, require the opinion of a psychiatrist and must be approved by a judge.

Statistical Analysis

Descriptive baseline differences between diagnostic groups were assessed *via* independent-samples t-tests for continuous dependent variables. Categorical variables were assessed with chi-square tests. To compare baseline with the 48-month follow-up for the binary outcomes (e.g., involuntary admissions), we used McNemar's test. We evaluated the changes from baseline (admission to ACCESS treatment) *via* mixed-model repeated measures, considering the follow-up times as repeated measures, the patients as the random effect, the group (with *vs*. without involuntary admissions 2 years before baseline) and time as fixed effects, and the baseline values of the dependent variable as covariates. Outcomes were changes from baseline for BPRS total score, CGI-S score, GAF, Q-LES-Q-18, and CSQ-P. We examined the interaction between time and group. If the interaction was not significant, the interaction term was eliminated from the model. We used the baseline values of the dependent variables

(BPRS total score, CGI-Severity score, GAF, Q-LES-Q-18, CSQ-8 P) as covariates to minimize variance (75). The main effects (F), significance levels (p), and estimated marginal means (EMM) and 95%-confidence intervals (CI) are reported. The level of significance was set at p < .05, two-sided. Statistical analyses were performed using SPSS version 20.0 (IBM Corp, 2011).

RESULTS

Baseline Characteristics

One hundred and seventy-one patients with SSD or BD (42.7% male; mean age = 42.3 years; SD 13.4) were treated in the ACCESS model and participated in the ACCESS-II study. Baseline details are displayed in **Table 3**.

Of all 171 patients, 23 (13%) did not have any psychiatric inpatient treatment before inclusion in the ACCESS model. Furthermore, as 141 (85%) of the patients already had multiple episodes of their illness, we assume that most of them had contact to the treatment system and had been treated with different forms of psychopharmacological and psychotherapeutic interventions. However, we could not assess this question in detail, as detailed data on prior outpatient treatment were not available.

Patients with both schizophrenia-spectrum disorders (n = 147) and BD (n = 24) were severely ill (high CGI-S and BPRS scores and low GAF scores). Quality of life and satisfaction with care before entry into the ACCESS treatment model were low; 58 patients (34%) had involuntary admissions to inpatient treatment in the past 2 years before inclusion in ACCESS, and only 18.1% (n = 31) were adherent to their most recent medication. Patients with a recent history of involuntary admissions were significantly older (45.9 *vs.* 40.5 years; p = 0.012), less adherent (8.6 *vs.* 24.3%; p = 0.02) with the last medication, and had higher scores on the BPRS Scale (84.1 *vs.* 77.5; p = 0.035) than the patient group without involuntary admissions.

TABLE 3 | Baseline variables.

Demographic details	All patients(N = 171)	No history of involuntary treatment (n = 113)	2 years before ACCESS history of involuntary treatment (n = 58)	p-value
Age, mean (SD)	42.31 (13.36)	40.49 (12.70)	45.86 (14.01)	**.012***
Sex, n (%), male	73 (42.7)	45 (39.8)	28 (48.3)	.329
Partnership, n (%), single	115 (67.3)	78 (69.0)	37 (63.8)	.304
Education years, mean (SD)	11.08 (1.80)	11.21 (1.83)	10.81 (1.74)	.168
Completed professional education, n (%)	110 (64.3)	76 (67.3)	34 (58.6)	.321
Employment/occupation, n (%)	30 (17.5)	23 (20.4)	7 (12.1)	.207
Living independently, n (%)	154 (90.1)	100 (88.5)	54 (93.1)	.426
Illness details				
First episode psychosis, n (%)	26 (15.2)	21 (18.6)	5 (8.6)	.115
Affective psychosis, n (%)	52 (30.4)	31 (27.4)	21 (36.2)	.292
Comorbid psychiatric disorder at entry, n (%)	156 (91.2)	102 (90.3)	54 (93.1)	.776
Substance use disorder (SUD) lifetime, n (%)	117 (68.4)	72 (63.7)	45 (77.6)	.082
Other comorbid disorder lifetime, n (%)	132 (77.2)	88 (77.9)	44 (75.9)	.848
Comorbid somatic disorders at entry, n (%)	138 (80.7)	91 (80.5)	47 (81.0)	1.00
Family history of psychiatric disorder[a]				
Any psychiatric disorder, n (%)	89 (52.0)	60 (53.6)	29 (52.7)	1.00
Psychotic disorder, n (%)	43 (25.1)	30 (26.8)	13 (23.6)	.710
Insight into illness before IC, n (%)	106 (62.0)	72 (64.3)	34 (58.6)	.507
Suicide attempts in the past, n (%)	68 (39.8)	44 (38.9)	24 (41.4)	.869
Suicidal thoughts at entry, n (%)	67 (39.2)	43 (38.1)	24 (41.4)	.741
Forensic history, n (%)	13 (7.6)	9 (8.0)	4 (7.1)	1.00
Traumatic adversities				
Any traumatic adversity in the past, n (%)	118 (69.0)	80 (70.8)	38 (67.9)	.724
Traumatic adversities before age 18, n (%)	96 (56.1)	62 (54.9)	34 (58.6)	.745
Duration of untreated illness				
DUP, median in weeks (quartiles)	21.86 (8.57; 56.64)	24.79 (8.43; 55.36)	21.57 (8.65; 104.29)	.719
DUP, week mean (SD)	57.97 (82.43)	56.34 (80.66)	61.18 (86.44)	
DUI, week mean (SD)	212.94 (211.84)	231.61 (261.53)	176.27 (199.09)	.109
DUI, median in weeks (quartiles)	152.14 (52.21; 280.50)	162.57 (53.07; 329.21))	104.43 (52.14; 230.36)	
Full adherence with last medication, n (%)	31 (18.1)	26 (24.3)	5 (8.6)	**.020***
Baseline scores of assessment scales				
BPRS total score, mean (SD)	79.71 (19.37)	77.48 (18.50)	84.07 (20.44)	**.035***
CGI-S-score, mean (SD)	5.79 (0.90)	5.76 (0.86)	5.84 (0.95)	.561
GAF-score, mean (SD)	36.16 (11.24)	36.57 (10.88)	35.36 (11.96)	.509
Q-LES-Q-18-score, mean (SD)	2.26 (0.66)	2.27 (0.68)	2.25 (0.62)	.881
CSQ-8 P-score, mean (SD)	2.78 (0.59)	2.78 (0.59)	2.80 (0.60)	.818

*DUP, duration untreated psychosis; DUI, duration untreated illness; BPRS, Brief Psychiatric Rating Scale; CGI-S, Clinical Global Impression scale—Severity score; GAF, Global Assessment of Functioning scale; CSQ-8 P, Client Satisfaction Questionnaire-8 (patient version); Q-LES-Q-18, Quality of Life Enjoyment and Satisfaction Questionnaire. [a]First and second-degree relatives. *p < .05.*

Rates of Involuntary Admissions During 4 Years of Treatment

Of those being involuntarily treated in the past 2 years before entry, 47 patients had a SSD (32.0% of the whole SSD-group) and 11 patients were diagnosed with a BD with psychotic symptoms (45.8% of the whole BD-group) (p = .184). During the 4 years of treatment, 16 patients (9.4%) were involuntarily admitted to hospital which was a significantly lower rate (58 patients; 34%) compared to the 2 years before inclusion in ACCESS (p < .001). Of those being involuntarily admitted during 4 years of treatment, 14 patients had a diagnosis of a SSD (9.5% of the whole SSD-group) and 2 patients had BD with psychotic symptoms (8.3% of the whole BD-group).

Clinical Course of Patients With and Without Involuntary Admissions in the 2 Years Prior to ACCESS

All follow-up assessments during the 4 years indicated significantly improved psychopathology, illness severity, global functioning, and quality of life in patients (**Table 4**). Comparing the two groups, larger improvements in severity of illness (p = .004) and functional status (p = .043) were detected in the group with no history of involuntary admissions 2 years before ACCESS, compared to the group without involuntary admissions, between baseline and year 4. No significant differences were found on the course of psychopathology and quality of life. Regarding satisfaction with treatment, the CSQ-8 scores indicated a significantly better than baseline satisfaction with care, with a mean rating of "good" at 12- and 24- and 48-month follow-ups with no differences between the groups.

At 48-month follow-up, of the remaining patients, 69.2% (n = 81) were full adherent (McNemar's test, p < .001), compared to 18.9% (n = 31) at baseline with no differences between the two groups over the study period (p = 0.25).

Furthermore, in the whole group, significantly more patients were employed/occupied after 48 months (n = 35; McNemar's test, p = 0.036), while rates of living independently remained stable (n = 88, p = .332). There were no significant differences between the two groups regarding both variables.

Service-Disengagement

Over the 48-month treatment period, 13 patients (13.2%) were service-disengaged after a median of 79.1 weeks (quartiles 36.9–150.6) due to non-practical reasons (refused treatment contact, disengaged from study despite several attempts to engage them). Of these 13 patients, 8 (61.5%) had an involuntary admission in the 2 years before ACCESS and 3 (23.1%) during the ACCESS treatment. Furthermore, 41 patients (24.0%) dropped out of the study due to practical reasons [moved out of catchment area: 15 patients (36.6%); moved to sheltered housing: 13 patients (31.7%); transition to other service: 10 patients (24.4%); change of health insurance company: 1 patient (2.4%); change of diagnosis: 2 patients (4.9%) after a median duration of treatment of 91.4 weeks (quartiles 40.9-130.1)]. Of these 41 patients, 13 (31.7%) had an involuntary admission in the 2 years before ACCESS and 10 (24.4%) during the ACCESS treatment.

DISCUSSION

The ACCESS model provides treatment as a temporally unlimited care model and is delivered to a sample of critically ill patients, especially with recurring SSD and BD with complex treatment needs.

In this study, we focused (1) on the rates of involuntary admissions during long-term treatment and (2) on whether those with or without involuntary admissions prior to ACCESS differ in other outcome parameters such as symptomatic progression, functional status, quality of life, and satisfaction with treatment. In addition, we analyzed differences on employment and living standards.

We were able to show that the rate of involuntary admissions decreased significantly during ACCESS treatment over 4 years. While in the 2 years prior to ACCESS one in three patients experienced involuntary admission, the rates were reduced to 9.4% over 4 years of treatment. Most patients involuntarily admitted to hospital were diagnosed with SSD, which is consistent with other studies showing that patients with SSD belong to a

TABLE 4 | Course of illness over 4 years.

Measure	Baseline		24-month follow-up		48-month follow-up		MMRM		
	No	Yes	No	Yes	No	Yes	Time effect, F	Group effect, F	Time x Group, F
BPRS total score, M (SD)	77.5 (18.5)	84.1 (20.4)	48.5 (9.9)	52.6 (14.1)	46.2 (8.9)	51.0 (13.6)			
EMM, SE			−28.8 (1.0)		−31.2 (1.1)		12.1***	0.7	ns (1.5)
CGI-Severity score, M (SD)	5.8 (0.9)	5.8 (1.0)	3.9 (0.9)	4.1 (1.1)	3.6 (1.0)	3.8 (1.1)			
EMM, SE			−3.2 (0.2)	−3.0 (0.3)	−4.1 (0.2)	−4.8 (0.3)	17.1***	0.2	2.7**
GAF, mean (SD)	36.6 (10.9)	35.4 (12.0)	60.7 (11.0)	57.1 (13.0)	65.0 (12.2)	61.2 (13.6)			
EMM, SE			23.8 (1.7)	19.9 (1.6)	28.3 (1.3)	24.5 (1.9)	12.6***	3.8	1.9*
Q-LES-Q-18, M (SD)	2.3 (0.7)	2.3 (0.6)	3.3 (0.6)	3.3 (0.5)	3.4 (0.5)	3.3 (0.6)			
EMM, SE			1.0 (0.1)		1.1 (0.1)		4.2***	0.1	ns (1.7)
CSQ-8 P, M (SD)	2.8 (0.6)	2.8 (0.6)	3.2 (0.5)	3.3 (0.5)	3.2 (0.4)	3.3 (0.5)			
EMM, SE			0.4 (0.0)		0.4 (0.1)		1.5	0.6	ns (0.9)

*BPRS, Brief Psychiatric Rating Scale; CGI-S, Global Clinical Impression scale—Severity score; GAF, Global Assessment of Functioning scale; Q-LES-Q-18, Quality of Life Enjoyment and Satisfaction Questionnaire; CSQ-8 P, Client Satisfaction Questionnaire-8 (patient version); M, mean; SD, standard deviation; EMM, estimated marginal mean; SE, standard error. *p < .05; **p < .01; ***p < .001.*

high-risk group for involuntary admissions. Compared to the group of patients with SSD, the rates of those with BD have decreased significantly compared to the 2 years prior to ACCESS treatment, so it appears that these patients benefit particularly from the need-adapted and fast-response treatment system that offers high-frequency home treatment, including psychotherapy and early family involvement. Our results are consistent with other studies showing a reduction of coercive measures during intensive outpatient treatment (29, 49) (58, 61), but the results of other studies are heterogeneous (56, 60). These are due to methodological differences, e.g., different treatment approaches/systems, different national legislations, patient characteristics, follow-up time, model fidelity, and therefore difficult to compare. Nevertheless, the CRT in the study by Johnson et al. did not lead to a reduction in involuntary detentions, and no difference in coercive measures was found in the OPUS study, in which ACT was offered, and compared with usual treatment (55, 59). The availability of low-threshold and high-frequency outpatient treatment and crisis resolution teams led to a reduction in involuntary admissions in the study by Juckel et al. (52, 62). On the other hand, there are studies showing an increase in the frequency of involuntary hospital admissions (56, 60), probably due to the group of patients (1) in which mainly seriously ill patients at high risk of involuntary admission are treated and (2) in which those who would normally not reached by the psychiatric treatment network can be identified and then treated, often with a first compulsory hospital treatment. In addition, there is a group of patients who would not have entered the psychiatric treatment system under "treatment as usual" circumstances and who are difficult to treat even in intensive care approaches, but who are nevertheless contacted by assertive outreach teams and then voluntarily admitted to hospital.

Although causal attributions are not possible due to the absence of a control group, we assume that some factors contribute to the observed significant decreases in compulsory hospital admissions for patients with complex treatment needs, high co-morbidity rates, and high chances of treatment discontinuation and non-adherence (49).

It can only be assumed which of the factors are related to the reductions of admissions. We believe that treatment should be offered openly and need-adapted with a small enough case load per case manager to allow for multiple outpatient contacts per week. The treatment team should be committed to psychotherapy and family involvement and should be recovery oriented. The most important points are the therapeutic alliance and the ability to intervene early, both factors being related to the high-intensity and ongoing treatment.

Although we lack specific empirical evidence from our data, continuous treatment seems especially important with a high number of treatment contacts, leading to a well-established treatment alliance between patients and their therapists, the low-threshold availability of the assertive outreach team, with rapid detection and response to emerging crises, is among the key elements of ACCESS that in our view contribute to reducing involuntary admissions in our patients. In addition, the early and intensive involvement of family members and other key individuals, as well as the recovery-oriented psychotherapeutic approach, may further have contributed to promoting treatment engagement. Other factors mentioned in the study by Burns et al., which do not explicitly contribute to a reduction in compulsory admission but in number of inpatients days, can also be found in our treatment approach: regular home visits, a high proportion of home contacts, smaller patient-to-therapist ratio, responsibility for health and social affairs, and multidisciplinary teams (76).

Confirming the results of our previous study, the psychopathology of the patients, the severity of the disease, the functioning, and the quality of life improved overall during the 4-year treatment period (29, 49). Although difficult to compare with each other because of differences in sample composition and the offered care model itself, other trials have shown that intensive treatment can improve and stabilize patients with severe mental illness—as long as it is actively and continuously offered (75, 77). We cannot deduce causality from our non-randomized single-group design, but we believe it is worth providing affordable and flexible but highly specific long-term care for patients with first and multiple episode psychosis (78). The group with involuntary admissions prior to ACCESS had fewer improvements in severity and functional status than the other patients. The only fundamental difference we found was that these patients were older, had higher baseline values on the BPRS scale, and had lower adherence rates to their previous medication. Non- or partial adherence with psychopharmacological treatment is one of the major risk factors for relapses (79, 80), which significantly reduces patients' psychosocial and occupational functioning and negatively affects their quality of life (79, 81, 82). Psychopharmacological treatment, as an integral part of an integrated framework for social and psychological care, can help to overcome these impairments and is highly effective (83). Non-adherence with treatment is, however, particularly frequently observed in patients with schizophrenia (80, 84, 85) with a significantly increased risk of relapse (86). Even small gaps in medication intake can have a negative impact on the outcome, since discontinuation of medication for only 1 to 10 days in a period of 1 year (partial adherence) was associated with a significantly increased risk of hospitalization with a quota ratio of 1.98 (87). Partial adherence, such as intermittent medication intake, also leads to a 3-fold higher relapse risk in stable patients (88). Adherence rates increased significantly during treatment, and we found no persistent differences in medication use between the two groups.

Quality of life was not significantly influenced by previous involuntary admissions, a finding also found in other studies (89, 90). In the study by Ohlenschlaeger et al., the patients in integrated treatment, who are not directly comparable to our study due to the focus on patients of the first episode, showed a better quality of life compared to other treatment models (91).

Satisfaction with the treatment was also "good" in all patients without group differences. Treatment satisfaction is influenced by many factors but seems to be more related to the subjectively perceived degree of coercion during admission and treatment than to the objective (documented) extent of coercive measures (92). We did not measure levels of perceived coercion, but it is interesting in the context of intensive assertive outreach treatment that, among other factors, viewing the hospital as ineffective and other treatments as more appropriate and involving patients in the decision-making and treating them with respect may reduce perceived coercion (93). As our treatment model involves patients intensively in decision-making, this could have influenced ratings of satisfaction with treatment.

The disengagement rate of services over 48 months remained very low over the 4 years at 13.2%, which was slightly higher than in the previous 4-year study (8.7% disengagement rate). Insofar, in the years since the beginning of ACCESS, we had a constant afflux of patients. Therefore, the team increased from one multiprofessional team consisting of 4 full-time team members in 2007 treating 64 patients to 10.7 full-time team members in the year 2019, who work in 3 multiprofessional teams treating 228 patients. We were creating new small teams to achieve that every team member knows each patient and to make sure that personal treatment continuation is guaranteed.

Strengths and Limitations

Due to the observational, non-randomized study design, more severely ill patients with higher rates of comorbidities were included, who probably would not have provided consent to participation in a (randomized) controlled trial. During such a long follow-up period, it was possible to assess the long-term effects of continuous treatment beyond the initial course of illness. The biggest limitation, of course, is the lack of a control group in the ACCESS-II study. Therefore, a direct causal effect of the treatment program on the results of the key outcome parameters cannot be drawn. Instead, other factors may also be responsible for the positive results found in patients treated in the ACCESS model over 4 years. Therefore, the descriptive results must be interpreted with cautions. We decided, after a prospectively controlled study confirmed the superiority of the ACCESS model over standard treatment over a period of 1 year, that only an observational and uncontrolled long-term study can be considered ethical. Another unavoidable limitation was the non-blind assessment of patients. Although we have used external advisors to ensure the quality of evaluation, we probably could not completely avoid a social desirability bias and thus positive evaluations of psychopathology. One major outcome—the rate of involuntary admissions—was not influenced by social desirability or nonblind assessments. However, patients who dropped out due to non-practical reasons could have impaired the beneficial results since it is not known whether they would have been involuntarily admitted during the observation period. This cannot be ruled out, but it seems unreasonable because they dropped out after having been in treatment for almost 2 years. Since the sample size of the involuntary treatment group is rather small, analyses of differences between the two groups may be underestimated. In addition, we did not include homeless people, so the sample is not fully representative and is limited by the exclusion of homeless people. These were treated elsewhere by definition of the catchment area. In addition, we cannot exclude the possibility that other important confounding factors were not assessed, including the specific impact of different psychopharmacological treatments. In our treatment model, patients are actively engaged to participate in treatment decisions, and dose-reductions are facilitated in close consultation with the therapist. Therefore, it is not likely that the results are due to general increases in doses of outpatient medication.

CONCLUSION

In this long-term study, we were able to demonstrate a reduction in involuntary admissions in four treatment years compared to the 2 years prior to admission to the ACCESS model in patients with severe and mostly multi-episode SSD and affective disorders with psychotic features. This may help prevent patients from suffering from a potentially traumatic experience during treatment in the psychiatric system. The ACCESS model, which was offered in a timely and unlimited manner, provided results related to several clinically important outcome parameters, with low disengagement and significantly improved medication adherence rates. We hypothesize some factors to explain these positive outcomes. Psychosis-specific ACT, embedded in an integrated care system that offers a wide range of treatment options for psychotic disorders and comorbidities flexibly and rapidly, with a focus on recovery-oriented psychotherapy and family involvement, could have contributed to strengthening the therapeutic alliance that, together with the above-mentioned treatment system, could serve as a protective factor. Treatment should be offered on a need-adapted basis with a low caseload to allow a high frequency of contacts. While the results are promising, to draw causal conclusions, stronger evidence including a long-term RCT would be required. Nevertheless, our study adds important knowledge that there is an association of intensive and ongoing home treatment and a significant reduction of involuntary admissions during long-term treatment of patients with severe mental illness.

DATA AVAILABILITY STATEMENT

The full dataset of the analysis is not publicly available due to the rules of data protection of our hospital.

ETHICS STATEMENT

The ethics committee of the Hamburg Medical Association approved the observational study (registration number: PV4059). The study was registered under ClinicalTrials.gov (NCT0188868627).

AUTHOR CONTRIBUTIONS

Conceptualization: DS, FR, TB, AK, ML; data curation: FR; data analyses: FR; investigation: DS, FR, AB, JG, KW, TB, AK, ML; methodology: BS, FR, project administration: JG, AK, ML; supervision: ML; writing original draft: DS, FR, AK, ML; writing, review and editing: DS, ML, FR, AB, JG, KW, AR, CH, TB, AK; contribution: all authors contributed to manuscript revision, read and approved the submitted version.

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Compulsory Interventions Are Challenging the Identity of Psychiatry

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Compulsory interventions severely restrict constitutional rights of the patients. They are exceptional measures only to be considered under strict and clearly defined ethical and juridical conditions. They do confront mental health professionals with difficult questions challenging their individual professional identity as well as the identity of psychiatry in general. This complex field is discussed in reference to the conceptual history of psychiatry, to different contemporary approaches to the notion of autonomy, and to three ethically demanding issues: autonomy and care, psychiatry and society, personhood and interpersonal relations. Engaging open mindedly in these debates may be cumbersome for psychiatry, but will yield a substantial return, particularly regarding its identity and acceptance by society.

Keywords: autonomy, professional identity, identity of psychiatry, ethics in psychiatry, compulsory interventions

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INTRODUCTION

The issue of compulsory interventions in psychiatry is usually regarded as a mainly ethical and practical topic. However, this paper will link it with the fundamental question of psychiatry's identity as a medical field in clinical and scientific contexts. In recent years—albeit, of course, not for the first time in the history of psychiatry—this conceptual area generated intense debate and controversy. Two different epistemological levels are distinctively intertwined: the *theoretical level* reflecting upon the "object" of psychiatric work in therapeutic or research activities on the one hand, and the *practical level* focusing on how psychiatric services can be optimally organized within the competing demands of being effective, adequate, and economically justifiable[1] on the other hand. Both will now be briefly illustrated as for their conjunction with compulsory interventions.

Psychiatry's self-understanding is challenged on the *theoretical level* when trying to define the proper "object" the field is dealing with: Is it the individual person (biographical and hermeneutic approaches), the person's bodily existence, especially his or her central nervous system (neuroscientific approaches), or the person's environment, ranging from close relationships to society as a whole?

On the *practical level*, the last decades brought about a remarkable paradigm shift from strong, if, of course, benevolent paternalistic attitudes to an explicit emphasis on patient autonomy and informed consent, both in clinical work and in research. Such a strong and, at times, poorly reflected notion of autonomy has been questioned repeatedly by indicating potentially negative consequences of "overvaluing autonomous decision making" (1, 2). In this context, the issue of "open psychiatry" is to be mentioned. At present, there is a broad consensus that the plain postulate to "open the wards" cannot be sufficient, unless it takes specific local conditions (including regulatory ones) into

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[1] In Switzerland, exactly these mandatory prerequisites of any medical intervention that has to be paid for by basic insurance are explicitly mentioned in the federal law on health insurance ("Krankenversicherungsgesetz," KVG). Since this law came into effect in 1994, the "WZW-criteria" (for the German terms "Wirksamkeit, Zweckmaessigkeit, Wirtschaftlichkeit") gained considerable influence on health policy and on the conceptualization of health services also in psychiatry and psychotherapy.

account. Furthermore, the United Nations' "Convention on the Rights of Persons with Disabilities" (3) prominently represents the new paradigm: Not the handicapped person has to prove his or her ability to be reintegrated into society, but—the other way round—it is society's responsibility to argue why any person, with or without handicap, should *not* be its unquestioned, in a way "normal" part[2].

This demonstrates that any psychiatric work implicates epistemological, ethical, and anthropological (to sum up: philosophical) questions. Psychiatry has to face them, especially when tackling conflictuous topics like compulsory interventions. This, however, does not mean that philosophical considerations should be given too much weight to the disadvantage of practical issues in psychiatric services. On the contrary, if, at this point, listening to Karl Jaspers (1883–1969) who thoroughly knew both worlds, the psychiatric and the philosophical one (4), one might be surprised to come across a decisively cautious, if not critical perspective:

> "The reason why the psychopathologist should care about philosophy is not that it will teach him anything positive for his own scientific field, but that it will provide him with the inner space to realize what knowledge he can possibly acquire." (5, p.40) [translated by P.H.].

In other words, philosophical reflection itself may well be seen as necessary but not as sufficient precondition for good clinical practice in psychiatry, including the issue of responsibly handling compulsory interventions.

Before turning to three fields of tension that are practically relevant and wield major influence over the identity of psychiatry, the concept of autonomy, central to modern medical ethics, shall be highlighted (6).

THE CONCEPT OF AUTONOMY IN PSYCHIATRY: ESSENTIAL AND CUMBERSOME

The understanding of persons with a mental disorder as patients, as suffering individuals entitled to be taken seriously and treated efficiently, is, from a historical point of view, a comparably young concept—as is psychiatry itself: Both emerged in the era of enlightenment in the eighteenth century with its strong emphasis on rationality and personhood, that is, the notion of rationality created an optimistic stance over the scientific comprehensibility, not to say mastery of our world. The concept of personhood postulated that human individuals are not more or less passive elements of given social or political structures like kingdoms, religions, or nations, but possess a dignity of their own which includes autonomous and responsible decision making. Immanuel Kant's (1724–1804) philosophy is the most prominent representative of such an anthropological framework. Pars pro toto, the categorical imperative, central to Kantian ethics, shall be mentioned because of its close links to the notion of autonomy:

> "Act in such a way that you treat humanity, whether in your own person or in the person of any other, never merely as a means to an end, but always at the same time as an end." (7).

To see another person *only* as a means to my own intentions is therefore disrespectful, ignores his or her autonomy, and cannot be ethically justifiable.

Thus, we may, with good reasons, trace core elements of modern psychiatry back to the evolving liberal ideas of the eighteenth century and their focus on autonomous persons and their indispensable civil rights.

However, one-sidedness must be avoided: As often in the history of science, new paradigms brought about progress *and* carried risks. It was exactly this caution that led Max Horkheimer (1895–1973) and Theodor W. Adorno (1903–1969), leaders of the "Frankfurt School," to coin the term "dialectics of enlightenment" (8, 9): Emancipatory ideas, that are not continuously monitored and recalibrated, may be misunderstood or abused, in the worst case creating the opposite effect they had intended. Although mainly applicable to historical and political domains, this argument is also of value for psychiatry: The concept of personal autonomy, adopted from the discourse of enlightenment in the late eighteenth and early nineteenth centuries, by no means guaranteed the reduction or abolishment of compulsory measures or inhumane treatments of mentally ill people.

Another plea is raised against linking psychiatry with the liberal, person-oriented mainstream of enlightenment: Can this position ever gain credibility when psychiatry's active support of the grossly inhumane, better, perverted, and pseudoscientific activities of medicine in the Nazi era is taken into account (10, 11)?

It has a lot to do with this dialectics of science that postmodern philosophy stayed profoundly skeptical towards "grand theories" in general and the notion of an autonomous subject as anthropological hallmark in particular. This again had instant consequences for the autonomy debate in medical ethics: In the last decades, concepts with strong, some say metaphysical presuppositions like in Kant's deontological ethics were criticized as narrowing down normative issues to the western (Christian and liberal) tradition.

In the second half of the twentieth century and up to now, among others, two radically different alternatives were developed.

The first one defined autonomy (in the sense of free personal decision making) as the very center of what is called *conditio humana*. For existentialist philosophers, the most prominent one in this context being Jean-Paul Sartre (1905–1980), humans do not only possess the ability or the *option* to act autonomously, but also *must* decide for themselves; they are, in a way, forced to use their freedom. This, nota bene, is a formal argument. It does not address the issue of *what* the individual person choses or whether his or her choice is wise or silly, good or bad. It also is a radically individualistic approach: Any person decides, must decide for himself or herself without having to refer to a given normative framework.

The second approach denies the purely individualistic nature of autonomy, which, on the contrary, is defined as

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[2] See footnote 8.

essentially interpersonal. In this view, autonomy is neither depending on metaphysical principles nor on radical individual freedom but develops and, in a way, exists only when persons communicate with each other on the basis of mutual acceptance and respect. An existentialistic author, Emmanuel Levinas (1906–1995), tried to bridge both ways of thinking about autonomy by introducing an insurmountable gap between "me" and "the other," the latter understood as an existentially necessary element, that is radically different and not fully comprehensible to me. Therefore, Levinas' ethics must not be mistaken as a dialogical approach like the one that, in contrast, gave distinction to Martin Buber's (1878–1965) or Harry Stack Sullivan's (1892–1949) work (12, 13) (see section "Personhood and Interpersonal Relations").

In recent years, "grand theory-oriented" approaches like Kantian or existentialist concepts have significantly lost influence, especially in medical ethics. Many present-day authors do accept *personal autonomy* as an essential attribute of human beings, an attribute, however, that exerts its full strength only when positioned in a communicative social context: Autonomy is not perceived as a preexisting or metaphysical idea, but originates *within* social relationships, e.g., in medical care. This basic assumption is the common denominator of broadly discussed concepts like "relational autonomy," "ethics of care," or "narrative ethics" (14–18).

This demonstrates the complexity and diversity of the present philosophical debate on autonomy. There seems to be, however, a minimal consensus between most of the competing approaches when it comes to medical ethics: Whatever the philosophical underpinning may be, ethically sound decision making requires respect for the other person's opinion exactly because he or she *is a person*. Of course, respecting an opinion does not mean consenting to it. But without mutual respect, patient autonomy cannot be adequately put into practice.

Returning to the field of psychiatry, it can be stated that the notion of autonomy—the patient's as well as the professional's—is a core element that interconnects clinical work, psychiatric research, and the identity of the field itself (19). Here, identity does not refer to a formal philosophical context but addresses the self-understanding of people working in (and thus creating) the mental health area. Taking the conceptual history of psychiatry into account, especially the early referral to the notion of personal autonomy in the eighteenth century, compulsory interventions, i.e., overriding a person's wishes and decisions, pose the strongest possible contrast—and lead to difficult questions for all people involved. Of course, these problems also exist in other medical areas, e.g., intensive care or pediatrics. However, in psychiatry, the continuous reflection on how psychopathological phenomena may restrict the patient's ability to make full use of his or her autonomy is present beyond special situations like the emergency room or decisions in a palliative context: It is an indispensable element of psychiatric work in general.

Therefore, it is not just an option but a mandatory task to encourage the debate on autonomy within psychiatric institutions, laboratories, and lecture halls. In the following, this postulate will be exemplified in reference to compulsory interventions.

COMPULSORY INTERVENTIONS: FIELDS OF TENSION, CHALLENGING THE IDENTITY OF PSYCHIATRY

Compulsory interventions create multiple fields of tension that impose considerable pressure on psychiatry's identity. Three of them are to be discussed in some detail here: The ethical dilemma of autonomy versus care, the interrelation of psychiatry and society, personhood and interpersonal relations as conceptual constituents of psychiatry. Of course, these areas are substantially intertwined, but they are not synonymous. It is a demanding task for *any* psychiatric activity to address and combine them in a reasonable, person-centered manner.

The Ethical Dilemma of Autonomy Versus Care

Two fundamental values in medicine collide in clinical situations where compulsory measures are considered: The patient's autonomy on the one hand and his or her entitlement[3] to an efficient treatment on the other hand. If the decision-making capacity[4] is not reduced, which is the case in the majority of medical situations, no problem arises: The patient's decision has to be respected, as long as it is based upon an informed consent or dissent. Given an informed *dissent,* compulsory measures, as a rule, are not allowed from a juridical and not justifiable from an ethical point of view[5].

If, however, psychopathological phenomena severely impair the patient's capacity to decide according to his or her intentions and preferences, the psychiatrist has to solve the arising ethical dilemma by ascribing more weight to one of the above mentioned conflicting values. Deciding about the patient's power of judgement based on an exhaustive psychopathological examination is a complex and responsible task that psychiatrists are confronted with on a daily basis. What is more, to decide on the tenability of compulsory interventions regularly includes a prediction of possible risks that result from the existing psychopathological condition, risks for the patient or for others. Depending on the juridical context, the psychiatrist may have to seek permission by a court when considering compulsory measures but, in the first place, cannot escape the *personal* decision whether it is justifiable or not to force certain procedures upon the patient.

In the present context, dichotomous perspectives—patient and psychiatrist—are prevailing. Nonetheless, any therapist will try hard to build a therapeutic relationship even under the difficult, if not paradoxical, conditions of compulsory interventions. This directly alludes to the self-understanding of psychiatric professionals and, more general, to the identity of psychiatry. The important step from a dichotomous to an interpersonal perspective will be addressed later.

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[3] This also has a juridical dimension: If a patient—whether capable of decision making or not—is denied necessary medical interventions he or she is entitled to, the psychiatrist might be accused of "nonassistance of a person in danger."

[4] Also termed "power of judgement" ("Urteilsfaehigkeit" in German, "capacité de discernement" in French).

[5] There are exceptions from this rule: In Switzerland, for example, the lack of the power of judgement is *not* explicitly mentioned as precondition of an involuntary admission in case of a mental disorder (20).

The Interrelation of Psychiatry and Society

Compared to other medical specialties, psychiatry probably has the broadest and most complex interface with social and cultural issues. One reason is that in psychiatry the "object" of treatment and research indeed is not only an object in a quantitative-empirical sense, but the mentally ill person as a whole. Therefore, inevitably, all dimensions of personhood are involved: biological, psycho(patho)logical, social, and spiritual levels are covered by the binding mandate society awards to psychiatry. This mandate, however, is not a straightforward one. Indeed, it contains complex and even contradictory conceptual layers that may well question psychiatry's identity.

The following examples shall further elucidate this:

- Given its particular "object" mentioned above, psychiatry has to accept that philosophical, anthropological, and also political issues will necessarily leave their marks in its own realm: cultural imprints on psychiatric nosology, mind–body problem, competing perspectives of natural sciences and humanities in research, and, last but not the least, the risk of political abuse of psychiatry, to mention a few.
- Our field has always seen controversial debates on whether or not psychiatry should accept a significant role in public policy, especially regarding decisions about compulsory hospitalization or treatment. In Switzerland, for example, the head physician of a psychiatric institution is entitled by law to order a compulsory treatment under certain conditions (involuntary admission, power of judgement lacking due to a mental disorder, no less invasive alternative available).[6] Some argue that such a massive restriction of human rights should *without exception* be ordered by a judge, not a physician. Others doubt that a mandatory and time-consuming involvement of a juridical person will be favorable for the patient, since only the psychiatrist is skilled to quickly and substantially decide about the best option in an emergency situation. Of course, there is no simple answer to this dilemma. However, any professional person, who takes part in the diagnosis and treatment of psychiatric patients, has to seriously look into this subject.
- Society's attitude toward psychiatry tends to be ambivalent: It commissions psychiatry to deal with people behaving in a peculiar way or reporting distressing subjective experiences like a severely depressive affect, delusional ideas, or hallucinations. The same society, however, often displays a skeptical, if not distrustful, stance on psychiatry, being influenced by negative (and stigmatizing) stereotypes about mental disorders. This tension necessarily affects people who work in psychiatry—and their professional identity.

Personhood and Interpersonal Relations as Conceptual Constituents of Psychiatry

At present, as shown above, the ethical debate on autonomy places considerable emphasis on the interpersonal domain, e.g., in care ethics or narrative ethics. This is remarkably parallel to the conceptual history of psychiatric thinking: Initially drawing on postulates of eighteenth century enlightenment, psychiatry ever since debated the role of personal autonomy and its conjunction with the interpersonal realm. For Immanuel Kant, the subject's personal freedom necessarily depended on the acceptance of other subjects as equally autonomous[7]. His philosophical system, being highly abstract and confined to transcendental idealism, as it was, did not exert sustained influence on psychiatry (21). However, interpersonal processes as relevant factors in each psychiatric therapy did become an acknowledged object of debate and research up to the present time.

For Karl Jaspers, psychiatric diagnosis and therapy were not just the application of certain techniques, but distinctively imbedded into an interpersonal relationship (5). The American psychiatrist Harry Stuck Sullivan (1892–1949) placed this idea in the very center of his "Interpersonal Theory of Psychiatry" (published posthumously in 1953) (13). The Austrian Jewish philosopher Martin Buber (1878–1965) and the American psychologist Carl Rogers (1902–1987) who developed "client-centered therapy" (22) met in 1957 for a—later famous—dialogue about interpersonal relations (23). Recently, the expanding field of social neuroscience became influential for psychiatry by combining neuroscientific laboratory methods with empirical data about the social (and this also means: the interpersonal) dimension of probands or patients (24).

Modern approaches in clinical medicine to strengthen patient autonomy are manifold, e.g., shared decision making (25), empowerment (26), assisted autonomy (27) (instead of substituted autonomy)[8], advance care planning (28, 29), advance directives (30), and ethical guidelines for compulsory interventions (31, 32). It is no coincidence that most of them reach well beyond the plain dichotomy between patient and psychiatrist discussed earlier, but emphasize the vigor of the interpersonal dimension.

In summary, the issue of interpersonal relations, although discussed controversely, is one of the hallmarks of psychiatry and its professional identity. Compulsory interventions, again, present a constant challenge: Without an enduring process of critical reflection, psychiatry will not be in the position to tackle this problem adequately, i.e., to stick to the fine line between overt paternalism and pseudo-liberal negligence.

CONCLUDING REMARKS

Psychiatry is a practical medical field. Therefore, in line with Karl Jaspers' position in the quotation above, philosophical considerations in psychiatry will only be of value if they create a more profound understanding of diagnostic and therapeutic processes. They cannot reduce the clinician's burden, but—in the best case—they will make his or her decisions clearer and more substantial.

This leads to four main conclusions:

- Compulsory interventions severely restrict constitutional rights of the patients. Under no circumstances may they be

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[6] Art. 434 Swiss Civil Code ("Treatment without consent")

[7] Even more this is true for Johann Gottlieb Fichte (1762–1814) who further developed Kantian principles and defined the interpersonal realm as one of the cornerstones of his philosophical system (21).

[8] *To assist* and *not to substitute* autonomy, wherever possible, is a central postulate of the United Nations' "Convention on the Rights of Persons with Disabilities" (3).

regarded as undisputed "regular" constituents of psychiatric work. They are exceptional measures only to be considered under strict and clearly defined ethical and juridical conditions.

- Compulsory interventions confront mental health professionals with difficult and not seldom provocative questions that challenge their individual professional identity as well as the identity of psychiatry in general. Since there is no "autonomy light," these debates are demanding endeavors. They have to be integral parts of psychiatry and cannot be fully delegated to external experts or institutions, e.g., ethical councils.
- Guidelines about compulsory interventions and their prevention are highly useful. However, they alone cannot resolve the ethical dilemma brought forward by every single case. Clinicians must stay aware of their indispensable responsibilities.
- The debate about autonomy in psychiatry will serve as an effective and credible point of contact with society, since autonomy also is a central topic in social and political contexts. This common interest may stimulate dialogues and, in the best case, help to fight discrimination of psychiatric patients, professionals, and the field itself.

AUTHOR CONTRIBUTIONS

PH is the sole author of this manuscript.

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Right to Appeal, Non-Treatment, and Violence Among Forensic and Civil Inpatients Awaiting Incapacity Appeal Decisions in Ontario

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Background: Mental health legislation in Ontario, Canada, permits inpatients to refuse treatment while appealing their incapacity finding to the Consent and Capacity Board (CCB). Lack of treatment during this period poses safety concerns, as inpatients who remain untreated are at higher risk of engaging in violent behavior. The present study explored the relationship between non-treatment and violence among forensic and civil inpatients awaiting their CCB hearing at the largest psychiatric hospital in Canada.

Methods: We investigated the electronic health records of 285 inpatients whose CCB applications were heard between 2014 and 2016 to better understand violent outcomes among inpatients and determine whether application timelines differed between forensic and civil inpatients.

Results: Three key findings were observed. First, forensic inpatients had more episodes of violence requiring seclusion and restraint during the application timeline compared with civil inpatients. Second, forensic inpatients waited longer than civil inpatients for their appeal to be heard at the CCB. Finally, unwillingness to accept PRN medications and comorbid psychiatric conditions were potent risk factors for violence among all inpatients during the appeals process.

Conclusions: Compared with civil inpatients, forensic inpatients waited longer for CCB appeals. They also scored higher on one measure of violent behavior. These findings provide context for the ongoing challenge of clinicians tasked with providing care for inpatients appealing findings of incapacity under mental health legislation in Ontario. We argue for a more streamlined approach to processing appeals for both forensic and civil patients. Better standardization or even revision of current mental health legislation may help eliminate clinical disparities between patient groups.

Keywords: forensic psychiatry, incapacity, violence, mental health legislation, treatment delay

INTRODUCTION

The interaction between the criminal justice system and psychiatric services has demonstrated a tenuous relationship between balancing individual rights and public safety. In Ontario, Canada, according to s.18(1) of the *Health Care Consent Act, 1996*, no treatment may be administered to involuntarily detained inpatients if they appeal the finding of incapacity to consent to treatment before the Consent and Capacity Board (CCB), an independent tribunal established to facilitate hearings for review under the *Health Care Consent Act, 1996* and the *Mental Health Act, 1990*. The CCB then decides whether individuals are capable of making their own treatment decisions. Despite growing reliance on legal mechanisms to supplement psychiatric treatment plans, few studies have analyzed the emergence of violence among forensic and civil inpatients during the appeals process when inpatients remain untreated with psychotropic medications. Both forensic and civil inpatients are vulnerable to violent behavior during the appeals process due to lack of treatment that typically reduces violence (1). Therefore, our research was guided by the following aims: First, we explored a range of demographic and clinical variables to study the frequency of violence during the appeals process among forensic and civil inpatients admitted under involuntary psychiatric care in Ontario who were awaiting their CCB hearing. Second, we explored the length of appeal in both forensic and civil patients to understand whether patients in one group waited significantly longer for the resolution of their appeals, thus prolonging the period of non-treatment for patients in that group. Third, we ascertained whether patients with comorbid conditions, which we interpreted as a measure of clinical severity, waited longer for their CCB appeal.

Much of the literature describing the relationship between mental health and the law has primarily provided an analysis of the historical evolution of legal and psychiatric principles infused as core tenets guiding the objectives of contemporary mental health legislation (2–9). Hartford et al. (3) argue that a “rights revolution” has continuously gained prominence in Canadian mental health law reform, which has afforded greater freedoms to individual inpatients, such as their ability to participate and consent to psychiatric treatment. The impact of this rights-based movement on mental health legislation has been analyzed by other scholars. For example, O’Reilly et al. (6) examined the various types of legal safeguards and minimum protections for inpatients and investigated the expansion of greater autonomy and access to courts and administrative tribunals, which are the venues for legal challenges brought under mental health legislation. Although a delay to treatment strives to ensure that inpatients’ rights are not compromised in clinical settings, other authors have studied the detrimental impacts of non-treatment on inpatients. For instance, numerous studies have shown that non-treatment is associated with longer rates of hospitalization and greater frequency of relapse (10–13).

Among patients with schizophrenia, non-adherence to treatment is commonly associated with a lack of awareness or refusal to acknowledge illness (14, 15). Refusal of PRN medications, agents that are not normally scheduled medications but are used to acutely subdue psychiatric symptoms, has been associated with a greater number of suicide attempts, longer hospitalizations, and higher rates of relapse (16). The effect of symptom burden, including positive and negative symptoms in schizophrenia, has also been shown to make treatment refusal more likely (17–20), and treatment refusal has been linked to an increase in patient violence (21). On the other hand, a willingness to accept medication and engage in treatment programs is typically associated with positive results for the patients (22–28). Finally, Greenberg (5) argues that the automatic right to appeal to the CCB in Ontario, rather than a right to review in most other Canadian jurisdictions that would permit concurrent treatment during the review process, likely produces negative clinical effects on individual inpatients with major mental illness, as procedural delays may prolong necessary treatment.

First, we hypothesized that forensic inpatients would display higher rates of violence than civil inpatients during the wait to the CCB hearing, given that the majority of the forensic inpatients would have been hospitalized for commission of a violent act. Second, we further hypothesized that forensic inpatients would wait longer than civil inpatients for their CCB hearing, due to legal complexities and greater administrative burdens associated with forensic inpatients. Third, we hypothesized that patients with comorbid psychiatric conditions would wait the longest for their appeals, as this presentation may influence the complexity of the appeals process. These hypotheses were structured to answer the overarching questions of whether the appeals process operated differently for forensic versus civil inpatients and whether clinical data could predict violent behavior that emerged while waiting for the appeal to be heard.

METHODS

Design

This investigation is a retrospective cross sectional study that examined the electronic health records (EHRs) of 285 involuntary inpatients at the Centre for Addiction and Mental Health (CAMH) in Toronto, Ontario, who applied for an appeal of their finding of incapacity to the CCB. Study variables included age, sex, violence, length of CCB appeal, patient type (forensic versus civil), diagnosis, unwillingness to take PRN medication, and comorbid psychiatric conditions.

Variables

The independent variable was type of patient, for example, civil or forensic. CAMH is a general and forensic hospital that treats forensic patients detained under Ontario Review Board dispositions and civil psychiatric patients who may be admitted for voluntary or involuntary hospitalization. The dependent variable was patient violence. Confounding variables included patient age, sex, psychiatric diagnoses, length of CCB application, unwillingness to take PRN medications, and comorbid psychiatric disorders.

Violence

Each episode of violence gleaned from the inpatients' EHR was recorded. We defined a violent episode as a recorded and identified instance where an inpatient exercised a visible form of physical aggression, whether or not that aggression was inflicted upon another individual. For example, physical aggression could be directed toward people or objects. For the purposes of this study, episodes of violence were divided into three categories: 1) physical aggression not requiring a code white response or restraint/seclusion tactics; 2) physical aggression triggering a code white alarm (e.g., episodes where hospital emergency protocols are exercised to defuse violent inpatients); and, 3) physical aggression requiring the use of restraint/seclusion to subdue the inpatient (e.g., application of restraint/seclusion tactics by hospital staff in response to intractable violence). The use of restraint/seclusion identified the most intense form of violence, as all inpatients displaying this behavior also necessitated the use of a code white alarm (violence/behavioral situation). For some inpatients, more than one category of violence was recorded during one event, and some may have occurred simultaneously, depending on the specific circumstances. However, only the highest level of aggression was considered (e.g., inpatients were not recorded as having engaged in two acts of physical aggression if both restraints and a code white were employed). Violent behaviors were recorded using both dichotomous and continuous variables. For dichotomous variables, inpatients were categorized as violent if they had demonstrated at least one or more episodes of violence during their application timeline. The total number of discrete violent episodes per inpatient was also recorded, although, as noted above, multiple forms of violence that had occurred contemporaneously were treated as one event.

Length of CCB Appeal

The number of days that had elapsed from the day the CCB application was filed to the date a decision was rendered was recorded. This variable reflects the minimum number of days that inpatients were untreated with psychotropic medications.

Diagnoses

We recorded diagnoses made by clinicians at the time of the CCB application. One group was created that included all patients with either schizophrenia or schizoaffective disorder, another group included individuals with a psychotic disorder other than schizophrenia or schizoaffective disorder, a third group included all patients with a substance use disorder, and a final group comprised patients with personality disorders. We created another variable (comorbid conditions) that included patients with two or more of the above diagnoses. It was coded dichotomously (e.g., yes/no).

PRN Medication

We recorded instances where PRN medication was offered to inpatients who displayed signs of violence. Unwillingness to accept PRN medication was measured as a dichotomous variable and indicated whether inpatients had refused or accepted PRN medications during the entire application timeline period. For example, if inpatients refused PRN medication after having instigated a violent episode, they would be recorded as having been unwilling to accept PRN medications, regardless of their willingness to accept PRN medications on all other occasions. PRN medications included antipsychotics and benzodiazepines.

Study Setting

CAMH is a stand-alone speciality psychiatric hospital located in Toronto, Ontario, and the largest mental health and addictions hospital in Canada.

Sample

All civil and forensic inpatients who had applied for CCB relief (*n* = 285) between January 2014 and April 2016 were included in this analysis. A change in the EHR system in 2016 made it difficult to collate data from April 2016 and beyond. Therefore, we began reviewing charts in 2014 to capture at least two years' worth of data. Both forensic inpatients (*n* = 31) and civil inpatients (*n* = 254) had hearings from CCB applications that were lodged and heard during this period.

A sample of 285 subjects provided 80% power to detect an odds ratio of 1.96 at a significance level of 0.05, considering a predictor with two levels and equal sample size in each level and also assuming a baseline prevalence of violent incidents of 43%. The detectable odds ratio increased to 2.35 when the binary predictor had categories split at an 80%/20% ratio. Considering a baseline proportion of 30%, the odds ratio of 1.96 is equivalent to a change in prevalence to 46% and an odds ratio of 2.35 to a change in prevalence from 30% to 50%. This power calculation was conducted using G*Power 3.1.9.2 (29).

Process

The data for this study were retrieved from the EHR database at CAMH. CAMH uses an EHR management system to record all patient encounters, which includes notes written by physicians and allied healthcare staff as well as legal forms. Other information, such as inpatient admission/discharge dates and applications and timelines to the CCB (and their outcomes), are also contained within the EHR. Consistent with clinical practice, staff documented inpatients' behavior on a daily basis, including any episodes of violence or aggression.

Ethics

All study components were approved by the CAMH Research Ethics Board.

Statistics

Chi-square tests and independent samples *t*-tests were employed to analyze clinical and demographic variables. To test which clinical and demographic variables predicted patient violence, we fit both unadjusted and adjusted logistic regression models using backward deselection. For a backward deselection logistic regression procedure, the least significant predictor is removed from the model until no predictor is found to be significant at a significance level of 0.2. The procedure begins with all predictors in the model at the initial step. Then, predictors are removed based on the probability of the likelihood-ratio statistic according to maximum partial likelihood estimates (30).

We included the following variables as independent predictors in the unadjusted and adjusted logistic regression: age (years), sex (male/female), patient type (forensic/civil), schizophrenia/schizoaffective disorder (yes/no), other psychotic disorder (yes/no), substance use disorder (yes/no), personality disorder (yes/no), comorbid conditions (yes/no), appeal timeline (number of days), and unwillingness to take PRN medication (yes/no).

Age and sex were selected, as younger and male patients typically endorse higher rates of violence (31). Furthermore, clinical diagnoses and comorbidity are relevant to our understanding of whether violence is associated with specific psychiatric conditions or more comorbidity (32). Non-adherance to psychiatric medications has also been linked to violent outcomes (26, 16).

RESULTS

Sample Description

From the complete sample of forensic and civil inpatients (*n* = 285), 66% were male (*n* = 188) and 34% were female (*n* = 97). The average age was 40.0 ± 15.8 years. There was no significant difference in age between the forensic and civil inpatients (forensic: 43.3 ± 13.6 years; civil: 39.6 years ± 16.0 years; *t* = 1.2, *p* = .22). However, there was a significant difference in the distribution of male and female inpatients according to forensic/civil inpatient classification (forensic inpatients: male 90.3%/female 9.7%; civil inpatients: male 63.0%/female 37.0%; (χ(1) = 9.2, *p* = .002). Forensic patients (*n* = 31, 11%) and civil inpatients (*n* = 254, 89%) comprised the total sample of 285 patients.

Diagnoses

59.3% (*n* = 169) of the patients were diagnosed with schizophrenia/schizoaffective disorder, 31.2% (*n* = 89) were diagnosed with a psychotic disorder other than schizophrenia/schizoaffective disorder, 15.1% (*n* = 43) were diagnosed with a substance use disorder, and 16.1% (*n* = 46) were diagnosed with a personality disorder. 22.5% (*n* = 64) of patients had comorbid psychiatric conditions.

Violence During the Appeals Process

There was a trend relationship toward forensic inpatients engaging in more violent episodes during the CCB application timeline (1.6 ± 2.4 violent episodes in the forensic group versus 1.0 ± 1.7 episodes in the civil group; *t* = 1.7, *p* = .090). Among the different classifications of violence (e.g., physical aggression, code white, and restraint/seclusion), there were no differences between forensic and civil inpatients during the application timeline, save for the use of restraints/seclusion, where the number of incidents was greater in the forensic group (forensic: 0.5 ± 0.9 episodes, civil: 0.2 ± 0.6 episodes; *t* = 2.42, *p* = .016). However, there was no difference in the proportion of forensic inpatients (11.5%) versus civil inpatients (10.4%) classified as violent ($\chi^2(1) = 0.79$, *p* = 0.78) during the application timeline.

Length of CCB Appeal

The mean length of time to the CCB hearing was longer for forensic inpatients (28.9 ± 64.2 days) than civil inpatients (13.3 ± 11.2 days; *t* = 3.5, *p* < .001). There was a trend relationship for patients with psychiatric comorbidities waiting longer for their CCB appeal than patients without comorbidities (19.8 ± 45.9 days versus 13.6 ± 11.2 days; *t* = 1.8, *p* = 0.069).

Unwillingness to Accept PRN Medication

As expected, among all inpatients who accepted PRN medication when offered, there were fewer violent episodes (0.45 ± 1.1 episodes) compared with inpatients who did not accept PRN medication (2.1 ± 2.1 violent episodes; *t* = −8.5; *p* < .001). However, there was no difference in the proportion of inpatients accepting PRN medication between forensic and civil inpatients ($\chi^2(1) = 0.10$, *p* = 0.75).

Predictors of Violence

In the unadjusted logistic regressions, unwillingness to accept PRN medications (β = 2.2; *p* < 0.001; 95% confidence interval = 0.06–0.19), comorbid psychiatric conditions (β = 0.79; *p* = 0.006; 95% confidence interval = 1.2–3.9), and personality disorder diagnosis (β = 0.88; *p* = 0.008; 95% confidence interval = 1.3–4.6) each predicted violent behavior during the CCB application timeline among all inpatients (**Table 1**). However, for the adjusted logistic regression, only unwillingness to accept PRN medications (β = 2.2; *p* < 0.001; 95% confidence interval = 0.06–0.19) and comorbid psychiatric conditions (β = 1.1; *p* = 0.011; 95% confidence interval = 1.3–7.6) predicted violent behavior during the CCB application timeline for all inpatients (**Table 2**).

DISCUSSION

The aim of this study was three-fold. First, we explored whether forensic inpatients would display more violence during the CCB appeals process than civil inpatients. Second, we investigated whether forensic inpatients compared with civil inpatients would wait longer for resolution of the CCB appeals process. Third, we were interested to learn whether patients with greater illness burden, indexed by comorbid psychiatric conditions, waited longer for their CCB appeal to be heard. Several findings emerged. First, we found that forensic inpatients had more episodes of the use of restraints and seclusion during the CCB waiting period compared with civil inpatients. However, there was no difference between forensic and civil inpatients on all other measures of violence. Second, we ascertained that the length of time to appeal was longer for forensic inpatients than civil inpatients. Third, we discovered that the length to appeal was not significantly longer for patients with comorbid psychiatric conditions versus patients with only one psychiatric diagnosis. Fourth, analyses revealed that unwillingness to take PRN medication and the presence of

TABLE 1 | Demographic and Clinical Predictors of Violence (Unadjusted Odds Ratios).

Variable	*B*	S.E.	Wald	Df	Sig.	Exp(*B*)	95% C.I.	95% C.I.
Age	−.008	0.008	1.1	1	.31	.99	.98	1.0
Sex	.16	.25	.41	1	.52	1.18	.72	1.93
Schizophrenia/Schizoaffective Disorder Diagnosis	−.44	.24	3.2	1	.074	.65	.40	1.04
Psychosis Diagnosis	−.39	.26	2.3	1	.13	.68	.41	1.12
Substance Use Disorder Diagnosis	.18	.33	.28	1	.59	1.19	.62	2.29
Personality Disorder Diagnosis	.88	.33	7.0	1	.008	2.4	1.3	4.58
Patient Type	.11	.38	.079	1	.78	1.11	.53	2.36
Comorbid Conditions	.79	.29	7.41	1	.006	2.19	1.25	3.86
Length of Time of CCB Appeal	.002	.005	.11	1	.74	1.0	.99	1.01
Unwillingness to take PRN Medication	2.21	.28	62.41	1	0	.11	.064	.190

TABLE 2 | Demographic and Clinical Predictors of Violence (Adjusted Odds Ratios).

Variable	*B*	S.E.	Wald	Df	Sig.	Exp(*B*)	95% C.I.	95% C.I.
Unwillingness to take PRN Medication	2.21	.29	59.58	1	.000	.11	.064	.19
Substance Use Disorder Diagnosis	−.93	.52	3.19	1	.074	.39	.14	1.10
Comorbid Conditions	1.15	.45	6.44	1	.011	3.14	1.23	7.61
Constant	.88	.23	14.56	1	.000	2.42	—	—

comorbid psychiatric conditions were significant predictors of violent outcomes among all patients.

There may be several explanations to describe our finding that forensic inpatients had a greater number of violent incidents that warranted the use of restraint and seclusion. Typically, forensic inpatients are more likely to be admitted to hospital as a result of violent offending and thus have a greater propensity to engage in violent behavior (33). Some evidence suggests that forensic patients may be more susceptible to violence compared with civil patients when they do not receive psychotropic medication (34). Finally, forensic inpatients waited longer for their CCB appeal to be processed. Therefore, a heightened vulnerability to violence during periods of non-treatment coupled with longer CCB application timelines may have increased the likelihood of violence in this sample. It is also probable that forensic inpatients were more closely observed compared with civil inpatients, making detection of violence among forensic inpatients more likely (35). This finding suggests that clinicians ought to be particularly vigilant for signs and symptoms of increased violence in forensic inpatients during the appeals process. Use of all available pharmacological and non-pharmacological methods should be strongly considered when eruption of violence is suspected. However, on-going risk assessment is still necessary to circumvent imminent violence or aggression, and risk management is then required to prevent violence. Hence, these management strategies should be initially based on the least restrictive options. The use of restrictive policies to contain violence should only be employed when least restrictive options have failed to contain the behavior.

Our second main finding was that the length of time to treatment was longer for forensic inpatients. Lengthier periods of non-treatment pose challenges for both inpatients and clinicians, as inpatients may have greater opportunity to perpetrate violence. We did not have data that could shed light on procedural matters related to CCB hearings, which could potentially outline reasons for the relative delay of forensic inpatients. However, it is likely that hearings involving forensic inpatients are more litigious, given the multitude of legal complexities and higher risk associated with forensic status (35). Future research could be directed to examine factors that influence the CCB application timeline for forensic and civil inpatients.

Finally, results indicated that unwillingness to accept PRN medications and comorbid psychiatric conditions both predicted violent outcomes among the entire sample of inpatients. Consistent with earlier references cited, patients who adhere to medication generally show lower rates of violence compared to patients who are non-adherent (16, 22–28). Although administration of PRN medication does not replicate the treatment plan that would otherwise be prescribed to inpatients based on their diagnosis, use of benzodiazepines and antipsychotics would be expected to reduce agitation and lessen the risk of aggression. Both are commonly used as standing orders for pharmacological regimens. It is also possible that inpatients who were willing to accept PRN medications had greater insight into their condition and were overall less likely to engage in violent behavior. Research elsewhere has also suggested that when more psychiatric comorbidity is present, there is a greater risk of violence (21, 36), which agrees with our finding that inpatients who posed the most clinically complex presentations were more violent.

These observations provide fertile ground for future analyses on how patient violence may correlate with clinical and demographic characteristics during the appeals process in Ontario when patients remain untreated. The current appeal mechanism for patients in Ontario provides a venue for due process and a review of the decision-making by physicians proposing treatment with psychotropic medications. However, our data suggest that some of the most vulnerable patients may be at greatest risk of harm when treatment is delayed. Accordingly, the delays created by the length of time waiting for conclusion of

CCB appeals must be examined, as they demonstrate the need to implement a streamlined process for appeal applications that eliminates unreasonable delay caused by administrative aspects of the process. Proposed approaches for eliminating these delays have been raised elsewhere. For example, Solomon et al. (37) analyzed several cases of incapacity challenges and linked them to different areas of mental health legislation in Ontario. They provided several approaches for addressing the issue of delayed treatment for psychiatric patients, including some examples that targeted changes to the mental health legislation itself.

Limitations

Several study limitations must be noted. First, one of the inherent weaknesses of retrospective studies is their reliance on secondary data sources. Second, inpatients were categorized based on clinical diagnoses and did not undergo standardized testing with validated instruments to obtain diagnoses. As a result, the information available to us may have lacked diagnostic precision. Third, demographic variables were restricted to age and sex, which reduced our ability to provide a more comprehensive analysis on the role of demographic characteristics. Fourth, lack of knowledge about individual clinician's practices hampered our ability to better understand how certain variables impacted the emergence of violence. For example, clinicians may have had different thresholds for offering PRNs to inpatients. A fifth limitation is that we limited our data collection to two years. As noted above, a new EHR was introduced to the hospital in 2016. At the time that our study was initiated in late 2016, health records services were unable to extract the variables that were required from the new EHR system. Hence, a larger sample size would have increased our power to detect an effect. A sixth limitation is that the prevalence of substance use diagnoses in our sample was relatively low. The lower number was likely due to a combination of factors, including underreporting by patients and physicians only recording the main diagnosis (e.g., schizophrenia). Finally, although our findings show that the length of time to treatment was the longest for forensic inpatients, specific data that might explain procedural delays were unavailable to us. Thus, we may only speculate on reasons for these delays.

Future Directions

The administration of psychiatric care for involuntarily hospitalized inpatients presents an ongoing challenge for physicians as well as policy-makers. The increasing reliance of the criminal justice system on mental health systems for treatment of individuals in the forensic system makes understanding how violence can vary between inpatient groups paramount. The right of inpatients to appeal their finding of lack of capacity to consent to treatment under the *Mental Health Act, 1990* and the *Health Care Consent Act, 1996* presents an ongoing challenge for clinicians in Ontario to address the effects of untreated mental illness during the appeals process. Effective response to the management of violence must address shortcomings in legislation, institutional practice, as well as treatment methods. Although the current study cannot address all institutional and clinical variables that predispose to violent behavior among forensic and civil inpatients, future research should be aimed at exploring the ways in which the broader contexts of institutional clinical practice and timelines to treatment may influence violence among forensic and civil groups.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Centre for Addiction and Mental Health Research Ethics Board. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

AUTHOR CONTRIBUTIONS

RR was responsible for collecting the data and writing the manuscript. NK was responsible for conceptualizing the study and writing the manuscript.

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MINI REVIEW
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Could Animal-Assisted Therapy Help to Reduce Coercive Treatment in Psychiatry?

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For psychiatric patients, compulsory admission and coercive measures can constitute distressing and sometimes traumatizing experiences. As a consequence, clinicians aim at minimizing such procedures. At the same time, they need to ensure high levels of safety for patients, staff and the public. In order to prevent compulsory measures and to favor the use of less restrictive alternatives, innovative interventions improving the management of dangerous situations are needed. Animal-assisted therapy (AAT) is being applied in a variety of diagnoses and treatment settings, and could have the potential to reduce aggression and psychopathology. Therefore, AAT might be of use in the prevention and early treatment of aggression, and might constitute a promising component of treatment alternatives to forced interventions. To our knowledge, no study evaluating the effect of AAT on compulsory measures in persons with psychiatric diseases has been published up to date. This narrative expert review including a systematic literature search examines the published literature about the use of AAT in psychiatry. Studies report reduced anxiety and aggressiveness as well as positive effects on general wellbeing, self-efficacy, quality of life and mindfulness. Although literature on the applicability of AAT as a component of preventive or de-escalating treatment settings is sparse, beneficial effects of AAT have been reported. Therefore, we encourage examining AAT as a promising new treatment approach to prevent compulsory measures.

Keywords: compulsory treatment, animal-assisted therapy, psychiatry, aggression, prevention

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INTRODUCTION

Mental health care has to exert multiple functions: primarily, psychiatry has to offer treatment options to enable patients' restitution of mental health and an optimal quality of life (1–3). However, in addition, psychiatry is also tasked with the role to protect the patients and others from dangerous situations caused by mental illness, and to provide care for patients that would normally agree with treatment, but are unable to do so due to their impaired judgment (4, 5). This makes it necessary to be able to resort to coercive measures like compulsory admission, safety measures (e.g., seclusion or fixation), and involuntary treatment, in specific situations (2, 3). For psychiatric patients, these measures can constitute distressing and sometimes traumatizing experiences (6). In addition, coercion can increase stigmatization of psychiatry and psychiatric patients (7–9). As a consequence, clinicians aim at minimizing such procedures (10–13). In order to prevent compulsory measures and to favor the use of less restrictive alternatives, innovative interventions improving the management of dangerous situations are needed.

The main indication for the use of coercion in psychiatry is to avoid danger for the patient or others, which is caused by aggressive behavior against others (i.e., aggression, violence) or the patient (i.e., self-directed aggression, self-harm, suicide attempts) (3). These risk situations can occur due to acute or chronic aggressive patient behavior with a variety of different causes and triggers (1).

In order to prevent or reduce coercive treatment in psychiatry, innovative treatment approaches and interventions are needed. These interventions could, e.g., directly target at reducing the probability of risk behavior, thus reducing the need for coercive measures (7). On the other hand, they could also aim at improving illness-related factors promoting aggressive behavior (e.g., emotion regulation, coping with stressful situations, and anxiety) (14). In addition, measures for the prevention of risk situations and, therefore, coercion in psychiatry should have a positive benefit-risk-assessment.

Animal-assisted therapy (AAT) has gained increasing interest in clinical psychiatry and could have the potential to prevent or reduce impending risk behavior and coercion (15). Currently, AAT is more and more employed in psychosocial facilities. It is being assumed that peaceful contact between humans and animals has positive effects on the wellbeing of persons with a wide variety of diseases (16). For example, there have been positive effects for people with somatic, intellectual, and mental disabilities, children with developmental problems, geriatric patients, or persons after surgery (15–19).

Cirulli et al. (16) conducted a review of the existing literature on psychiatric patients and concluded that in order to understand the underlying mechanisms that play a role in animal-human interactions, further research would be needed. Also, they pointed out the need for more standardized AAT treatment protocols. The reviewed studies indicated that animals absorb human attention in an innocent, non-threatening manner that allows persons to calm down.

A systematic review on randomized controlled trials by Kamioka et al. (20) identified 11 studies. Their quality according to Cochrane criteria was too low to perform a meta-analysis. The authors resumed that AAT could be an effective intervention in persons with psychological and behavioral difficulties. For example, persons with depression, schizophrenia, or substance use disorders could benefit from AAT—with the premise that they have a positive relation to animals.

A recent review of randomized controlled trials on AAT was performed by Maujean et al. (17). These authors also criticized the deficient quality of the studies. Eight publications could be included. Identified methodological weaknesses were—among others—a missing control group, differences in outcome variables, and missing assessment of the specificity of positive effects during AAT. It therefore remained unclear whether the positive effects might have been merely caused by the higher attention given to the patients due to the intervention instead of the intervention itself. There have been no reports of negative effects due to AAT.

The only meta-analysis on AAT was conducted by Nimer and Lundahl (21). The authors included every type of AAT and did not use any restrictions regarding the examined patient population, which lead to the inclusion of 49 studies. The authors found moderate positive associations of AAT with improvement of autism symptoms, medical difficulties in general, behavioral problems, and emotional wellbeing.

O'Haire et al. (22) systematically reviewed literature on AAT for trauma, including posttraumatic stress disorder (PTSD). They examined six studies with participants who were survivors of childhood abuse and military veterans and found reduced depressive and PTSD symptoms, and reduced anxiety. Because of a low level of methodological rigor in most studies, the authors indicate the preliminary nature of this area of investigation.

AAT is most commonly used in pediatric care and in nursing homes. It helps to decrease children's pain, especially in pediatric palliative care (23) and is applied according to a manual, the "Therapy Animals Supporting Kids" (TASK) Program (24). In nursing homes, AAT seems to increase mental and physical activity in elderly persons. Due to these positive effects, in Switzerland, approximately 80% of the nursing homes integrate animals into their daily routines. Some uncounted number of nursing homes even allow the residents to take their personal pets into the homes, even though major hygienic challenges result.

Around 60% of psychiatric clinics house animals on their premises (18) and it has been shown that the presence of cats positively influences patient satisfaction in psychiatric wards (18).

The dog as the prototype of a companion animal (25) is the most commonly used animal in AAT (26). Researchers have suggested that dogs would reduce stress and fear in human beings. Studies including healthy participants reported positive effects of the presence of a dog on cortisol level, blood pressure, and pulse frequency (25).

In summary, aggression against others and self-directed aggression are frequent causes for compulsory measures and involuntary treatment in current psychiatric clinical practice. AAT could be an innovative approach to reduce aggression in different patient populations, but up to now, no publication has specifically examined this issue. Furthermore, there are—to the authors' knowledge—currently no studies directly evaluating the effect of AAT on the frequency or use of coercive measures in psychiatry. Thus, the current mini-review aimed at examining the published literature on the use of AAT in psychiatry with a focus on applicability to reduce risk behavior and improve illness-related factors promoting aggressive behavior as proxies for the potential to reduce coercion in clinical psychiatry.

METHODS

As AAT in psychiatry with the aim of reducing aggression and coercion has to be considered as an emerging field, meta-analyses currently would only be of limited use. We therefore conducted a narrative expert review with a systematic literature search.

Search and Selection Strategy

Author SW searched the PubMed and PsycINFO online databases using a combination of search terms related to AAT, psychiatry, aggression, and coercion. There was no literature specifically focusing on coercion. Therefore we focused on domains (aggression, agitation, anxiety) associated with reduction of coercion. We applied no restriction on start date until June of 2019. Reference lists of included literature were screened for additional applicable publications. SW screened all studies according to the following inclusion criteria. We included longitudinal, cross-sectional, and case-control studies (journal articles, book chapters, and dissertations) reporting the effects of animal-assisted interventions on any psychiatric symptom. We included all studies with an age of cases/controls of at least 18 years of age. We applied no language restriction and required patients to have a professionally established psychiatric diagnosis according to DSM or ICD.

Data Extraction

We performed qualitative analysis of all included publications. The main outcome variables were the symptom severities as reported in the individual studies. We extracted population details including diagnosis, the measured symptoms, and the type of AAT that was applied.

RESULTS

Literature Search

The literature search identified 71 possible studies of interest. After screening and applying in- and exclusion criteria, 60 studies were excluded. Using the preferred reporting items of systematic reviews and meta-analyses (PRISMA) template, we summarize the study selection procedure in **Figure 1**.

The final sample consisted of 11 studies; **Table 1** gives an overview of them showing population details, measured symptoms, and type of AAT.

Effects of AAT on Anhedonia and Quality of Life

Nathans-Barel et al. (32) reported positive effects of a dog-assisted intervention compared to a psychosocial treatment in persons suffering from chronic schizophrenia. Furthermore, they reported a positive effect on their quality of life.

Effects of AAT on Mindfulness, Depression, and Rumination

Schramm et al. (15) examined the effect of a sheep-assisted therapy in depressive patients within the framework of a mindfulness based approach. The intervention was practicable and led to reduced depressive symptoms and rumination, while the ability for mindfulness was increased.

Sockalingam et al. (35) report the case of a patient who, following an assault with a concurrent mood disorder, profited greatly from a dog-assisted intervention over a 3-week period.

Effects of AAT on Self-Efficacy and the Ability to Cope

Berget et al. (28) conducted 12 weeks of AAT in persons with schizophrenia, affective disorders and personality disorders. They found a significant improvement in self-efficacy and the ability to cope, but no difference in general quality of life.

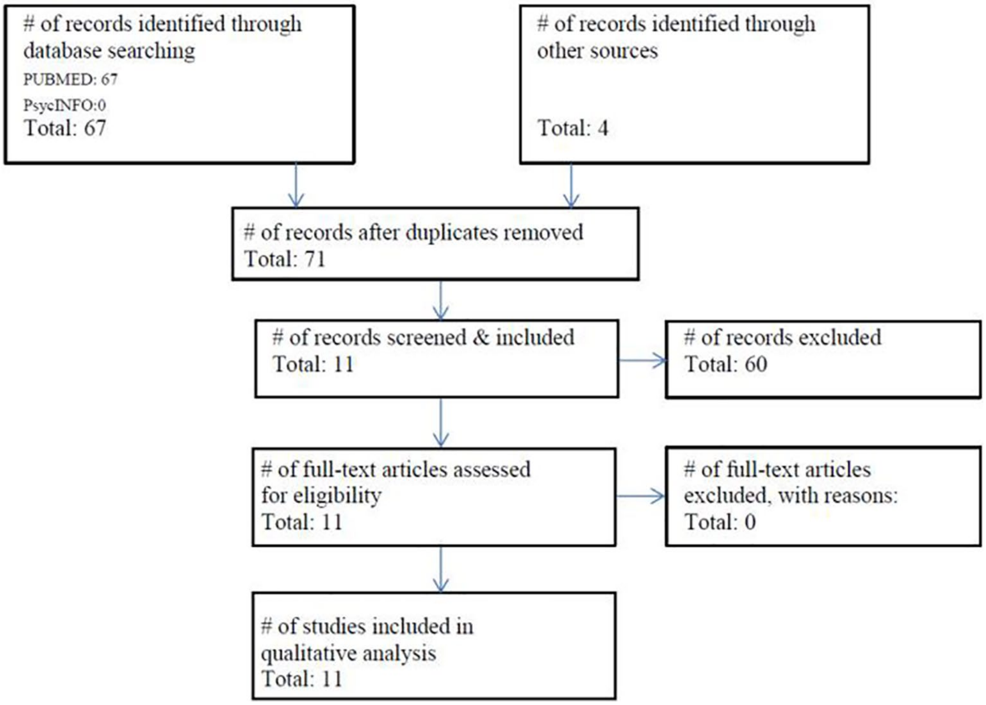

FIGURE 1 | Flowchart of the literature search (21.06.2019) and included studies according to the PRISMA guidelines (27).

TABLE 1 | Overview of the effects of AAT in the included studies.

Author, Year	Population			Variable											Type of AAT					
	n patients with AAT	n patients without AAT	Diagnosis	Well-being	Anhedonia	Quality of Life	Mindfulness	Depressiveness	Rumination	Self-Efficacy	Trauma	Verbal agitation	Anxiety/ Fear	Aggression	Dog	Sheep	Cattle	Cow	Horse	Not indicated
Barker and Dawson, 1998 (26)	230	230 (same patients)	Psychosis, mood disorders										✓ 🟦		✓					
Berget et al., 2008 (28)	60	30	Schizophrenia, affective disorders, anxiety, personality disorders			✓ 🟦				✓ 🟦						✓	✓	✓	✓	
Hediger et al., 2019 (19)	19	19 (same patients)	Acquired brain injury	✓ 🟦				✓ 🟦												✓
Hoffmann et al., 2009 (29)	12	12 (same patients)	Depression										✓ 🟦		✓					
Lang et al., 2010 (30)	7	7	Schizophrenia										✓ 🟦		✓					
Majic et al., 2013 (31)	27	27	Dementia					✓ 🟦						✓ 🟦	✓					
Nathans-Barel et al., 2005 (32)	10	10	Schizophrenia		✓ 🟦	✓ 🟦									✓					
Nordgren et al., 2014 (33)	20	13	Dementia	✓ 🟦								✓ 🟨			✓					
Nurenberg et al., 2015 (34)	49	41	Schizophrenia or admission due to forensic reasons											✓ 🟦	✓				✓	
Schramm et al., 2015 (15)	6	0	Depression				✓ 🟦	✓ 🟦	✓ 🟦							✓				
Sockalingam et al., 2008 (35)	1	0	Bipolar disorder, currently depressive after an assault	✓ 🟦		✓ 🟦		✓ 🟦		✓ 🟦	✓ 🟦				✓					

Overview of the included studies showing population details, examined variables, and type of AAT. AAT, animal-assisted therapy. The checkmarks indicate which variables were examined and which type of AAT was used. Blue shading refers to reduced symptomatology in the AAT-intervention group as compared to the control group or over the course of time, while yellow shading refers to aggravated symptomatology after an AAT-intervention.

Effects of AAT in Patients With Dementia

Peluso et al. (36) examined AAT in patients with dementia and found positive influence on anxiety and aggressiveness. Nordgren and Engstrom (33) observed positive effects of a dog-assisted intervention on behavioral symptoms in dementia. Majic et al. (31) examined the influence of a dog-assisted therapy on agitation/aggression and depression in persons with dementia. They found constant frequency and severity of symptoms of agitation/aggression and depression in the group with AAT while the control group not receiving AAT displayed a significant increase of the symptoms.

Effects of AAT on Anxiety

Lang et al. (30) examined symptoms of anxiety before and after a dog-assisted therapeutic session in persons with acute psychotic symptoms. Also, they observed a significant reduction of anxiety and fear after the session. In depressive patients, Hoffmann et al. (28) observed that a single therapeutic session with a dog led to reduced fear as opposed to a session without a dog. Furthermore, Barker and Dawson (26) compared the effects of an AAT session with those of a regularly scheduled therapeutic recreation session using a pre- and posttreatment crossover study design in 230 patients. They found reductions in anxiety scores after the AAT session for patients with psychotic disorders, mood disorders, and other disorders, and after the therapeutic recreation session for patients with mood disorders. However, there were no significant differences in reduction of anxiety between the two types of sessions (26).

Effects of AAT on Aggression

Nurenberg et al. (34) examined the effect of horse- or dog-assisted therapy in chronically ill psychiatric patients with a history of violent behavior (at least three committed violent acts in the last 12 months). They observed that both AAT interventions reduced aggressiveness in these patients.

Benefit-Risk-Assessment

In addition to the expected benefits of AAT, close contact of animals and humans always bears risks, such as allergies, infections, and animal-related accidents (37). A systematic review by Bert et al. (37) including 36 studies on children, psychiatric, and elderly patients shows that the benefits of AAT greatly outweigh its risks. Furthermore, the authors suggest that the implementation of simple hygiene protocols is sufficient to minimize the risk of infections.

DISCUSSION

The question whether AAT could help to prevent aggression and coercion in psychiatry has not been specifically addressed in a review thus far. A number of studies have examined the effects of AAT in psychiatric patient samples, and some authors have tried to summarize the results of these studies with different research objectives in systematic and non-systematic reviews. We found studies reporting positive effects of AAT on quality of life, mindfulness, depression, rumination, self-efficacy, dementia, anxiety, and aggression. The results are in line with the previous studies stating the various positive effects of AAT in different mental health settings. Still, qualitative and quantitative syntheses are complicated due to small sample sizes and methodological limitations of the published studies. In particular, there is limited evidence for the specificity of many positive findings in AAT, necessitating future research with more advanced study protocols.

However, in the current narrative expert review including a systematic literature search, we found non-systematic indications of a positive effect of AAT on different psychiatric conditions connected with risk behavior and coercion, in particular with anxiety and aggression. Furthermore, there is a broad consensus that the benefits of AAT greatly outweigh its risks.

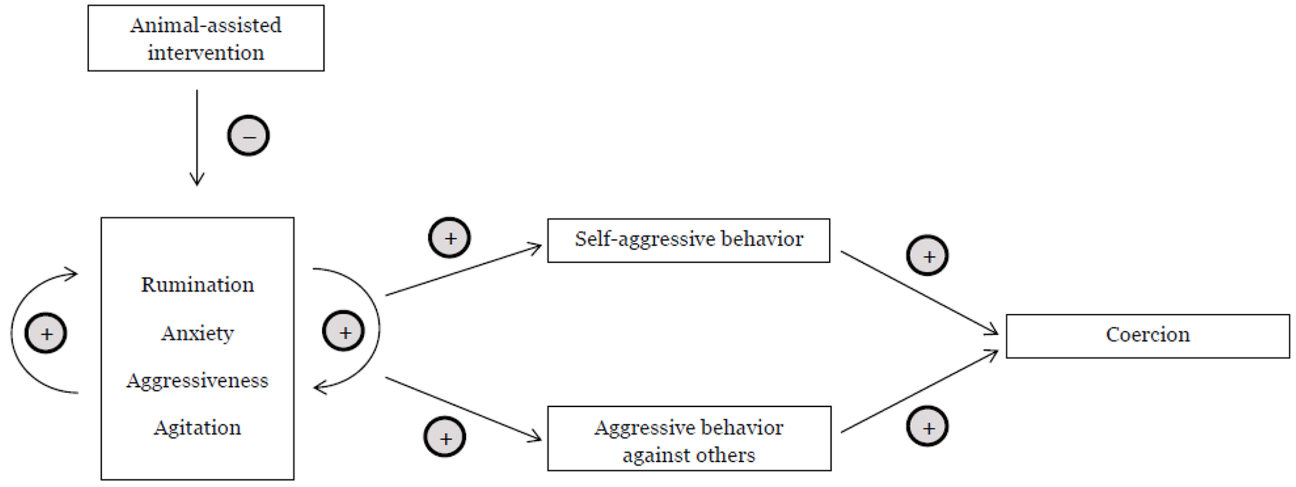

FIGURE 2 | Deescalative Potential of AAT. This figure shows potential connections between psychiatric sypmtom domains, aggressive behavior, and coercion. –: Increase (decrease) in the previous domain leads to a decrease (increase) in the following domain. +: Increase (decrease) in the previous domain leads to an increase (decrease) in the following domain.

Strengths

We examined AAT from a new perspective taking into account its potential implications for the reduction of coercive treatment. Due to this strong clinical implication, we consider it a highly relevant topic. Furthermore, our literature search is up to date and systematic.

Limitations

Multiple factors constitute methodological limitations of this review. Due to the current state of the literature, a narrative expert review was conducted, and some publications on the subject could have been overlooked. Also, the literature search, selection process, and data extraction have been conducted by one single author. Furthermore, no systematic quality assessment of the included publications was performed, and an analysis of publication bias and quantitative synthesis of the findings were not possible. However, this approach is adequate considering the current state of the field. Further limitations of this study are that, although we found indications that AAT may help to reduce coercive measures in psychiatry, we did not elaborate a concept on how to implicate AAT in acute psychiatric settings. Also, we found no study examining directly the influence of AAT on coercion in psychiatry. Future research may show if the current non-systematic evidence for a potential use of AAT can be replicated and corroborated.

Clinical Implications

AAT greatly benefits human health—it enhances our general wellbeing as well as it enables persons with psychiatric diseases to achieve better therapeutic outcomes in many different areas and for a variety of symptoms. In the context of coercive treatment in psychiatry, we highlight the promising potential of AAT to relieve symptoms leading to aggressive behavior. We hypothesize that applying AAT in psychiatric wards reduces the need for coercive treatment. Furthermore, we think that even at later stages in the escalation process leading to a coercive measure, AAT could deescalate the situation so far as to render the coercion unnecessary. It has been shown that aggressiveness itself diminishes in the presence of a therapeutic animal. **Figure 2** shows the process in which AAT could deescalate and prevent coercive measures.

We suggest implementing AAT as a low-threshold therapeutic measure in psychiatric wards as a social psychiatric mean to minimize coercion. We hypothesize that the presence of an animal at, for example, the department for persons suffering from schizophrenia would lead to a decline of agitation in the patients of the ward—this could improve the general atmosphere of a ward. Furthermore, we hypothesize that, if a certain therapy animal is known to the patients, this animal could calm persons even in high-risk situations and subsequently enable mutual agreement between the patient and the therapist, which in turn would allow for a better relationship between patient and animal and lead to an enhanced treatment compliance with less and less coercive treatment necessary.

CONCLUSION

Based on our findings, we suggest integrating AAT into an aggression-reducing setting, potentially combining it with an enriched environment, music therapy, and other supportive therapies in addition to established psychotherapy and psychopharmacotherapy. AAT could thus be implemented as one of multiple non-pharmacological treatment approaches. Systematic studies, however, are needed to confirm the hypothesis that AAT can help to prevent coercive treatment.

AUTHOR CONTRIBUTIONS

SW and CH designed the study and wrote the initial draft of the paper. SB and UL revised the manuscript for important intellectual content. All authors have contributed to, read, and approved the final version of the manuscript.

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Reliability of Paper-Based Routine Documentation in Psychiatric Inpatient Care and Recommendations for Further Improvement

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Background: Health services research is of increasing importance in current psychiatry. Therefore, large datasets and aggregation of data generated by electronic routine documentation due to legal, financial, or administrative purposes play an important role. However, paper-based routine documentation is still of interest. It remains relevant in less developed health care systems, in emergency settings, and in long-term retrospective and historical studies. Whereas studies examining the reliability of electronic routine documentation support the application of routine data for research purposes, our knowledge regarding reliability of paper-based routine documentation is still very sparse.

Methods: Basic documentation (BADO) was completed on paper forms and digitalized manually for all inpatients of the Department of Psychiatry and Psychotherapy, University Hospital Hamburg-Eppendorf, Germany, treated within the time period from 1998 to 2006. Four hundred twelve cases of first-episode psychosis patients were chosen for comparison with clinical data from paper-based patient files. The percentage of missing information, the percentage of correct classifications, sensitivity, and positive predictive value were calculated for all applicable variables.

Results: In eight cases (1.9%), a BADO form was available, but was not filled in. In 37 cases (7.0%), the patient files were lost and could not be obtained from the centralized archive. Routine data were available for all other cases in 20 (58.8%) of the examined 34 variables, and the percentage of missing data for the remaining variables ranged between 0.3% and 22.9%, with only the variables education and suicidality during treatment having more than 5% missing data. In general, the overall rate of correct classifications was high, with a median percentage of 86.4% to 99.7% for the examined variables. Sensitivity was above 75% for eight and <75% but above 50% for six of the examined 17 variables. Values for the positive predictive value were above 75% for nine and <75% but above 50% for three variables.

Conclusion: In summary, paper-based routine documentation reaches acceptable reliability, but this is dependent on the chosen documentation categories and variables.

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Based on the present findings, paper-based routine documentation can indeed be used for quality management, organizational development, and health services research. Its limitations, however, have to be kept in mind.

Keywords: basic documentation, psychiatric routine documentation, routine data, patient files, data quality

INTRODUCTION

Health services research, the use of routine data, secondary analyses of public as well as proprietary datasets, and the application of "big data" strategies to answer research questions are of increasing importance in current psychiatric research (1–3). The use of routine data can expand scientific knowledge beyond answers given by randomized controlled trials (RCTs) with strict in- and exclusion criteria, patient samples omitting severely ill populations because of their inability or unwillingness to provide informed consent, and study protocols differing from clinical day-to-day practice (2–4). While RCTs are providing us with knowledge of a high evidence level, health services research can add information from cost-effective naturalistic studies with large sample sizes and better generalizability, leading to a better translatability into clinical practice (3).

In addition of being useful for health services research, clinical routine data serves multiple other purposes. It is the basis for cost-effective and timely controlling of clinical processes, quality management, and financial as well as organizational development (5). Furthermore, use of common instruments and variables allows benchmarking across different health care providers. Attempts to implement a common instrument for the collection of routine data in German hospital psychiatry have a long history, from the standard documentation form ("Normalschema") by Flemming in 1846, continuing to the basic documentation (BADO) of the German Association for Psychiatry and Neurology (DGPN-BADO) by Dilling in 1982, and to the BADO of the German Association for Psychiatry, Psychotherapy, and Neurology (DGPPN-BADO) by Cording in 1995 (6, 7).

These paper-based instruments have often been replaced by digital routine documentation (8–10) or data extraction from structured clinical databases used for electronic patient files (11–15). Large datasets, generated in hospitals due to legal, financial, or administrative purposes, from insurance companies (16) or federal offices (17) enable data collection and aggregation at a much broader scope (3, 4). Nevertheless, paper-based routine documentation and paper-based patient files are still relevant today. Electronic and paper-based documentation each have different advantages and shortcomings (18, 19). In less developed health care systems paper based documentation remains the key instrument and even in developed health care systems (e.g. in outpatient treatment settings) clinical documentation is often only partly digitalized. Also in settings where data has to be available quickly and documentation is performed under time pressure, e.g. in emergency settings (20), paper-based documentation is the preferred instrument. Last but not least long-term retrospective and historical studies still depend on paper-based documentation (4, 21).

An important limitation for application of routine documentation for health services research is the question of its reliability. Unfortunately, knowledge of the reliability of paper based documentation, e.g. the DGPPN-BADO, is limited despite its repeated application for research (4, 22, 23). Whereas one study is available examining the reliability of electronic routine documentation using an adapted version of the DGPPN-BADO and implementing several methods for the increase of data reliability and completeness (24), this research question remains unanswered for paper-based versions of the BADO. Electronic documentation might be of better data quality due to several reasons. It offers automatic checks for completion of required information, checks for the adequate data type and value range, and can be enforced in a timely manner to avoid a memory bias (3, 21).

Aim of Study

Paper-based routine documentation is still used in current healthcare settings. It constitutes an important data source for health services research, but its reliability is, at present, unclear. Therefore, the aim of the current study is to examine the reliability of paper-based routine documentation of inpatient cases in psychiatry. Based on the available literature, we hypothesized that reliability of paper-based routine documentation might be poorer compared to electronic routine documentation.

METHODS

Data was derived from patient files and BADO of inpatients of the Department of Psychiatry and Psychotherapy, University Hospital Hamburg-Eppendorf (UKE), Germany, treated within the time period from 1998 to 2006. During this time period, the Department of Psychiatry and Psychotherapy was legally obliged to provide psychiatric inpatient treatment for a specific sector of Hamburg, Germany, an urban catchment area with a population of about 300,000 persons. One hundred fifty-five beds on seven specialized wards were available for inpatient treatment. During the investigation period, a total of 21,614 inpatient cases were recorded, equaling to about 2,300 inpatient cases per year.

Study Population

The current study analyses data originally collected within the scope of quality management efforts to improve treatment in first-episode psychosis patients. Thus, inpatient cases with a first-time hospitalization in the Department of Psychiatry and Psychotherapy because of a psychotic syndrome during the time period from 1998 to 2006 were analyzed. This quality management data was later made available for research projects. For example, index cases for the MD thesis of Türk (25) and for the studies of Huber et al. (26, 27) were identified using this database (25–27).

All data were recorded during routine treatment, collected as part of internal quality management efforts, and anonymized during extraction. Thus, according to legal regulation, no formal approval from the local ethics committee was required. However, the responsible ethics committee was informed about the structured data collection and had no objections (Ethik-Kommission der Ärztekammer Hamburg, Hamburg, Germany, OB-026/06). In addition, for this kind of retrospective, secondary analysis of routine clinical data, informed consent is in general not obtained and not necessary. Our study did not lead to any disadvantages or harm for the participants, and the identification of single individuals is not possible. The current study was conducted in compliance with all local and national regulations.

Basic Documentation (BADO)

From 1998 to 2004, an adapted version of the BADO (7) as recommended by the German Association of Psychiatry, Psychotherapy, and Psychosomatics (DGPPN) was used for documentation of routine data (7). From 2005 to 2006, a modified version was used omitting the variables nationality, forced medication, suicidality during admission, suicidality during treatment, and suicide attempt during treatment. A new variable "behavior endangering others" was added in this revision. The physician managing the case at discharge was responsible to complete a paper version of the BADO. A secretary checked if a discharge note and a completed BADO form were available in the patient files. Data were not routinely checked for completeness or quality, but in the case of a completely missing BADO form, the responsible physician was contacted and completion of the form was requested.

Patient Files

During the observation period, the Department of Psychiatry and Psychotherapy exclusively used paper-based patient files encompassing all information available at entry, treatment-related documentation, and discharge notes. Data of cases matching in- and exclusion criteria were collected by two research assistants (CB and HT) using a database built to mirror BADO variables. To ensure that all information available in the patient files was entered completely and correctly, a random sample of 10% of the cases was re-checked by the research assistant not responsible for data entry of the relevant case.

Data Management

To ensure comparability with the published literature, an approach according to Jaeger et al. (24) was chosen for the current study. Thirty-four variables were selected for analysis: date of birth, gender (three categories), marital status (four categories), nationality, education (seven categories), occupational situation (seven categories), living situation (11 categories), zip code, diagnosis according to ICD-10 (main and co-morbid diagnoses were considered, and one variable for each diagnostic group from F0 to F9 was coded as either 'present' or 'not present'), admission ward, date of admission, discharge ward, date of discharge, treatment duration, sector patient (three categories), type of admission (five categories), type of entry (three categories), type of discharge (five categories), legal care (three categories), forced medication (three categories), behavior endangering others, suicide attempt in the past (three categories), suicidality during admission (three categories), suicidality during treatment (three categories), and suicide attempt during treatment (three categories).

A coding scheme was created to compare information available from patient files and from the BADO according to Jaeger et al. (24). Polytomous items with different categories were recoded into multiple single variables—one for each category. When multiple answers were possible for an item, these were also recoded into multiple new dichotomous variables.

Software Used

Information from the paper-based BADO was manually entered in an electronic database (Filemaker Inc., Santa Clara, CA, USA) by a clinical secretary after discharge. For analyses, data was exported to Microsoft Excel (Microsoft, Redmond, WA, USA) and imported to PASW Statistics 18.0 (Chicago, IL, USA). Statistical analyses were conducted using PASW Statistics 18.0.

Statistical Analyses

The following measures were calculated: percentage of missing information in the patient file per variable; percentage of missing information in the BADO form per variable; percentage of correct classifications, i.e. rate of correctly positive and correctly negative coded ratings, calculated by dividing the frequency of correct ratings by the number of total available ratings; sensitivity, i.e. probability that an information present in the patient files is correctly coded in the BADO, by dividing the frequency of correct positive ratings in the BADO by the number of all occurrences of the information in the patient files, and the positive predictive value, i.e. probability that an information coded in the BADO is indeed present in the patient files, by dividing the frequency of correct positive ratings in the BADO by the number of all positive ratings in the BADO. For some variables (date of birth, zip code, having a main or co-morbid diagnosis of one of the ICD-10 diagnosis groups, admission ward, date of admission, discharge ward, date of discharge, and treatment duration) the frequency of correct and false positive and negative ratings cannot be determined, and a simplified assessment had to be used (ratings in the BADO and the patient file agree/disagree). Thus, for these parameters, sensitivity and the positive predictive value cannot be assessed.

RESULTS

After applying in- and exclusion criteria, 412 cases could be identified. In eight cases (1.9%), a BADO form was available, but was not filled in. In 37 cases (7.0%), the patient files were lost and could not be obtained from the centralized archive. These 37 cases (9%) were excluded from further analyses. Of the 375 cases examined in the current study, 270 (72%) were based of the first

BADO version (1998–2004), and 105 (28%) on the revised BADO version (2005–2006). Detailed information on the evaluated variables is provided in **Table 1**.

In the patient files, information on 27 (79.4%) of the examined 34 variables was available. For the remaining variables, information was missing in 0.3% to 4% of the cases. In all cases, routine BADO data were available for 20 (58.8%) of the examined 34 variables. The percentage of missing data for the remaining variables ranged between 0.3% and 22.9%, while only the variables education and suicidality during treatment showing more than 5% missing data.

In general, the overall rate of correct classifications was high, with a median percentage of 86.4% to 99.7% for the examined variables: six variables had a median of 99% and above, 13 variables of <99% to 95%, nine variables of <95% to 90%, and six variables (F1 and F2 diagnoses, date of discharge, treatment duration, sector patient, and type of discharge) had a median below 90%.

Sensitivity, i.e. the fact that a positive rating available in the patient file was also positively recorded in the BADO, was above 75% for eight and <75% but above 50% for six of the examined 17 variables. Living situation, type of admission, and suicide attempt during treatment had the poorest sensitivity. However, there was

TABLE 1 | Correct classification, sensitivity, and positive predictive value of socio-demographic and clinical variables, and missing information in patient files and the basic documentation (BADO).

	Correct Classification (%) median (min–max)	Sensitivity (%) median (min–max)	PPV (%) median (min–max)	Missing (%) patient files	Missing (%) BADO
Socio-demographic characteristics					
Date of birth	99.5			0	0
Gender (3)	99.5 (99.0–100)	99.6 (99.2–100)	99.3 (98.5–100)	0	0
Marital status (4)	99.2 (98.4–100)	98.2 (93.3–100)	95.9 (95.3–96.4)	0.8	0.8
Nationality*	96.2 (96.2–100)	91.4 (83.7–99.1)	99.5 (99.5–100)	1.5	1.1
Education (7)	95.3 (80.0–97.6)	72.7 (5.6–87. 2)	81.1 (15.1–100)	4.0	22.9
Occupational situation (7)	97.3 (88.0–99.7)	80.6 (0–90.1)	86.1 (0–100)	3.5	4.3
Living situation (11)	93.1 (65.3–100)	40.0 (0–80.0)	69.0 (0–100)	0	0
Zip code	98.4			1.3	1.1
Diagnosis according to ICD-10					
F0: Organic, including symptomatic, mental disorders	98.1			0	0
F1: Mental and behavioral disorders due to psychoactive substance use	86.4			0	0
F2: Schizophrenia, schizotypal and delusional disorders	87.7			0	0
F3: Mood [affective] disorders	91.2			0	0
F4: Neurotic, stress-related and somatoform disorders	95.7			0	0
F5: Behavioral syndromes associated with physiological disturbances and physical factors	98.9			0	0
F6: Disorders of adult personality and behavior	94.1			0	0
F7: Mental retardation	98.9			0	0
F8: Disorders of psychological development	99.5			0	0
F9: Behavioral and emotional disorders with onset occurring in childhood and adolescence	99.7			0	0
Treatment-related characteristics	**Correct Classification (%) median (min–max)**	**Sensitivity (%) median (min–max)**	**PPV(%) median (min–max)**	**Missing (%) patient files**	**Missing (%) BADO**
Admission and discharge					
Admission ward	95.2			0	0
Date of admission	97.6			0	0
Discharge ward	92.3			0	0
Date of discharge	89.9			0	0
Treatment duration	88.8			0	0
Sector patient (3)	86.8 (83.8–87.8)	79.4 (78.5–80.3)	83.3 (0–94.8)	1.1	0.3
Type of admission (5)	99.3 (93.1–99.7)	0 (0–73.0)	33.3 (0–83.6)	0	0.8
Type of entry (3)	95.3 (95.2–99.2)	92.0 (87.7–96.2)	83.3 (0–98.1)	0	0.8
Type of discharge (5)	88.4 (63.8–100)	57.1 (12.3–94.1)	76.5 (58.9—81.5)	0	1.3
Legal aspects and dangerous behavior					
Legal care (3)	97.3 (95.5–98.1)	78.3 (0–96.6)	78.3 (0–98.3)	0.3	1.6
Forced medication (3)*	95.6 (92.6–97.0)	74.1 (52.9–95.3)	69.2 (0–96.8)	0	3.0
Behavior endangering others**	92.4 (92.4–98.1)	79.8 (66.7–92.9)	40.0 (0–98.9)	0	0
Suicide attempt in past (3)	90.8 (88.7–97.3)	74.6 (58.1–91.2)	46.2 (0–96.3)	0	3.8
Suicidality during admission (3)*	90.0 (43.2–97.8)	74.0 (53.3–94.6)	69.6 (0–94.2)	0	0
Suicidality during treatment (3)*	92.2 (85.6–92.6)	59.9 (31.3–88.6)	33.3 (0–95.7)	0	7.4
Suicide attempt during treatment (3)*	94.4 (91.9–97.4)	48.4 (0–96.9)	0 (0–94.7)	0	2.6

Correct classification (i.e. rate of correctly positive and correctly negative coded items), sensitivity (i.e. probability that an item present in the patient files is correctly coded in the BADO), and positive predictive value (i.e. probability that an item coded in the BADO is indeed present in the patient files) were calculated according to Jaeger et al. (24). Numbers in round brackets a large spread of sensitivity over the different categories of the polytomous variables, with a maximum specificity of 90% and above for 12 of the 17 variables and of 80% and above for 16 of the 17 examined variables.

Values for the positive predictive value, i.e. the fact that a positive rating in the BADO was indeed supported by a positive rating in the patient file, were above 75% for nine and <75% but above 50% for three variables. The positive predictive value was worst for type of admission, suicidality during treatment, and suicide attempt during treatment. Again, there was a large range of positive predictive values over categories, with a maximum of 80% and above for all variables.

DISCUSSION

The current study examined the reliability of paper based routine documentation in psychiatric inpatient care. To our knowledge, it constitutes the first published evaluation of this kind and complements a similar evaluation of the reliability of electronic routine documentation using a comparable instrument (24). Strengths of the study are the large sample size and the cross-check of a random sample of 10% of the patient-file data to guarantee complete and accurate data entry from paper-based patient files.

The finding that 2% of the BADO forms were not filled in and that 7% of the patient files were unavailable underline the importance of at least a rudimentary control for completeness in routine documentation, and the drawbacks of paper-based patient files (3, 4, 18, 19). Paper-based documentation can be easily used, is quick to complete and cost-effective as no IT infrastructure is necessary. However, cumbersome maintenance, searching for relevant information, poor availability of old files, and high storage and conservation costs are well-known problems of paper-based documentation (18, 20). In particular, having no access to 7% of the patient files might lead to adverse consequences, e.g. if a hospital faces legal action. Nevertheless, at least partly paper-based documentation remains reality in psychiatric hospitals, even in health care systems of highly developed countries.

In general, the reliability of routine documentation was found to be adequate in our study. The results concerning correct classification were comparable with findings by Jaeger et al. (24), with values for nationality, occupational situation, living situation, type of entry, and legal care being higher, and values for type of discharge, forced medication, behavior endangering others, and suicidality during admission being lower in our study (24). There were only few variables where sensitivity and positive predictive value were calculated in both studies. Again, the results were comparable for sensitivity, and slightly worse for the positive predictive value in our analysis (24). This could be interpreted as an indication that, at least for the majority of the examined items, methodological improvements like prospective electronic documentation, enforcement of the documentation of mandatory items, and routine checks for completeness and for erroneous data entry don't seem to have a large impact due to ceiling effects. This pertains to socio-demographic data, disease-related data, and treatment-related data, in particular when data important for administrative, financial, or legal purposes are concerned.

In agreement with Jaeger et al. (24), we found a high spread of values of correct classification, sensitivity, and positive predictive value for different categories of the examined variables (24). This may be the consequence of poor user-friendliness, too complex, and too differentiated categories or category definitions that leave too much uncertainty which category should be chosen (4, 24). Especially rare but clinically highly relevant events like suicide attempts were subject to poor sensitivity and positive predictive value, and the acceptable reliability can largely be attributed to correct negative ratings, i.e. agreement in the routine documentation and paper file that a suicide attempt did not occur (24).

Variables with poor performance that should be considered for revision or elimination from routine documentation include living situation, type of admission, and suicide attempt/suicidality during treatment. In particular, variables that have to be re-checked with clinical documentation (e.g. living situation, education) or taken from registers (e.g. sector patient) have a tendency to be completed without ensuring accuracy of the data and should be viewed critically.

Diagnosis related variables—which were not examined in the study of Jaeger et al. (24)—performed adequately with poorest reliability for F1- and F2-diagnoses. This may have been caused by adjustments of diagnoses at finalization of the documentation when diagnostic processes were finalized and all information was available. Also, differences in the assessments by the treating physician and the supervising psychiatrist could play a role. In addition, there is a well-known diagnostic shift in first-episode psychosis that could contribute to this phenomenon (28). Furthermore—in general—the agreement between multiple psychiatrists diagnosing the same patients is limited, and this may further contribute to this result (29).

LIMITATIONS

Relatively old patient files from 1998 to 2006 were examined and only data from one study site was used, potentially limiting the generalizability of our results. Reliability of the paper-based routine documentation is measured *via* agreement of information recorded in the BADO with information available in paper-based patient files. Whereas these can be considered as mostly complete and representative of the clinical case, documentation quality is inferior compared to, e.g. prospective structured data acquisition for scientific studies. Therefore the current study cannot provide a conclusive answer to the question how reliable routine paper documentation really is, but can be considered to be a valid approximation to this research question. Furthermore, we were only able to examine about 2% of all inpatient cases in the observation period; however, the sample size of the current analysis is larger than in pre-existing literature (30) and can be considered sufficient. Additionally, only first hospitalizations of persons with a psychotic syndrome were included. Although it is unlikely that reliability of routine documentation is influenced by this selection to a relevant degree, this might impair generalizability of our findings, and—in particular—the reliability of diagnosis coding should be re-examined in future studies.

CONCLUSION AND RECOMMENDATIONS FOR FURTHER IMPROVEMENT

In summary, electronic routine documentation has to be considered superior to paper-based routine documentation due to the possibility for automatic checks for completeness, formatting, theoretically possible values, and the possibility to reuse pre-existing administrative data. However, paper-based routine documentation also reaches acceptable reliability in general, but this is dependent on the chosen documentation categories and variables.

Recommendations for further improvement of paper-based routine documentation include implementation of checks for completeness, data plausibility, centralized data entry, controlling and management, definition of the persons responsible for completion, documentation without relevant delay, and clear instructions for completion of individual variables (8, 10). Some of these measures, however, decrease cost-effectiveness of routine documentation and have to be balanced against the possible benefits of improved documentation quality. For all forms of routine documentation, the lack of available time is a limiting factor. Time for completing documentation is missing for other professional activities of the responsible health care staff, i.e. it has to be taken from direct clinical work with the patients, professional training, research, and teaching activities (31).

Based on the present findings, paper-based routine documentation can indeed be used for quality management, organizational development, and health services research, but its limitations have to be kept in mind (4, 22–24).

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Ethik-Kommission der Ärztekammer Hamburg, Hamburg, Germany. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

AUTHOR CONTRIBUTIONS

CH designed the study, and CB conducted data entry and management. DF and CH analyzed and interpreted the data, and wrote the initial draft of the paper. CB, KS, DS, EK, SB, and UL revised the paper for important intellectual content. All authors have contributed to, read, and approved the final version of the manuscript. DF had full access to all the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

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CLINICAL STUDY PROTOCOL
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Physical and Pharmacological Restraints in Hospital Care: Protocol for a Systematic Review

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Background: Physical and pharmacological restraints, defined as all measures limiting a person in his or her freedom, are extensively used to handle unsafe or problematic behavior in hospital care. There are increasing concerns as to the extent with which these restraints are being used in hospitals, and whether their benefits outweigh their potential harm. There is currently no comprehensive literature overview on the beneficial and/or adverse effects of the use of physical and pharmacological restraints in the hospital setting.

Methods: A systematic review of the existing literature will be performed on the beneficial and/or adverse effects of physical and pharmacological restraints in the hospital setting. Relevant databases will be systematically searched. A dedicated search strategy was composed. A visualization of similarities (VOS) analysis was used to further specify the search. Observational studies, and if available, randomized controlled trials reporting on beneficial and/or adverse effects of physical and/or pharmacological restraints in the general hospital setting will be included. Data from included articles will be extracted and analyzed. If the data is suitable for quantitative analysis, meta-analysis will be applied.

Discussion: This review will provide data on the beneficial and/or adverse effects of the use of physical and pharmacological restraints in hospital care. With this review we aim to guide health professionals by providing a critique of the available evidence regarding their choice to either apply or withhold from using restraints. A limitation of the current review will be that we will not specifically address ethical aspects of restraint use. Nevertheless, the outcomes of our systematic review can be used in the composition of a multidisciplinary guideline. Furthermore, our systematic review might determine knowledge gaps in the evidence, and recommendations on how to target these gaps with future research.

Systematic Review Registration: PROSPERO registration number: CRD42019116186.

Keywords: physical restraint, pharmacological restraint, chemical restraint, hospital, adverse effects, complications, behavioral issues, systematic review protocol

INTRODUCTION

Rationale

Physical and pharmacological restraints are still being used extensively by health professionals in general hospital care (1–4). Physical and pharmacological restraints can be defined as measures that limit a person in his or her freedom (5). Physical restraints are any action or procedure that prevents a person's free body movement to a position of choice and/or normal access to his/her body by the use of any method, attached or adjacent to a person's body that he/she cannot control or remove easily (4, 6). Examples of physical restraints range from applying the brakes on a wheelchair or raising the bed rails, to using an abdominal restraint (5, 7–9). Even though considered less invasive, methods such as using video, mechanical (e.g., seat exit alarms), or acoustical surveillance are also seen as restraints (10). Pharmacological, also called chemical, restraints are a form of restraint in which drugs are used to restrain patients. Although no consensus definition exists, they can be defined as either the deliberate or incidental use of pharmaceutical products to control a person's behavior and/or to restrict his or her freedom of movement, when they are not exclusively intended to treat a medical condition (8, 11). Medicaments such as benzodiazepines and antipsychotics, that are commonly used in psychiatric practice, for example in, respectively, the treatment of insomnia and the treatment of psychosis, are also used as pharmacological restraints due to their sedative effects. Physical and pharmacological restraints are mostly used when a patient shows behavior that compromises his or her own safety and that can cause serious physical or mental injuries, or compromises the safety of others (4, 12). Examples of this behavior range from wandering and making repetitive or disturbing noises to agitated and aggressive behavior or even suicidality (13, 14). If used properly, restraints are only used in cases where there is no alternative and less invasive measure possible. Moreover, only the least invasive or restraining measure that is effective in a given situation should be used (5, 9).

In the last few years, medical, ethical, and political concerns have increasingly risen about the extent with which restraints are used in hospitals and whether their beneficial effects outweigh their potential harm (1–4, 15). Potential harm associated with restraints is numerous, for example, malnutrition, bed sores, incontinence, contractures, falling, as well as mental deterioration and worsening of the behavior that was the reason to use the restraint in the first place (5, 9, 16). The use of restraints is also known to have a negative psychological impact on patients, provoking feelings of fear or anger, as well as feelings of embarrassment and the experience of loss of dignity (2, 16). Furthermore, the evidence on the benefits of restraints is not convincing, e.g., restraints do not always seem to be effective in reducing falls, or in preventing patients from removing their medical devices (4, 17, 18). A majority of the patients admitted to hospitals nowadays are elderly. Elderly patients are one of the patient groups with a higher risk to experience physical or pharmacological restraints (9). Furthermore, they are also more prone to suffer from the adverse consequences of these restraints than younger patients. Restraints may even increase the chance of physical or mental harm, instead of reducing it, particularly in the elderly (9). Considering the potential harm and the fact that the evidence suggests that restraints are not unequivocally effective in preventing the harmful situations they were indicated for in the first place, the question is whether restraint use is ethically justifiable. Moreover, restraints always imply a far-reaching restriction of personal freedom and are often applied in situations where patients are not able to give permission for the intervention themselves, and where one has to rely on permission from a guardian (19, 20). In the Netherlands, these concerns have gained attention in the political setting and have recently led to the development of a new quality indicator on the use of restraints and an update of the law on coercion in care (15, 21). In some other countries, e.g., the United Kingdom and Iceland, the use of restraints is even already restricted or prohibited in certain settings (22).

Currently, there is no comprehensive literature overview on the beneficial and/or adverse effects of the use of physical and pharmacological restraints in the hospital setting. Therefore, health professionals that are being confronted with unsafe or problematic behavior lack evidence based guidance. Hospitals in the Netherlands have constructed their own guidelines, but there is no national or international consensus on how and when to use physical or pharmacological restraints in hospitals. Importantly, there are signs that the hospitals' own guidelines are not always used appropriately when applying restraints. In

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Abbreviations: ADL, activities of daily living; AMT, Abbreviated Mental Test; ABS, Agitated Behavior Scale; BARS, Behavioral Activity Rating Scale; CAM, Confusion Assessment Method; GRADE, Grading Recommendations Assessment, Development and Evaluation; ICTRP, International Clinical Trials Registry Platform; MBI, Modified Barthel Index; MeSH, medical subject headings; MMSE, Mini-Mental State Examination; NOS, Newcastle-Ottawa Scale; PRISMA, preferred reporting items for systematic review and meta-analysis; PRISMA-P, preferred reporting items for systematic review and meta-analysis protocols; RASS, Richmond Agitation-Sedation Scale; VOS, visualization of similarities; WHO, World Health Organization.

Dutch research from 2015, only 31% of 346 interviewed nurses followed a guideline while using a restraint on a patient (3). In a Belgian study, only 26.9% of participating physicians used guidelines for the pharmacotherapeutic management of agitation (23). Furthermore, it was recently shown that most of the nurses participating in a study did not understand the reasons for restraint use (24). The lack of available evidence based guidance may cause uncertainty in the practice of applying restraints and wrongful use of restraints.

In conclusion, there seems to be a gap between new developments and increasing attention for reducing restraints in hospitals on the one hand, and a lack of evidence based practice for using restraints on the other hand. In this project, we aim to address this gap by systematically reviewing the available literature on the beneficial and/or adverse effects of the use of physical and pharmacological restraints in the hospital setting.

Objectives

Our main objective is to systematically accumulate and critically review the available evidence on the beneficial and/or adverse effects of different physical and pharmacological restraints in the hospital setting. We intend to do this by collecting evidence on different outcomes that report information on either a beneficial or an adverse effect of the use of restraints. For example, both a shorter length of hospital stay for restrained patients, as well as a shorter time for a patient to reach a state of tranquillity after administration of a pharmacological restraint implicate a beneficial effect of the use of restraint. In contrast, a high rate of complications (e.g., falls, adverse drug events, or agitation) occurring in patients that were in restraints during their hospital stay implicates an adverse effect of the use of restraints.

METHODS

Review Method

This systematic review protocol was drafted according to the preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement (25). The preferred reporting items for systematic review and meta-analysis (PRISMA) checklist will be used throughout the process of drawing up the systematic review (26). The protocol is registered in the PROSPERO international prospective register of systematic reviews.

Eligibility Criteria

In this section, we specify the criteria by which we will select the studies that will be included in the systematic review.

The first criterion for inclusion we are considering is the study design. We will be including observational studies, e.g., prospective and retrospective cohort studies, case-control studies, cross-sectional studies, case series with sample sizes equal to or larger than 10, as well as experimental studies if available, e.g., randomized controlled trials. By surveying relevant literature, we expect that most available studies will be observational studies, while experimental studies are not expected to be widely available.

Another criterion we will be selecting studies on is the setting the studies are conducted in. Participants in studies should be admitted to the hospital. We define the hospital setting as all medical wards of general hospitals, including but not limited to surgical or geriatric wards, and emergency departments of general hospitals. Studies including patients admitted to intensive care units (ICU) will be excluded considering an ongoing review of another research group specifically on that subject (27). Moreover, we exclude this group considering it is a different population admitted in distinct conditions, which are not generalizable to other wards of a general hospital. Also studies conducted on psychiatric wards will be excluded, given that these studies address a specific patient group and care setting that does not generalize to the general hospital. Studies not conducted in general hospitals will be excluded. Consequently, we will exclude studies conducted in nursing homes and other long term care facilities, as well as studies conducted in psychiatric institutions or psychiatric hospitals. We exclude these settings considering the already available evidence on the subject in these settings (28–30). Studies that contain data from general hospitals as well as nursing homes or other care facilities will be used if they clearly separate the results for each setting, or if these results can be provided separately by the authors of these studies.

The next selecting criterion is the intervention that studies look in to. The intervention we are interested in is the use of physical or pharmacological restraints. These restraints have to be used with the intention to aid the safety of the patient and its surroundings, for example, when a patient shows behavior that compromises his or her own safety or the safety of others and that can cause serious physical or mental injury. We will not include studies using physical or pharmacological interventions that are applied exclusively with the intention to treat a disease or disorder, e.g., antipsychotics prescribed with the intention to treat a delirium, restricting or forcing dietary intake in case of, e.g., refeeding, or benzodiazepines prescribed with the intention to treat sleeping disorders or alcohol withdrawal. The comparators we are interested in are either no use of physical or pharmacological restraints, use of alternative measures instead of physical or pharmacological restraints, or use of less invasive or restraining physical or pharmacological restraints. Specifically, if the literature allows, pharmacological restraints are compared either to a placebo or to other pharmacological restraints, e.g., antipsychotics compared to benzodiazepines or a placebo. For physical restraints, a multitude of different comparisons can be made. For example, comparisons between standard restraints and less invasive restraints such as bed- or seat exit alarms, motion detectors, or acoustical surveillance. Furthermore, comparisons between standard restraints and new, possibly safer and more effective restraints, such as safe enclosures. Another possibility is a comparison between access to a bed- or seat exit alarm versus no access to such an alarm. Also expected to be available are studies looking into associations between restraint and other factors, such as delirium or falls. For example, such a study could investigate the association of restraint in a group of patients suffering from delirium compared to a group of patients without delirium.

Another important criterion for selection of studies are the study outcomes. To provide a structured overview of our outcomes of interest, we listed our outcomes of interest in **Table 1**. A further elaboration on the outcomes is described below in the *Outcomes and Prioritization* section.

Other study characteristics we will take into account while conducting the selection process are timing, geographical setting, and language. We will include articles published from inception to the present date. We will include studies in the English and Dutch language. If relevant studies in other languages are available, they can be used, providing that there is a usable translation. There are no restrictions for the geographical locations the studies are conducted in. We will include studies that have been fully published.

TABLE 1 | Outcomes of interest.

Primary outcomes			
Length of hospital stay			
Complication rate	Overall		
	Divided by type of complication	Physical health	Falls
			Walking dependence
			ADL dependence
			Pressure ulcers
			Contractures
			Strangulation
			Laceration
			Other
		Mental health	Cognitive performance
			Behavioral issues
			Depressive symptoms
			Anxiety
			Agitation
			Aggression
			Other
Success rate	Overall		
	Specific measures	Time to tranquility or sedation Need for additional sedation	
Secondary outcomes			
Survival			
Symptom severity	Somatic		
	Psychiatric		
Effect on the healthcare system	Healthcare providers (e.g., nurses, physicians) Health costs		
	Cost effectiveness		

Information Sources

The information sources we will use are the MEDLINE, Embase, and PsycINFO databases. In addition, we will scan reference lists of included studies and relevant guidelines to ensure that no relevant studies will be excluded from the review.

Search Strategy

We have consulted an experienced medical information specialist for composing the search strategy. Firstly, we performed a scoping search in Google Scholar, including backward and forward reference citation analyses and similar article searches in PubMed. This yielded reference sets on the subjects of physical restraints and pharmacological restraints.

To further optimize the search, we composed a comprehensive list of physical restraints and problem behavior types and synonyms using related guidelines, overview articles, and a consultation of a clinical neuropsychologist (7, 9, 13, 14, 31–38).

A dedicated search strategy combining text words and medical subject headings (MeSH) was composed for the MEDLINE database. Subsequently, a visualization of similarities (VOS) analysis was conducted using VOS viewer software (39) on the MEDLINE search results in order to identify candidate terms for notting out of the search strategy, to further specify the search. **Figure 1** shows the density visualization of the VOS analysis. Consequently, by scanning the resulting network, we excluded several search terms that would yield irrelevant studies for our search. The search strategy was adjusted by excluding the irrelevant terms. Exclusion of these irrelevant terms was checked in sensitivity searches. Subsequently, the MEDLINE search strategy was adjusted for the Embase and PsycINFO databases. The final search strategy is a sensitive compilation of terms describing the setting, the problem behavior that can cause the need for restraints and the types of restraints included, physical as well as pharmacological. For a comprehensive overview of the search terms used, we refer to the search strategy itself, added in **Supplementary File 1**. The final search will be repeated in the later stages of the systematic review to ensure the most recent publications will not be disregarded.

Study Records

Data Management

The systematic review data management software application we will be using for eligibility screening of references is Rayyan (40). The search records will be checked for duplicates. Endnote will be used for bibliographic records management.

Selection Process

Two reviewers will take part in the selection process of studies. They will both screen all articles resulting from the search by title and abstract, independently from each other. Articles that appear to meet the inclusion criteria will be screened full text by each independent reviewer and will be reviewed for suitability using existing dedicated evaluation instruments for critically and systematically appraising articles. Also articles from which it is

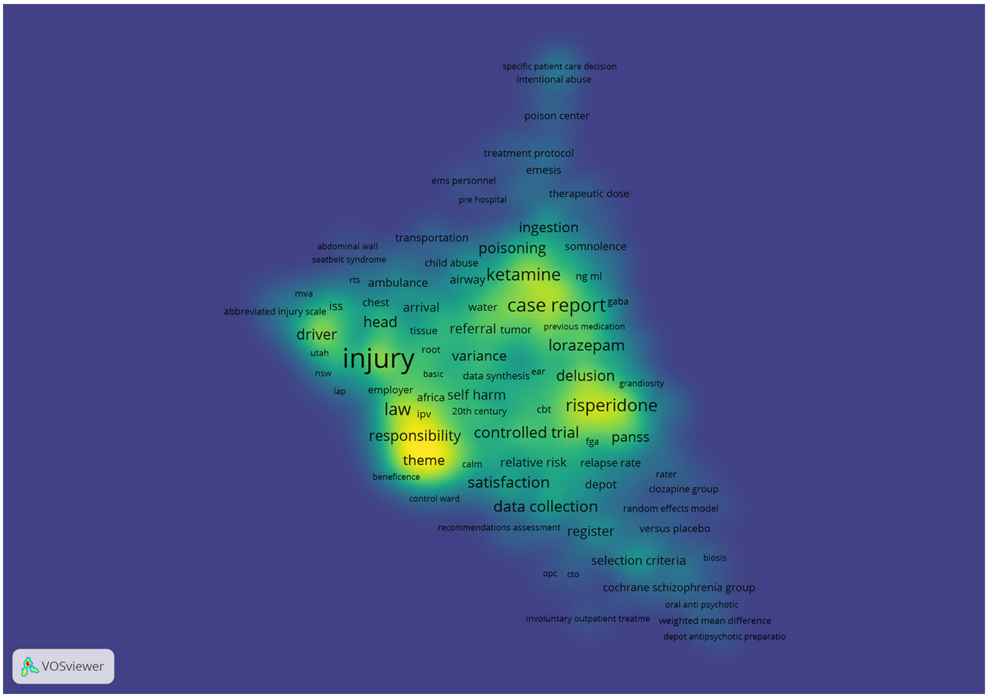

FIGURE 1 | Visualization of similarities density visualization(39).

not clear if they will meet the inclusion criteria based on title and abstract screening will be screened full text by each independent reviewer and reviewed for suitability. Disagreements in the inclusion of articles arising from the title-abstract screening, as well as from the full text screening will be solved by discussion. If no agreement can be reached, a third independent researcher will be consulted to solve the disagreement. The review authors will not be blinded to any article information (such as journal names or author names).

Data Collection Process

A form to extract data from articles will be drawn up, tested, and used. We will elaborate on the data we will be extracting in *Data Items* section. The data extraction will be conducted by one reviewer, and verified by another reviewer. Disagreements will be sorted by discussion, and if no agreement can be reached a third independent researcher will be consulted. In case of uncertainties regarding the data or missing data the authors will be contacted *via* email for clarification or addition.

Data Items

Data items we will be extracting include article information, such as year of publication, author(s), title, and journal name. We will also extract data on study characteristics, such as study design, e.g., observational studies or randomized controlled trials, and study setting, specifically the type of hospital ward, or an emergency department. Data will be extracted on the indications for restraint use, as well as data on the study interventions used, such as the use of physical restraint, or the use of pharmacological restraint. Subsequently, we will also include the study comparators used, such as no use of restraints, or the use of alternative measures. Furthermore, we will extract data on participant characteristics, such as average age, gender and the reason for admission to the hospital. We will also extract data on our outcomes of interest (**Table 1**). Finally, we will extract data on the type of sponsoring the studies had and their publication status.

Outcomes and Prioritization

As mentioned before, in this section, we will elaborate on our outcomes of interest, as listed in **Table 1**. Starting with our primary outcomes of interest, for this review, we are interested in the effects of the use of physical or pharmacological restraints on the patient. We are interested in both beneficial and adverse effects of the use of restraints. We will firstly examine these effects using our primary outcome variables "length of hospital stay" and "complication rate". The length of hospital stay can, depending on the value, imply a beneficial or an adverse effect. If there is a shorter length of hospital stay when using restraints compared to when not using restraints, this can imply a beneficial effect of the use of restraints, while if the length of hospital stay is longer an adverse effect of the restraint use might be implied. The length of stay will be measured in days. A higher complication rate also indicates adverse effects of the use of restraints. We intend to evaluate the overall complication rate, considering some studies will only report on the outcome complications, and will not distinguish the type of complications that have occurred. Additionally, we intend to differentiate according to type of complication for studies that do make a distinction. By surveying relevant literature, we found that complications can be arranged into several categories. Categories and respective tools of measurement include, cognitive performance, measured by, e.g., the Mini-Mental State Examination (MMSE) (41) or the Abbreviated Mental Test (AMT) (42, 43), behavioral problems, measured by, e.g., the Agitated Behavior Scale (ABS) (44), the Behavioral Activity Rating Scale (BARS) (45), the Richmond Agitation-Sedation Scale (RASS) (46), or the Confusion Assessment Method (CAM) (47), rate of falls, walking and other activities of Daily Living (ADL) dependence, measured, e.g., by the Modified Barthel Index (MBI) (48, 49), rate of pressure ulcers and rate of contractures (7). Articles tend to split the adverse effects in physical and mental health problems. We intend to use validated tools of measurement, if available.

Regarding the beneficial outcomes of restraint use, we are interested in the success rate of the restraint application, i.e., the percentage that the restraint has been effective, e.g., in controlling the behavior it was applied for. Two measures that are being used to specify this outcome are "time to tranquility or time to sedation," as evaluated by different measurement tools, e.g., BARS, the ABS, or the RASS, and the need for additional restraints. The time (in minutes) until a certain threshold on the behavioral rating scale has been reached is assessed from the application of the restraint.

Secondarily, we are interested in the survival. This can give information on a beneficial or adverse effect of the use of physical or pharmacological restraints. For example, if the duration of survival of patients that were restrained at some point in the treatment is shorter than that of similar patients that were not restrained, it can indicate an adverse effect of the restraint.

Another secondary outcome of interest is symptom severity, split into physical and psychiatric symptoms. This will give information about the effects of the restraint on symptoms.

We are also interested in the effects of the use of physical or pharmacological restraints for the health care system in general. We are interested in the effects on health care providers who deal with applying restraints, such as physicians and nurses. We are also interested in the effect on the health costs. Moreover, we intend to review data on the cost effectiveness of the use of restraints.

Risk of Bias in Individual Studies

The risk of bias will be assessed by one reviewer, and verified by another reviewer. Disagreements will be sorted by discussion, if no agreement can be reached a third independent researcher will be consulted. The risk of bias will be assessed by using dedicated tools such as the latest version of the Cochrane Collaboration Tool for assessing risk of bias (50), or the Newcastle-Ottawa scale (NOS) (51), depending on the type of articles included.

We will not exclude any articles according to risk of bias. Because of the small number of available articles expected on this subject, we want to include all available evidence. However, we will carefully document risk of bias and consider the risk of bias while interpreting the results.

Data Synthesis

Criteria Under Which Data Will Be Quantitatively Synthesized

If studies are sufficiently homogeneous, a meta-analysis will be conducted on the collected data, using a random-effects model in the software program Comprehensive Meta-analysis. Whether or not a meta-analysis is possible will become apparent after data extraction. Also, if certain groups of studies are sufficiently homogeneous, due to the diversity of outcomes, we are including, we will conduct a meta-analysis on part of the included studies.

Planned Methods for Summarization, Handling Data and Combining Data

We aim at comparing the different interventions and comparators listed in *Data Items* section, depending upon study availability. We will compare restraints with all available comparators including no intervention. This implies that, if two different forms of restraints are compared, we will compare these restraints to investigate their beneficial and adverse effects, e.g., benzodiazepines vs. antipsychotics. We will summarize all extracted data using tables and where possible graphs. If we come across missing data, we will contact the study authors to attempt to obtain the missing data. Assessment of heterogeneity will take place using relevant tests.

Proposed Additional Analysis

If deemed relevant, meta-regression analysis can be used to explain differences in outcomes between studies and subgroups.

Type of Summary Planned If Quantitative Synthesis Is Not Appropriate

If the data or part of the data is not suitable to conduct quantitative tests, those results will be presented in a narrative form using text and tables. The resulting systematic narrative synthesis will provide an overview of the characteristics and results of the included studies using tables. It will also provide a narrative comparison of the findings of the different studies, thereby finding similarities and differences between the studies.

Meta-Bias(es)

To determine whether outcome reporting bias is present, we will check as to whether selective reporting of outcomes is present in included studies by screening protocols in the International Clinical Trials Registry Platform (ICTRP) of the World Health Organization (WHO) (52). If no protocol is available we will compare the method section to the results section. We will also have to take into account selection bias, considering we will include observational non-randomized studies, which are especially susceptible to selection bias. Since non-randomized studies are also susceptible to performance bias and detection bias, we will also check for these biases. In case there are withdrawals from studies, we will check for attrition bias. We will also check for publication bias and small sample bias where possible.

Confidence in Cumulative Evidence

The strength of the body of gathered evidence will be weighed according to the GRADE methodology (Grading Recommendations Assessment, Development and Evaluation) (53).

DISCUSSION

This project aims to systematically review the available literature on the beneficial and adverse effects of the use of physical and pharmacological restraints in hospital care. Our objective is to assemble the available evidence on this subject, and to subsequently provide a critical assessment of the gathered evidence. Results of our review may more optimally guide health professionals in their choice when to refrain from applying restraints in the hospital and to use restraints in a correct way. Additionally, the outcome of our review might aid health professionals in properly discussing the subject of restraints with patients and relatives. Moreover, results will identify knowledge gaps that need to be targeted in order to bring about changes to the daily clinical practice of restraints.

In nursing homes and other non-hospital settings, there have been gradual advances in limiting the use of restraints. For these settings, guidelines and literature overviews have been synthesized and implemented (54–62). For example, in nursing homes throughout the United States, there have already been positive results in reducing the use of restraints, limiting the use of restraints in nursing homes from 40% in the 1980s to 10% in 2008 (7). While restraint use in nursing homes may be reduced even further, these results hold promise for the reduction of restraints in the hospital setting. Moreover, we will not address the use of restraints in psychiatric care facilities. These restraints are usually being applied under a different legal system, which makes it difficult to compare outcomes. Nevertheless, restraints used on psychiatric patients in general hospitals (excluding the psychiatric ward) will be included in the current review.

One of the limitations inherent to all systematic reviews is the amount of evidence available. In our scoping search, we encountered a small amount of studies that focus specifically on the hospital setting. Effects of restraints in the nursing home setting have been better studied, but it remains unknown as to what extent this evidence translates to the hospital setting (28, 30, 63). For the psychiatric setting, evidence on the effects of restraints is also available, although reviews by Nelstrop and Sailas stated the lack of experimental studies as an important limitation (29, 64, 65). Both the patient population (including, e.g., mental and physical health) and the setting (e.g., the amount and qualifications of staff, the architecture of the ward) may cause differences in the effects of restraints in the hospital vs. the nursing home setting. Reviewing the available evidence for the hospital setting therefore seems important to provide health professionals in hospitals with clinically relevant effect estimates regarding the use of restraints. Moreover, the quality of the evidence may limit the conclusions that can be drawn. Given the expected lack of RCTs, residual confounding or reverse causation may induce biases. Nevertheless, conclusions form the best available evidence may inspire future (non-inferiority) RCTs on the effects of restraints in the hospital.

In our scoping search on pharmacological, or chemical, restraints, we found that these terms are used rather sparsely to identify relevant literature. Moreover, we found that not all studies on pharmacological restraints use either the term pharmacological or chemical restraint. This proposed difficulties in composing a comprehensive, but not too broad, search strategy. By additionally including search terms on specific psychopharmacological interventions that may be used as chemical restraint (e.g., benzodiazepines, antipsychotics, and opioids), we aimed at including all relevant evidence. Another difficulty we encountered lies in the definition of pharmacological restraint that we use. Namely, in the introduction, we stated that the pharmaceutical products used as pharmacological restraints cannot be used to treat a medical condition. However, the distinction between treatment of a medical condition and use as a restraint will not always be clear. For example, when treating a psychotic disorder accompanied by aggressive behavior with an antipsychotic drug, the aim of the treatment can be twofold. On the one hand, the aim is to treat the psychosis, and on the other hand, the sedative effect the antipsychotic has can reduce the aggressive behavior. We will critically examine whether this distinction is clear in the studies we include, and take this into account when interpreting the data. Nevertheless, this difficulty in differentiation between treatment vs. chemical restraint remains a potential limitation of this study.

We will not specifically address measures that are used as an alternative to restraints on their own. Nevertheless, we will include all studies that compare the effects of physical or chemical restraints to specific alternatives that consist of domotics (home automation) or psychological interventions. Another example of such an alternative measure is the presence of a relative to calm a disquieted patient, also called "rooming in." Considering the idea that benefits of restraints might not outweigh their adverse effects, these measures might provide a viable alternative. Results of our systematic search may determine as to which extent it is more beneficial and safer to apply these interventions instead of restraints, in which the experiences of both patients and their relatives are important (10, 66–68).

A topic that will not be addressed by this systematic review is the ethical aspect of applying restraints. Cultural differences in the view on restraints may influence the way the beneficial and adverse effects of restraints are being evaluated. Moreover, political forces may impose clinical decisions that are not in line with available evidence. Nevertheless, outcomes of the current review may form an important contribution to the (ethical) debate on the application of restraints in the hospital.

Regarding dissemination of the results of our systematic review, we plan to submit results for publication in peer reviewed scientific journals. Moreover, we intent to present findings at meetings of relevant scientific societies. In addition, literature databases and curated extracted data will be available for interested collaborators on request. Finally, we will write a report for the funding organization, as commissioned by the Dutch Ministry of Health, Welfare and Sport.

In conclusion, with this systematic review protocol, we describe the methodology of our systematic search on the beneficial and adverse effects of physical and chemical restraints in the hospital. We hope that this review will provide health professionals with evidence based knowledge to better guide their choice to apply or refrain from restraints. If the notion is correct, in that for most indications negative effects of restraints outweigh their positive effect, this may lead to a reduction in the use of restraints in the hospital, as has already been achieved in nursing homes. In addition, by addressing knowledge gaps, this review will direct future research that is needed to improve the clinical application of restraints. Moreover, the outcomes of our systematic review can be used in the composition of a multidisciplinary guideline.

AUTHOR CONTRIBUTIONS

WB and RM drafted the first versions of the protocol and manuscript, all authors critically reviewed the protocol and the manuscript and provided comments on the drafts. WB processed these comments. RM and WB provided for the registration of this protocol in Prospero. WB, RM, and JD drafted the search strategy.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyt.2019.00921/full#supplementary-material

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Implied Consent in Treating Psychiatric Emergencies

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Keywords: involuntary treatment, involuntary commitment, psychiatry and the law, patient autonomy, psychiatric policy

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A significant percentage of psychiatric emergencies occur *outside* the psychiatric inpatient unit (1), such as in emergency rooms, outpatient clinics, and on medical floors. The existing literature on the legal, ethical, and practical considerations of compulsory treatment in psychiatric emergency is limited. The purpose of this article is to review the relevant legal and ethical background of treatment over objection in the United States of America, define the term "psychiatric emergency," examine the legal and ethical bases for physicians to act in these situations, and suggest further areas for thought and research. It is our hope that the legal underpinnings of involuntary treatment in the United States, as well as consideration of the relevant ethical issues, will allow lawmakers and providers to create the ideal framework for involuntary treatment outside of inpatient units, wherever they live.

BACKGROUND

Prior to the landmark cases of the latter half of the twentieth century, society and the courts expected psychiatrists to treat patients against their will, even holding psychiatrists accountable for not doing so. For example, a New York court decision in 1968 awarded a patient $300,000 in damages because a hospital did not treat him against his will (2). The attorney general of Pennsylvania wrote that the legal purpose of hospitalization was treatment and therefore no consent was necessary prior to administration of electroconvulsive therapy in state hospitals (3). These decisions were consistent with the psychiatrist's role as state agent and his duty to execute the principles of *parens patriae* (lit. the father of his country), to protect vulnerable individuals, as well as *salus populi suprema lex esto* (lit. the welfare of the people shall be the supreme law), the state's police power to protect its citizens from others (4).

The pendulum from physician responsibility to patient rights would shift in the courtroom. *Rogers v. Okin* (5), in Massachusetts, raised the argument that overriding a patient's refusal of psychotropic medications violated his or her *constitutional* rights to free speech and mentation, privacy, due process, and freedom from cruel and unusual punishment (6). Furrow (7) in a 1982 article extended *Rogers v. Okin* to its "common law analog in tort, informed consent doctrine." He writes that the right to refuse treatment stems from a person's autonomy and is most in line with "dignitary" torts—battery, invasion of privacy, and defamation. Battery is the non-consensual harmful or offensive touching between a perpetrator and victim, which in medicine would be the forcible treatment of an unwilling patient. A non-psychiatric example of this is *Pugsley v. Privette* (8), in which a woman was awarded $75,000 in damages for battery after she underwent a complicated bilateral oophorectomy for which she had consented to only on condition the procedure would be supervised by her general surgeon, who was not present for the surgery. Thomas and Moore (9) relate the case to treatment of an agitated patient without consent, while also raising concern for violation of the false imprisonment tort when using chemical or physical restraints or any means to hold a patient against his or her will. In *Barker v. Netcare Corp.*, (10) the hospital was found liable for false imprisonment when it used physical and chemical restraints to hold Ms. Barker in the emergency room without commencing involuntary commitment proceedings.

The legal founding for patient autonomy in the healthcare system can be traced back to *Schoendorff v. Society of New York Hosp*. (11), when the eminent Justice Cordoza wrote: "Every human being of adult years and sound mind has a right to determine what shall be done with his own body." The process by which we honor this patient autonomy is known as informed consent, wherein the physician explains the procedure, risks and benefits of either accepting or refusing, and then allows the patient to choose whether to proceed (12). The key part of the Schoendorff ruling is that the patient must be of a sound mind, for which the legal term is competence. The medical cousin of competence is capacity, the individual's ability to make an informed decision, which by definition is case specific (13). All persons are assumed to be both competent and have capacity until proven otherwise. As recently as 1953, Indiana state law stated, "Commitment to a hospital for the insane is equivalent to a prior adjudication of incompetency" (14). Over the course of the following decades, the courts would erode this presumed global incompetence for hospitalized psychiatric patients with the logical extension being the right to refuse treatment (15), as was seen in the NYS ruling Rivers v. Katz (16) where it was determined that not having capacity to refuse admission to an inpatient psychiatric unit does not necessarily render one incapacitated to refuse medication.

PSYCHIATRIC EMERGENCIES

Rivers v Katz (17) simultaneously prohibited psychiatric treatment over objection without due process in non-emergent situations for involuntarily committed patients while also establishing grounds for treatment of acute psychiatric emergencies when the patient poses an immediate or substantial threat of physical harm to himself or others. Given that the psychiatric emergency is the sole option for medication over objection in the extrajudicial setting (18), it is important to define what constitutes a psychiatric emergency. As will be seen, this is a matter of great debate.

With regard to medical emergencies, whether defined narrowly as threat of loss of life or limb or as broadly as a situation of "acute suffering" (19), there remains a physical condition which "is usually objectively demonstrable" (18). This objective observability is often lacking in psychiatric emergencies. In the original ruling of *Rogers v. Okin,* the district court judge narrowly defined a psychiatric emergency as "the substantial likelihood of physical harm" (20). This definition was rejected by the Court of Appeals (5) due to its near-impossible requirement for physicians to determine that the occurrence of harm was more probable than its absence. The definition was eventually broadened by the Massachusetts Supreme Judicial Court to include both "occurrence or serious threat of extreme violence, personal injury, or attempted suicide" as well as "necessity of preventing immediate, substantial and irreversible deterioration of a serious mental illness...in which even the smallest of delays would be intolerable" (21). The astute reader will recognize the former reason to be consistent with the physician's power to act as a state agent in police power emergencies and the latter an example of the physicians role as *parens patriae.* Indeed, the Rivers ruling by the New York Court of Appeals (16) parallels this dichotomy by defining psychiatric emergency both in terms of potential for imminent harm as well as potential for deterioration in mental health. In practice, despite evidence that prolonged untreated psychosis results in worse outcomes (22), *parens patriae* rationale is rarely invoked in treating psychiatric emergencies due to the difficulty proving "irreversible deterioration" with a finite delay in treatment (18).

EMERGENT TREATMENT OUTSIDE OF THE PSYCHIATRIC INPATIENT UNIT

Both Rivers and Rogers are examples of case law applicable to the involuntarily hospitalized psychiatric patient. As noted in the introduction, a significant percentage of psychiatric emergencies occur outside the psychiatric hospital, whether that be in the emergency room, medical units, or other healthcare settings. In those settings, the relevant legal doctrine would likely be found in public health law. New York State Public Health Law (23) dictates that medical treatment may be rendered without consent if delay in treatment would "increase the risk to the person's life or health." This definition provides a wide range for physicians operating under *parens patriae*, necessary for the day-to-day functioning of emergency departments. However, there is no mention of police power emergencies which are common occurrences in psychiatric emergency rooms nor is there mention of psychiatric patients being treated in medical emergency rooms. Though not referring specifically to psychiatric emergencies, the 2017 Report of the United Nations High Commissioner for Human Rights, titled "Mental Health and Human Rights," asserts that "outside of institutions, the use of community treatment orders or mandatory outpatient treatment, even if enforced in the community, violates the right to liberty and security of the person as such measures impose treatment and the threat of detention if refused" (24).

Rice and Moore (25) suggest several justifications for the treatment of psychiatric patients in the emergency setting. Firstly, they posit that the very presentation of the patient to the emergency room implies consent for evaluation and care, just as it does for medical patients. Secondly, once a patient presents to the emergency room, a duty is established between physician and patient to provide the "standard care," not doing so would be tantamount to negligence. While the former line of reasoning would only seem to apply to patients who present voluntarily to the emergency room, not those brought unwilling by family or emergency services, the latter would apply regardless of mode of presentation. While a competent patient can decline care, if the physician has reason to believe a patient lacks decisional capacity—as is often the case in psychiatric emergencies such as violent, psychotic, or suicidal behaviors—he is obligated to treat, or risks charges of negligence. Lastly, and perhaps most unusually, the authors extend the physician's "duty to warn" (26) to indicate the court sanctions and even requires providers to protect third-parties, especially if said third parties were under the hospital's care, such as other patients in the emergency room. This last reasoning would provide the legal justification for use of police powers outside of a psychiatric inpatient unit.

Several ethical considerations have been raised to promote forced medication of the agitated psychiatric patient in an emergency situation, including "goal of restoration of autonomy, reduced risk of harm, and treatment of the underlying condition" (12). Furthermore, the protection of staff in an ever-increasingly dangerous workplace (27) to ensure the continued staffing of emergency rooms for all patients is a legitimate public interest. From a practical perspective, articles considering the management of psychiatric patients in the emergency setting, invariably take for granted the physician's obligation to first ensure the safety of other patients and staff members (1).

CONCLUSION AND FUTURE DIRECTIONS

The responsibility of a physician to provide compulsory treatment in a psychiatric emergency is an important exception to the fundamental human right to make decisions about his or her own body and mind. The interplay of emergent need, presumed incompetence, implied consent, and state interest, along with the individual details of each case, are all important in making the correct ethical and legal decision in a given emergency.

While non-emergent treatment over objection decisions benefit from court oversight to ensure there is a compelling state interest to medicate, whether with regard to *parens patriae* or police power, the emergency situation does not allow for any delay in the decision making process. The Massachusetts' Appeals Court rejected the expectation that physicians could predict with reasonable accuracy the probability of imminent harm in a psychiatric emergency. However, legal standards or practice guidelines to determine the threshold for imminent danger would be welcome additions to the field for psychiatrist and patient alike. Furthermore, explicit legal guidelines specific to emergency psychiatric management of populations other than involuntarily admitted patients are sorely needed. The need is not limited to managing a patient's agitation or suicidality but extends to management of a patient in need of psychiatric admission who refuses medical clearance. These guidelines, along with physician education, would promote standardization of the psychiatric patient's experience in the emergency setting.

AUTHOR CONTRIBUTIONS

SB wrote almost the entire manuscript under guidance from HF. HF then edited the manuscript and returned it to SB for her approval of the changes.

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ORIGINAL RESEARCH
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Identifying Direct Coercion in a High Risk Subgroup of Offender Patients With Schizophrenia *via* Machine Learning Algorithms

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Purpose: This study aims to explore risk factors for direct coercive measures (seclusion, restraint, involuntary medication) in a high risk subpopulation of offender patients with schizophrenia spectrum disorders.

Methods: Five hundred sixty nine potential predictor variables were explored in terms of their predictive power for coercion/no coercion in a set of 131 (36.6%) offender patients who experienced coercion and 227 who did not, using machine learning analysis. The dataset was split (70/30%) applying variable filtering, machine learning model building, and selection embedded in nested resampling approach in one subset. The best model was then selected, and the most important variables extracted on the second data subset.

Results: In the final model the following variables identified coercion with a balanced accuracy of 73.28% and a predictive power (area under the curve, AUC) of 0.8468: threat of violence, (actual) violence toward others, the application of direct coercive measures during past psychiatric inpatient treatments, the positive and negative syndrome scales (PANSS) poor impulse control, uncooperativeness, and hostility and the total PANSS-score at admission, prescription of haloperidol during inpatient treatment, the daily cumulative olanzapine equivalent antipsychotic dosage at discharge, and the legal prognosis estimated by a team of licensed forensic psychiatrists.

Conclusions: Results confirm prior findings, add detail on factors indicative for the use of direct coercion, and provide clarification on inconsistencies. Limitations, clinical relevance, and avenues for future research are discussed.

Keywords: coercion, seclusion, restraint, involuntary medication, offenders with schizophrenia spectrum disorder, severe mental illness, machine learning, forensic psychiatry

INTRODUCTION

For a uniform definition of direct (formal, institutional) coercive measures in psychiatry it has been proposed to encompass restraint, seclusion, and involuntary medication (1–3): restraint is to include physical restraint by another person or mechanical restraint with a device, seclusion is to involve the locking up of a person alone in a room, and involuntary medication encompasses the administration of medication against a patient's will. Various guidelines and associations of professionals in mental health care have long called for a reduction in the use of such practices for numerous reasons including legal, economic, and ethical concerns, doubts in their effectiveness and worries over short- and long-term effects of such measures on patients', professionals', and their social network's physical and mental health (4–7). Prior research has identified numerous risk factors for seclusion (8–14), restraint (15–20), involuntary medication (21, 22), or combinations thereof (16, 23–35) with differences and inconsistencies in reported predictor variables being larger between studies exploring the same coercive measure than between coercive measures. The most frequently identified predictors include schizophrenia spectrum disorder (8, 12, 17, 19, 22, 25, 27, 30, 31, 34, 35), a threat of violence/aggression (9, 18, 20, 24, 25, 36–40), prior involuntary (admission to) treatment (15, 17, 19, 22, 27, 30, 34, 35), female gender (8, 11, 13, 20), male gender (10, 14, 16, 17, 19, 24, 25, 30, 33), younger age (10, 13, 14, 16–18, 20, 24, 25, 33, 34), older age (19), and substance abuse (8, 34). Moreover, there is no consensus on whether restraint, seclusion, or involuntary medication are more intrusive and detrimental on patients' well-being and they are often used in combination or as a partial or complete substitute for each other depending on cultural norms or legal statutes prohibiting the use of one or another thus resulting in skewed results if only one measure of coercion is explored (2, 3, 23, 26, 37, 41). Another confounder in research on the prevalence of direct coercive measures in general psychiatry stems from some patients with behavior resulting in the frequent use of coercive measures but no criminal history being nonetheless treated in forensic psychiatry in some countries but not others (3, 42). There is a general consensus that more research on the use of coercive measures in forensic psychiatry is needed (1, 3) in an era in which the caring aspect of forensic treatment has achieved equality in comparison to custodial objectives (i.e., public safety). Furthermore, particularly subtle factors contributing to the use of coercive measures in psychiatry as a whole may be more pronounced and observable in populations of patients with high risk for coercive measures, which can be found in forensic psychiatry (3). With predictors of coercive measures identified so far being mostly broad categories, research identifying finer, more specific predictors for coercion is needed.

Two recent studies used machine learning to explore factors predicting the use of any direct coercive measures (30) or mechanical restraint in particular (15) in general psychiatry. With machine learning being developed to reveal previously “unseen” non-linear interdependencies between variables (43, 44), both studies were enabled to analyze a much greater number of potential predictors and identify more detailed clinically relevant factors predicting coercion with better model performance and generalizability (due to cross-validation) than prior research using conventional statistical procedures (15, 30). Both recognize a need for similar research in other treatment settings and recommend machine learning due to its results' superiority to those from contemporary statistical techniques in terms of their generalizability, sensitivity, specificity, accuracy, and predictive validity (AUC: area under the curve).

The purpose of the current study is to employ machine learning for the analysis of 569 potential predictors of direct coercive measures in 370 Swiss forensic offender patients with a schizophrenia spectrum disorder during their involuntary inpatient treatment. By selecting a sample in which the presence of those factors most frequently and consistently identified to predict coercive measures (schizophreniform disorder, threats of violence, involuntary admission) are present in all cases, we aim to identify more subtle and detailed predictors of coercion.

MATERIALS AND METHODS

Source of Data

In our retrospective study design, directed qualitative content analysis (45) was used to extract data from files of 370 offender patients with a schizophrenia spectrum disorder according to ICD-10 (46) judicially admitted to the Centre for Inpatient Forensic Therapies at the Zurich University Hospital of Psychiatry between 1982 and 2016. Specifically, over 500 parameters were rated with the extended (47, 48) rating protocol based on criteria proposed by Seifert (49) by one trained independent physician with subsequent validation by a second trained independent coder analyzing a random subsample of 10% of cases with a Cohen's Kappa of 0.78 indicating substantial inter-rater reliability (50, 51). In light of the legal requirements in Switzerland, files can be assumed to be composed with utmost care and included anamneses, psychiatric assessments (including psychopathology), past and current medication, and other treatments documented by licensed psychiatrists and psychologists trained in psychotherapy, reports from other trained health care professionals (nursing and care staff, social workers), police reports, testimonies, court proceedings, and other legal documents. Documentation of psychopathological symptoms was available from licensed psychiatrists diagnosing and treating patients prior to the index offense, forensic psychiatrists immediately after admission of offenders to the forensic center and before their discharge. A close adoption of the Positive and Negative Symptom Scale (PANSS) was used to categorize and quantify psychopathological symptoms (into 30 subcategories dichotomized to symptom not present/symptom present) during content analysis (52). Antipsychotic dosages per day after admission and at discharge were converted into olanzapine equivalents by using conversion factors provided through the classical weighted mean dose method (53) if possible and the minimum effective dose method (54) or (lastly) international experts' consensus based olanzapine equivalents (55) in all other instances.

Analysis of all cases included in this study was approved by the Zurich Cantonal Ethics Committee.

Machine Learning

Supervised machine learning (ML) is suitable for explorative analyses such as in the current study. In ML, a so-called outcome variable is defined *a priori* (often dichotomous; e.g., coercion/no coercion) and numerous other variables are tested for their ability to predict this outcome. Thus, ML means a computer algorithm [such as logistic regression, support vector machines (SVM), decision trees or k-nearest neighbor (KNN) depending on the data structure] is developed which uses all variables available (e.g., psychopathology, medication, biography) in order to try predict the outcome variable for any given patient.

In contrast to conventional (hypothesis testing) statistical methods, ML is able to uncover hidden interrelationships in data sets, can explore a larger set of variables at once, and can use various (linear and non-linear) algorithms, which can be evaluated quantitatively by transcending p-value thresholds. One of the most significant risks in ML is overfitting. This means that the mathematical algorithms depend heavily on the data structure and are sensitive to "noise" within the data, which leads to overestimation in the prediction. Especially if the study population is small and many variables are explored, there is a substantial risk for overfitting. Techniques designed to minimize the risk for overfitting include splitting the data to obtain a separate set of data for testing ML-results, cross-validation of ML results, regularization, or a reduction of the (predictor) variables explored.

Despite such safeguards against overfitting, ML results from one data set should be treated with caution and need further confirmation by new data and perhaps more conservative statistical approaches before they can be considered to be generalizable (56–58).

Statistical Analysis

Figure 1 provides an overview of the statistical Steps taken in the present study, which are described in detail below. All Steps were performed using R version 3.6.3. and the MLR package v2.171 (59). CI calculations of the balanced accuracy were conducted using MATLAB R2019a (MATLAB and Statistics Toolbox Release 2012b, The MathWorks, Inc., Natick, Massachusetts, United States) with the add-on "computing the posterior balanced accuracy" v1.0 (60). Online calculators were used to obtain the CI auf AUC (61) and the CI of the remaining classification performance measures (62).

Preliminary Data Processing and Measures

All raw data was first processed for machine learning (see **Figure 1** Step 1)—multiple categorical variables were converted to binary code. Continuous and ordinal variables were not manipulated. Variables with more than 33% missing values were eliminated resulting in a remaining set of 570 variables.

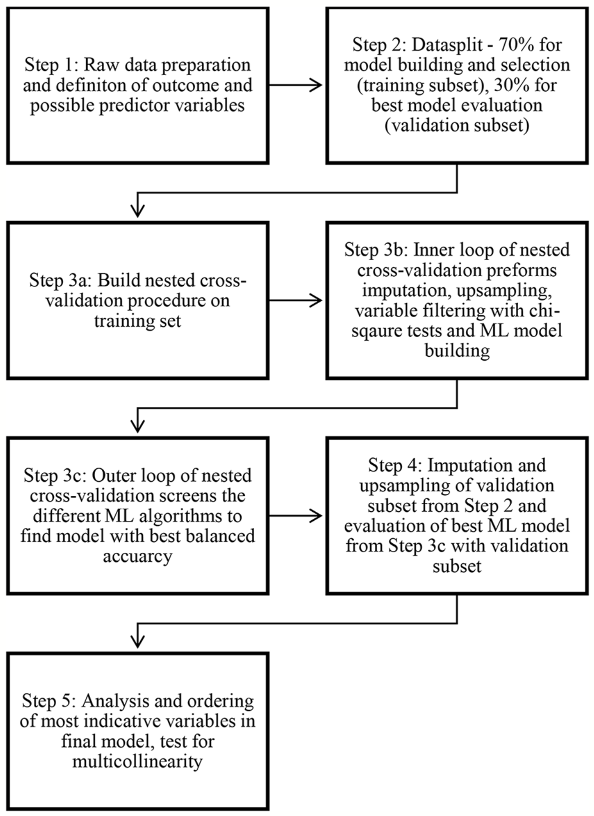

FIGURE 1 | Data processing and statistical analysis.

Data on the use or non-use of direct coercive measures was available for 358 of all explored offender patients. Of these 131 (36.6%) experienced one or more direct coercive measure, which corresponds with rates of coercion reported in extant literature, ranging from 21 to 59% of patients (63). The occurrence of any one direct coercive measure or combinations thereof was defined to be the outcome variable for further analysis (i.e., coercion/no coercion). No coercion was defined as the positive class, coercion as the negative class.

Most patients were subjected to a combination of two or more measures of direct coercion. Just 31 (8.66%) patients were subjected only to seclusion and 12 (3.35%) only to involuntary medication. Physical restraint is not used in Switzerland and mechanical restraint was always used in combination with seclusion and/or involuntary medication.

Next, the initial dataset was randomly divided into two subsets (see **Figure 1**, Step 2)—a training dataset with 70% of all patient cases (251 patients) and a validation dataset with 30% of cases (107 patients). The training data set was used for variable reduction and model building/selection (see **Figure 1**, Steps 3a–c) whereas the validation data set was used to evaluate the previously selected statistical model (see **Figure 1**, Steps 4 and 5). The selection of predictor variables/model building and model evaluation was based on different subsets of the available data in order to minimize the risk for overfitting.

Imputation, Balancing, Variable Filtering, Statistical Model Building/Selection, and Nested Resampling

All of the following Steps under above heading where performed with the training data set (251 patients) only, while the data set for validation (107 patients) remained untouched:

One main objective of the present study was to identify the most important predictor variables from the multitude of 569 possible variables. In addition, a reduction of variables was intended to counteract overfitting and keep computing times in initial model building at an acceptable level. Therefore, chi square testing was applied to the initial 569 predictor variables to filter for their 10 most predictive variables for further model building (see **Figure 1**, Step 3b).

In addition, to enable ML to more flexibly employ statistical approaches that are sensitive to missing values, imputation by mean for continuous variables and imputation by mode for categorical variables was applied to the training data set to estimate missing values (see **Figure 1**, Step 3b). The imputation weights were saved to be applied later to the validation data set (see **Figure 1**, Step 5).

Since the distribution of the outcome coercion/no coercion was not balanced (36.6 *vs.* 63.4%) this also led to a disbalance in the calculated sensitivity/specificity of the models, so the smaller subset (coercion experienced) was oversampled by a rate of 2.

However, overfitting is an issue to be guarded against. Furthermore, to achieve reliable performance estimates, imputation and variable filtering should be embedded in a cross validation process and model building and evaluation should be kept separated (64, 65).

Nested resampling is best suited for this objective—in an inner loop data processing Steps and model training can be performed imbedded in cross-validation and then in an outer loop the performance of these models can be tested also embedded in cross-validation. In this study the nested resampling model (see **Figure 1**, Step 3a) was built with the inner loop preforming the imputation, oversampling, variable filtration, and model building within 5-fold cross-validation (see **Figure 1**, Step 3b) and the outer loop being used for performance evaluation also embedded in 5-fold-cross-validation (see **Figure 1**, Step 3c), a technique of artificially creating different subsamples of a data set (66). In cross-validation balanced accuracy was optimized for.

In order to select the final statistical model (see **Figure 1**, Step 3c), different ML algorithms—logistic regression, trees, random forest, gradient boosting, KNN (k-nearest neighbor), support vector machines (SVM), and naive Bayes [for a more detailed description see (44)]—were trained (see **Figure 1**, Step 3b). No hyperparameters were optimized. The default hyperparameters can be obtained from the **Supplementary Materials**. Finally the model performance of each model was calculated and assessed in terms of its balanced accuracy and goodness of fit (measured with the receiver operating characteristic, balanced curve area under the curve method, ROC balanced AUC) (67) (see **Figure 1**, Step 3c). Moreover, specificity, sensitivity, positive predictive value (PPV), and negative predictive value (NPV) were evaluated. The described nested resampling strategy was applied for all ML algorithms and the ML model with the best balanced accuracy was chosen for final model validation with the data set for validation (107 patients, see **Figure 1**, Step 4).

Model Validation and Variable Importance

The validation subset of the total data (30%, 107 patients) was imputed with the stored weights from Step 3b by mean and mode. Then, the best previously identified model was applied to the data and again the performance measures of this final model were assessed (see **Figure 1**, Step 4). The variables used to predict the outcome variable (coercion/no coercion) in the final model were ordered by indicative power and tested for multicollinearity (see **Figure 1**, Step 5), as will be detailed in the *Results*.

RESULTS

Sociodemographic characteristics and legal justifications for the application of direct coercion are summarized below (**Table 1**).

The performance measures of all trained models during the nested resampling procedure on the initial training subset (70% of the total data set) can be seen in **Table 2** (for detailed results

TABLE 1 | Sociodemographic characteristics of the studied sample and legal justifications for use of direct coercion.

Characteristics	Total n/N (%)	No coercion n/N (%)	Coercion n/N (%)
Male sex	333/358 (93)	208/227 (91.6)	125/131 (95.4)
Age at admission (mean, SD)	33.99 (10.191)	34.40 (10.128)	33.27 (10.298)
Native country Switzerland	160/358 (44.7)	105/227 (46.3)	55/131 (42)
Single (at offense)	288/352 (80.4)	181/222 (81.5)	107/130 (82.3)
Legal justification for use of direct coercion			
Endangerment of self			19/131 (14.5)
Threat of violence			74/131 (56.5)
Violence against others (physical)			52/131 (39.7)

SD, standard deviation; N, total study population; n, subgroup with characteristic.

TABLE 2 | Machine learning models and performance during nested resampling.

Statistical procedure	Balanced accuracy (%)	AUC	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)
Logistic regression	75.13	0.85	71	80	85	62
Tree	71.55	0.79	76	67	79	63
Random forest	74.12	0.86	78	70	81	66
Gradient boosting	72.63	0.84	76	69	80	63
KNN	69.56	0.80	68	71	80	57
SVM	76.85	0.84	81	73	83	69
Naive Bayes	77.01	0.84	85	73	84	69

AUC, area under the curve (level of discrimination); PPV, positive predictive value; NPV, negative predictive value; KNN, k-nearest neighbors; SVM, support vector machines.

TABLE 3 | Absolute and relative distribution of relevant predictor variables.

Variable code	Variable description	Coercion experienced	No coercion experienced
R13a	Threat of violence during current inpatient treatment	83/129 (64.3)	30/221 (13.6)
R20a	Violence toward others during current inpatient treatment	62/131 (47.3)	12/227 (5.3)
PH12a	Direct coercive measure applied in past psychiatric inpatient treatment	89/111 (80.2)	61/192 (31.8)
PANSSH28	PANSS-adopted scale at admission: Poor impulse control	98/131 (74.8)	83/224 (37.1)
PANSSH22	PANSS-adopted scale at admission: Uncooperativeness	97/131 (74)	90/224 (40.2)
R8a	Haloperidol prescribed during current inpatient treatment	72/130 (55.4)	57/225 (25.3)
PANSS SCORE ADMH (mean, SD)	Total PANSS score at admission	21.47 (13.03)	17.84 (14.47)
R9e (mean, SD)	Olanzapine equivalent dose at discharge	52.28 (17.83)	42.29 (19.98)
PANSSH7	PANSS-adopted scale at admission: Hostility	84/131 (64.1)	81/224 (36.2)
R28	Estimated legal prognosis		
	Favorable	18/110 (16.4)	53/200 (26.5)
	Sufficient	16/110 (14.5)	62/200 (31)
	Doubtful	27/110 (24.5)	35/200 (17.5)
	Unfavorable	49/110 (44.5)	50/200 (25)

SD, standard deviation; PANSS, positive and negative syndrome scale.

such as CI see **Supplementary Materials**). With a balanced accuracy of 77% naïve Bayes was identified as the best performing algorithm.

The 10 most indicative variables (code, description, and distribution) identified through chi square testing and subsequently used for model building can be withdrawn from **Table 3**.

The final naïve Bayes model using these variables applied to the validation subset (30% of the total data set) yielded a balanced accuracy of 73.28% and an AUC of 0.8468 (see **Table 4**). This model had a sensitivity of 72.87%, reflecting its ability to correctly classify the actual cases "not having experienced coercion," and a slightly higher specificity of 73.68%, indicating its ability to correctly identify those having "experienced coercion."

Testing for multicollinearity showed no dependencies between the variables (detailed results see **Supplementary Materials**). The importance of each variable in the naïve Bayes model can be seen in **Figure 2**. Threat of violence and actual violence were identified as most indicative factors for coercion. Past experiences with coercion was the 3rd most indicative factor. The PANSS scales at admission poor impulse control and uncooperativeness leading to a higher total PANSS score were also identified as influential factors for the model as well as experiences with haloperidol during the current hospitalization. The olanzapine equivalent dose at discharge, the PANSS scale hostility at admission and the estimated legal prognosis of the patient (evaluated by a board of forensic psychiatrists before discharge) were least important for the final model.

TABLE 4 | Final naïve Bayes model performance measures.

Performance measures	% (95% CI)
Balanced accuracy	73.28 (0.8272–0.5888)
AUC	0.8468 (0.9573–0.7363)
Sensitivity	72.87 (88.13–50.44)
Specificity	73.68 (88.21–52.26)
PPV	71.82 (87.33–49.57)
NPV	74.68 (88.96–53.12)

AUC, area under the curve (level of discrimination); PPV, positive predictive value; NPV, negative predictive value; CI, confidence interval.

DISCUSSION

Machine learning was used to identify patients who experienced direct coercive measures (seclusion, restraint, involuntary medication) in a set of 358 offender patients with a schizophrenia spectrum disorder during forensic psychiatric inpatient treatment. The best identifiers out of a set of 569 potential variables were (in order of statistical significance): threat of violence and actual violence toward others during inpatient treatment, direct coercive measures in the past, poor impulse control and uncooperativeness at admission, the prescription of haloperidol during inpatient treatment, the total PANSS-score at admission, the daily cumulative olanzapine equivalent antipsychotic dosage at discharge, hostility at admission, and the legal prognosis as estimated by a team of forensic psychiatrists upon discharge based on all available information in a patient's file. Based on these variables the model was able to predict the occurrence of coercion or absence of coercion in over 70% of cases, which, however, also means it was unable to do so in almost 30% of cases as an important limitation requiring further research in order to avoid severe consequences in clinical practice. Furthermore, due to the retrospective nature of the present study, future research should focus on those parameters indicating a high risk of coercion before its occurrence, as only these parameters may become of clinical value in preventing coercion. As detailed in **Figure 2** in the *Results*, the most indicative parameters for coercion are also those becoming observable prior to the occurrence of coercion in the timeline of events. Despite all limitations, model performance measures indicated similar precision as was attained in the only two other studies (to our knowledge) also exploring direct coercive measures with machine learning (see **Table 5**) (15, 30), which seems satisfactory for the purpose of identifying patients vulnerable for direct coercion in order to provide for more timely, targeted, and effective preventive

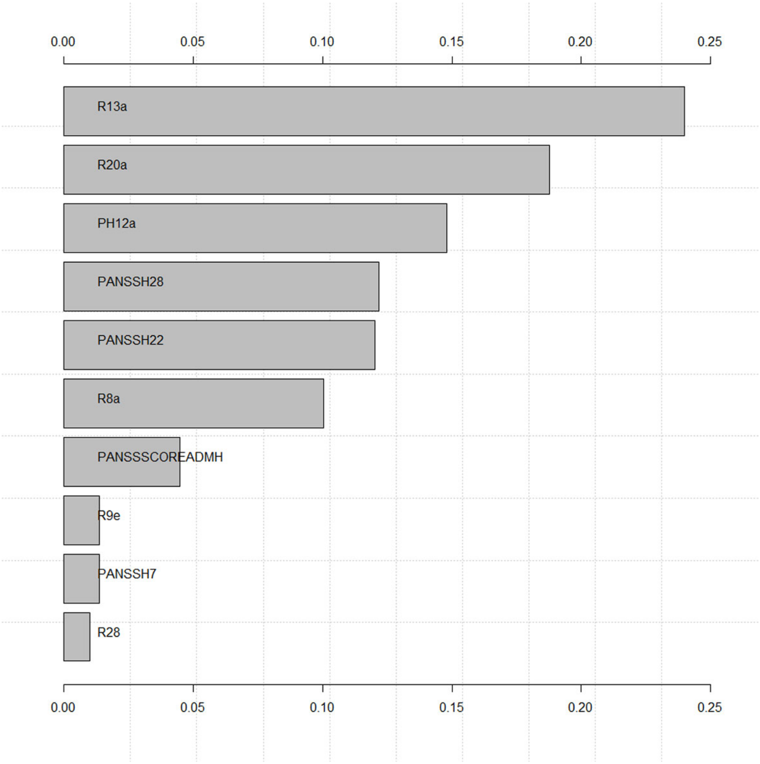

FIGURE 2 | Variable importance of final model. Variable descriptions are presented in **Table 3**.

TABLE 5 | Comparison of this and prior studies on coercive measures employing machine learning.

	(30)	(15)	Current study
Topic of study	Predictors for direct coercive measures in patients with all diagnoses in general psychiatry	Predictors for mechanical restraint in patients with all diagnoses in general psychiatry	Predictors for direct coercive measures in patients with schizophrenia in forensic psychiatry
Sample studied	Patients with coercion: 170	Patients with mechanical restraint: 5050	Patients with coercion: 131
Data collection	Retrospective file content analysis	Retrospective health record and registry content analysis	Retrospective file content analysis
Number of potential predictors explored	Not specified	86	569
Similar predictor variables at statistical significance	Threat of violence as reason for involuntary admission[1], prior involuntary admission to treatment, antipsychotic medication	Threat of violence measured with the Broset violence checklist, involuntary admission to treatment, threatening/abnormal behavior, sparse/non-coherent/non-informative verbal response	Threat of violence, coercive measures in prior treatment(s), haloperidol prescribed, daily olanzapine equivalent prescribed upon discharge, poor impulse control, hostility and uncooperativeness at admission, total PANSS-score at admission
Model accuracy (balanced)	66.5–78.5%	Not specified	73.3%
ROC AUC	0.73–0.75	0.87	0.8468
Sensitivity	60–69%	56%	72.87%
Specificity	78–83%	94%	73.68%

ROC AUC, receiver operating characteristic curve area under the curve method, a measure for the goodness of fit of a model (67); PANSS, Positive and Negative Symptom Scale.
[1]Authors see a limitation in their measuring threat of violence only in terms of reason for involuntary admission.

measures. However, some research proposes the inclusion of so-called predictor variables for coercion not related to patients, but to procedural (30, 68), architectural (69), and care team (70, 71) related factors to achieve even higher predictive power and goodness of fit.

Adding credibility to findings of the present study, the most frequently identified parameters correlating with coercion in prior research were confirmed, including (threat of) violence (9, 18, 20, 24, 25, 36–40) and prior coercive measures (15, 17, 19, 22, 27, 30, 34, 35). Similarly, it may seem trivial that threat of violence, actual violence, the use of direct coercive measures, and an unfavorable legal prognosis upon discharge are correlated. Yet this also increases credibility of the findings presented here. New factors identified in the current study, seem to be hidden in broader categories in the only prior studies also exploring direct coercive measures with machine learning (**Figure 2**) (15, 30). This means, the present study adds important detail to current knowledge about factors correlating with direct coercion, for example, by identifying a specific antipsychotic and cumulated dosing in terms of daily olanzapine equivalent prescribed (instead of just antipsychotic medication) or specific patient behavior measures (poor impulse control, uncooperativeness, hostility, and total PANSS scores at admission instead of "abnormal behavior" in general). Most likely, the identification of this level of detail in variables correlating with coercion at similar accuracy and AUC as in prior research on patients with all diagnoses in general psychiatry (30) was enabled by the exploration of a larger set of variables in a therapeutic setting harboring patients at particular risk for coercive measures (3). However, it is important to note, the current study was conducted without external validation (64). Again, before any clinical decisions are to be based on the results presented here, future research needs to validate the identified model with a focus on variables indicating increased risk for coercion prior to its occurrence in other clinical populations. These populations should have no overlap with the one explored here and perhaps be less prone to the use of coercion and ideally be in different cultural and legal environments. Should factors occurring prior to coercion identified in the present study be confirmed, this would allow psychiatrists to identify patients at increased risk for experiencing coercion early on (at admission) and allocate resources (including measures targeting different key components to reduce coercion in high risk populations as identified by (72): leadership, training, post-seclusion and/or restraint review, patient involvement, prevention tools, and changes in the therapeutic environment) accordingly throughout inpatient treatment in aiming to reduce direct coercion with increased efficacy and at lower costs. This would not only reduce economic burdens to treatment facilities, but also emotional strain on patients and care teams. While sensitivity for the identification of patients at risk for experiencing coercion is substantial, clinicians should keep in mind that specificity is not 100%, so that the model (should it be confirmed in other populations of patients with schizophrenia) cannot identify all patients at risk. Additional clinical evaluations and improvement of model sensitivity and specificity in future research are needed in addition to a general discussion in the field on what margins of error would be considered to be ethically acceptable.

Somewhat resolving inconsistent results of prior studies, gender was not identified in the current study, which may however also be due to the small number of female patients in the sample studied here or in prior research. In this context it is interesting to note, that research exploring predictors for mechanical restraint in 5050 patients (31% female) in Denmark also could not identify gender as a significant predictor (15). On the topic of antipsychotics as a predictor variable, it should be noted that haloperidol is the standard antipsychotic used for involuntary medication and sedation in psychiatric emergency situations with acute threats of violence in Switzerland. The use of high cumulative antipsychotic dosages above the recommended maximum in the treatment of violent offender patients with schizophrenia has been noted elsewhere (73) and clinicians should critically review its usefulness. At the same time, more severe psychopathology in such patients, a predictor for coercion of itself in this and prior studies (15), may require higher antipsychotic dosing (73).

In addition, future research should address those limitations inherent to retrospective file analysis, including the use of a PANSS-adopted scale for content analysis of psychopathological data, which in some cases was recorded before the publication of that instrument. It should also take caution of selection effects due to data for this study stemming from only one forensic psychiatric institution in Switzerland (monocentric study) and a relevant subgroup of Swiss offender patients being unable to receive treatment in any forensic psychiatric facility due to their relative scarcity (74). Hence, future research should critically review results in different institutions and settings internationally. Similarly, it would be interesting to explore indirect coercive measures, which may be a substitute for direct coercive measures, just as seclusion, restraint, and involuntary medication seem to be substitutes for each other depending on legislation and cultural aspects (23, 63).

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation, to any qualified researcher.

ETHICS STATEMENT

The study was reviewed and approved by the Cantonal Ethics committee of Zurich, Switzerland (Ref.-No. KEK-ZH-NR 2014-0480).

AUTHOR CONTRIBUTIONS

MG, JK, and SL designed the study and protocol. The survey of the data *via* questionnaire was preformed independently by both JK and SL. All statistical analyses were carried out by JK. The first draft of the manuscript was done by MG and JK. SL and MG edited multiple drafts and supervised the statistical analyses.

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyt.2020.00415/full#supplementary-material

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The Accessibility of Opioid Agonist Treatment and Its Forced Discontinuation in Swiss Prisons—Attitudes, Perceptions and Experiences of Defense Lawyers in Dealing With Detained Persons Using Opioids

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Background: Opioid agonist treatment (OAT) is an important pillar in the treatment of individuals using opioids and its continuation during imprisonment is recommended. Despite this knowledge access to and continuation of OAT is still limited in many countries. The forced discontinuation during pre-trial detention can cause severe withdrawal symptoms, which in turn may significantly impair the defendant's ability to exercise granted procedural participation rights. Furthermore, it can be argued that forced discontinuation of a desired treatment represents a form of a compulsory intervention.

Aims: The present study was developed against the backdrop of a recent ruling by the European Court of Human Rights (Wenner vs. Germany). It intended to examine how defense lawyers dealing with detained persons using opioids view and assess the accessibility of OAT in pre-trial detention as well as during imprisonment in different parts of Switzerland.

Methods: Using a qualitative approach, we interviewed 11 defense lawyers from three different cantons of Switzerland with multiple years of experience in providing legal representation to more than 220 defendants using heroin. The interviews were analyzed with QSR NVIVO 11 for Windows. A qualitative content analysis approach was used to evaluate findings.

Results: Defenders who had been exposed to the opioid crisis during the course of their legal career had adopted a positive attitude towards OAT and associated it with a stabilizing influence on their clients, an improvement in criminal prognosis, and a reduction in recidivism. They were generally of the opinion that access to OAT had improved, however identified a considerable variance in different penitentiaries, which were mediated by attitudes of staff and authorities. Based on the assessments of the defense lawyers, it can be estimated that the initiation of OAT especially during pre-trial detention is challenging. The predominant aim of OAT in a variety of Swiss prisons still seems to focus on a discontinuation, mediated by a forced reduction of medication. Some of the interventions reported are not in line with the principle of equivalence and strongly contrast the recommendations of the Council of Europe.

Keywords: opioid agonist maintenance treatment, prison, qualitative research, defense attorneys, forced withdrawal

INTRODUCTION

Modern opioid agonist treatment (OAT) with methadone, buprenorphine or other prescribed opioids such as morphine is an important strategy in the treatment of patients with an opioid use disorder (1–4). This form of therapy is associated with an improvement in the individual's health and also leads, among other things, to a reduction in the incidence of HIV and drug-related crime (5–9). Because of these positive effects, methadone and buprenorphine were included in the World Health Organization (WHO) model list of essential medicines almost 15 years ago and have remained on it ever since (10, 11). OAT is also an important pillar in the treatment of opioid addiction in jails and prisons, and various professional medical associations recommend the continuation of therapy during imprisonment (12–14). In this context, it should be emphasized that the overdose-related mortality rate of people with heroin addiction is particularly high after withdrawal under detention conditions and following release without established aftercare (15–17). Despite this knowledge, access to OAT is still limited in many countries, especially for detained persons (18, 19). For example, in September 2016, the European Court of Human Rights (ECtHR) found Germany in breach of Article 3 of the European Convention of Human Rights in denying an inmate access to OAT, even though the applicant had expressed a clear wish to continue with the therapy he had started before he was sentenced to prison. More specifically, the court criticized that authorities had made that decision without having consulted an independent medical expert and without being able to prove the superiority of another form of treatment. This discontinuation of OAT thus amounted to inhuman treatment according to the ruling of the ECtHR (European Court of Human Rights, Wenner v. Germany—62303/13; Judgment of 1 September 2016).

From a medico-legal perspective, the forced discontinuation of OAT during pre-trial detention can cause severe withdrawal symptoms, which in turn may significantly impair the defendant's ability to exercise granted procedural participation rights.

In medico-ethical terms, it can be argued that forced terminations and/or terminations effected against the patient's will of a desired methadone maintenance treatment represent a form of a compulsory intervention (20–22).

Switzerland in particular adopted early on a harm-reduction approach that included low-threshold OAT accessibility, an approach that is currently considered “an ethically legitimate social strategy” (23). Today there are an estimated 30,000 persons or less using heroin in Switzerland, of whom the majority have had OAT on any given day (24). Furthermore, there is even one prison offering not just OAT but also heroin-assisted treatment, which is available to patients who do not respond adequately to methadone and/or buprenorphine and who have been highly dependent for several years (25).

Despite this progress, it is also known, however, that the group of patients with opioid dependence are among those who are particularly stigmatized in a prison setting, and that treatment of substance use is perceived as particularly complicated by prison supervisory staff (26, 27). There is also anecdotal evidence that individual positive or negative attitudes towards the effectiveness of OAT among Swiss prison staff influence its “real life” availability to detained persons, even if access is regulated by high-level prison authorities.

The present study, which was developed in collaboration with the Law Institute of the University of Berne against the backdrop of the ECtHR's ruling, was intended to examine the questions of how defense lawyers representing detained persons using opioids, perceive and experience the work with their clients and how they view and assess the accessibility of OAT in pre-trial detention as well as during imprisonment. This approach was chosen over a written survey of prison authorities in order to reduce the likelihood of socially desirable responses. The aim was therefore not to get a quantitative impression of the quantities and frequencies of a phenomenon such as withholding OAT, or to pillory single detention facilities, but to depict the personal experiences of defense lawyers in dealing with a clientele using opioids. It is precisely the depiction of personal experiences and attitudes that make it easier to understand whether or not there are problems in this context when regarded from a legal perspective, what kind of difficulties these are, and whether they have any wishes for physicians (or any other group of people) (28). The knowledge of the position of the ECtHR and the attitudes of Swiss lawyers can, in the view of the authors, be used for purposes of comparison in other member states of the Council of Europe and thus open up interesting perspectives for an international readership.

METHODS

Study Design and Reporting

This study was designed with an exploratory qualitative approach and is reported according to the consolidated criteria for reporting qualitative research (COREQ) guidelines (29).

Sampling Procedure

A mixed purposive and snowball sampling procedure was used for participant selection. We focused specifically on individuals who appeared to be able to provide rich data of the phenomenon of interest, that is, having current personal experience with individuals using substances in criminal justice proceedings. To achieve greater variation of themes and motives, we recruited subjects from three different German-speaking cantons of Switzerland. Furthermore, the sample incorporated diversity with regards to: (a) work experience, (b) legal focus, (c) teaching experience (d), gender and (e) age. The exclusion criterion was unwillingness to give written informed consent.

The research team pursued two strategies to contact potential participants: a.) an opt-in letter (374 words) was sent to certified defense lawyers in the cantons of Berne and Zurich, inviting them to participate. Following a time period of 7–8 days all candidates were then approached by a team member *via* telephone, providing them with more details regarding the research and answering their questions, and b.) individuals who appeared to be especially information-rich were additionally contacted by e-mail or phone and asked to participate; these individuals were previously identified by legal scholars and a high court judge from the cantons of Lucerne and Berne. The latter approach was undertaken to broaden the spectrum and to reach saturation. Saturation is commonly defined as the point when no new themes arise. The subjects provided additional basic biographical data.

Data Collection and Interview

To ascertain participants' perceptions and experiences in relation to: (1) the legal representation of a clientele using substances, (2) the peculiarities of OAT delivered in pre-trial detention and during the serving of sentences and therapeutic measures, and (3) the further course of their clients' lives after release from prison, we conducted single, semi-structured, in-depth interviews lasting between 60 and 90 min. We used a self-developed and flexible interview guide, which can be found in the appendix. Two female researchers (EA and AB) conducted the interviews. EA was at the time a Master's student at the faculty of law preparing a thesis under the supervision of ML, a forensic psychiatrist and faculty member of the medical school. AB, who was an attending physician at the Psychiatric University Hospital, Zurich with experience in the provision of OAT as well as in conducting qualitative interviews, trained EA and supervised the initial interviews. The research team itself had gathered previous experience employing qualitative research methodology at the intersection of law and medicine. Results have been reported elsewhere (30, 31).

Before the interviews, participants had an understanding that EA had a legal background and that the research represented a collaboration between the Institute for Penal Law and Criminology, the Institute for Forensic Medicine and psychiatric institutions and that the research would address defense lawyers' experiences with clients suffering from opioid dependence.

All interviews were conducted in Swiss or Standard German. Open-ended questions and non-leading probes were used to encourage participants to speak freely and to elaborate on their statements. Paraphrasing and summarizing main points during the interviews helped minimize misunderstandings and clarify ambiguous statements. Interviews were—with the exception of the initial interview—conducted on a one-to-one basis and were digitally recorded. Field notes were taken after the interview

By grounding the questions in participants' practice experiences, and by reformulating the questions, we sought to avoid generalized responses. The location of the interview was chosen by the participants. This was done to create an atmosphere which allowed for eliciting more "private" opinions and experiences. All interviews were carried out at the participants' workplace. There were no repeat interviews.

Data Analysis

Interviews were digitally recorded using Olympus DS-7000 and then transcribed verbatim into Standard German. Whereas Swiss German is commonly only spoken, Standard German is traditionally used in writing and transcription in Switzerland, which is why all interviews were written down in Standard German using a word processor (Microsoft Word). After removing identifying information, each transcript was assigned a code number. The transcripts were not returned to the participants.

Qualitative analysis of the interview data was done independently, initially by AE, and subsequently for the purpose of this publication by AB and ML. AB and ML analyzed the material blinded as to participant identity, then reviewed the initial categories and themes identified by AE. A comparison thematic approach, identifying common and new themes related to the research aims was used. For this research, the interviews were analyzed with QSR NVIVO 11 for Windows, a qualitative data analysis software (QDAS) (32). This software was used to organize the semi-structured interviews, to set up case nodes, to code emerging themes and to visualize the data. Coding centered on identifying common and unique themes related to the research aims, as well as omissions within the interview transcripts.

The coding process ensured a systematic, comprehensive and detailed reading of each interview transcript. First, the coders familiarized themselves with the transcripts in order to identify the different subjects of interest. After several interviews had been coded, the categories for the study were redefined, reviewed and revised in a consensual manner at meetings between AB and ML. When there was disagreement regarding the coded material, ML applied the final code. As a result of the coding process and for the purpose of this paper, four main categories were identified and selected: a) personal stance on OAT, b) access to OAT, c) course of OAT, and d) difficulties and room for improvement. An overview of the categories is shown in **Figure 1**.

To illustrate the categories and for reporting purposes, examples of coded quotations were chosen by AE and ML and translated from German into English by ML. Google Translate as well as Deepl were used to support and simplify this translation process. Quotations were then improved by a bilingual German/English speaker (ML) and edited by an English native speaker (Heather Murray) to ensure readability for an international audience.

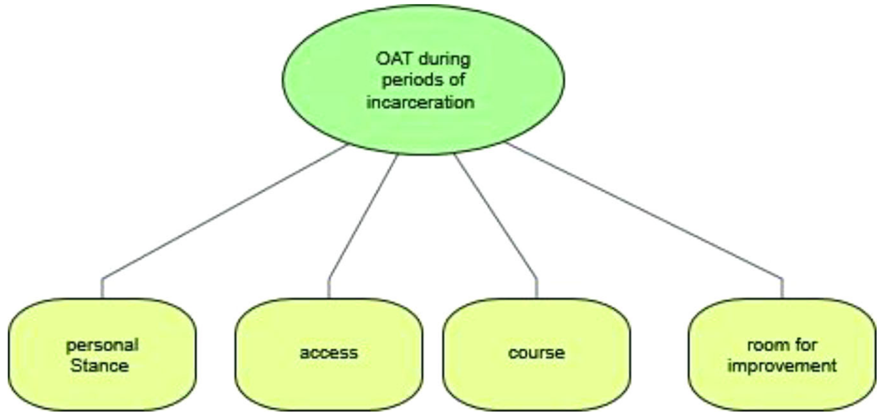

FIGURE 1 | Main categories of lawyers' experience with OAT.

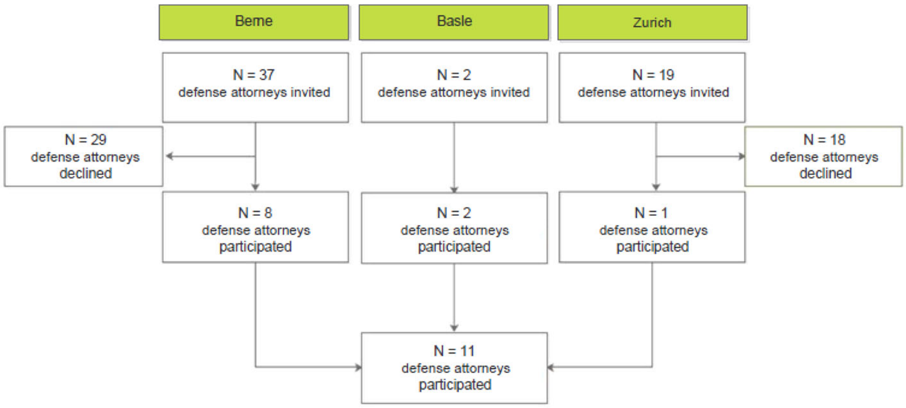

FIGURE 2 | Flow diagram of the study recruitment procedure.

The quantitative sociodemographic data were evaluated using SPSS version 24.

RESULTS

Sample Descriptions

During this study the research team established contact (face to face, telephone or e-mail correspondence) with 58 potential participants. Of those, 47 declined to participate. Barriers to participation included for most lack of experience with defendants using substances, followed by lack of time and lack of interest in the research topic. One of the defense attorneys explained his non-participation in writing (lack of experience), but emphasized the importance of such research projects.

In total, 11 subjects provided their written, informed consent. All completed the interview. None of the participants withdrew their consent at a later time. A detailed flowchart of the recruitment process can be found in **Figure 2**. The sample (n = 11) was composed of a higher percentage of male defense attorneys (81%) than of females (18.2%). The mean age of the participants was 45 years (± 9 years) with an average of 16 years (± 9 years) years passing since taking the bar examination. All had experience in criminal law; additionally, 54.5% had experience in civil law and 9.1% in commercial criminal law (**Table 1**).

Over the course of their career, about half of the defense attorneys interviewed had personally represented more than 20 clients using opioids. Just over a quarter had represented 30 or more such individuals, while a fifth had represented fewer than five clients with such a disorder (**Figure 3**).

Personal Stance Towards Opioid Agonist Therapy During Times of Detention

One of the first themes to arise was the value that participants accorded to OAT for their legal practice, specifically when dealing with clients using opioids during the early stages of

TABLE 1 | Baseline demographics of participants.

Sociodemographic variables		N (%)	Mean (SD)
Age, Years			45 (9)
Sex			
	Male	9 (81.8)	
	Female	2 (18.2)	
Field of legal expertise			
	Criminal law, yes	11 (100)	
	Civil law, yes	6 (54.5)	
	Commercial criminal law, yes	1 (9.1)	
Certified specialist attorney at criminal law (SAV)			
	Yes	4 (36.4)	
	No	7 (63.6)	
Time since accreditation as certified specialist at criminal law (SAV) year			
	2015	3 (27.3)	
	2016	1 (9.1)	
	2017/2018	1 (9.1)	
	Unknown	6 (54.5)	
Time since bar examination, years			16 (9)
Teaching experience			
	Yes	3 (27.3)	
	No	8 (72.7)	
International work experience			
	Yes	2 (18.2)	
	No	9 (81.8)	
Work experience canton Bern			
	Yes	11 (100.0)	
	No	0 (0.0)	
Work experience in cantons other than Bern			
	0	2 (18.2)	
	1–5	5 (45.5)	
	>5	4 (36.4)	
Current personal experience with individuals using substances			
	Yes	11 (100.0)	
	No	0 (0.0)	

legal proceedings, for example, at times of questioning by the state prosecutor (**Figure 4**).

The defense lawyers interviewed in the context of this study had developed—almost without exception—a positive attitude towards OAT over the course of their legal careers. They perceived it as a "necessary" and "good thing". Many substantiated this with their own case experience, in which they had come to the conclusion that it was OAT that made defense possible for clients with heroin addiction in the first place.

> *"I think it is a very important instrument—a very important instrument especially for the people concerned. But of course also for us as defense lawyers, for us as law enforcement authorities, if you want to include the public prosecutor's office or the court, because, um, you can work with them, let's say in a decent, um, relationship—in a more humane relationship with them. Because in the end you have to talk to them, you have to question them, yes, you have to work together and that of course makes it easier if someone does not—I say it in the vernacular—need to go "cold turkey".*
> *And just, yes, somehow the person must be able to live (through that) and must not be oppressed or put under so much stress, because this is bordering on torture, basically, if someone is taken directly in from the streets and then simply put on a cold withdrawal."*
> *Attorney 10*

Multiple times the lawyers also cited a favorable influence on the legal prognosis and recidivism as well as a reduction in procurement crime as reasons for their positive attitudes. A few skeptical comments questioned whether OAT was really a sustainable or long-term solution for those affected.

> *"It is something very important, very central, um, especially in the area of rehabilitation, improvement of legal prognosis, very important, a very central topic. Almost more important than the penal system itself."*
> *Attorney 04*

There were also highly distinct positions with regard to its classification as a "government drug" in the sense that the state steps in and acts as a "drug-dealer". Although some expressed the view that this label was "formally" correct, it was the predominant opinion that it is a "superficial contemplation", a "political statement that has little to do with practice" and "populist nonsense". Instead, OAT was considered a "pragmatic, economic approach" that helped to steer "addiction in an orderly fashion" and that one had a "social responsibility" towards those affected.

> *"Yes, that may be true at first sight, but the question is different, I mean what—what costs the state more, if you don't offer substitution afterwards—and the people just fall back into the procurement crime and then you re-examine it…—uh, again conduct criminal proceedings etc. and so on. Then in the end it costs the state a lot more than if it offers substitution and the chance to get these people off the streets, away from drugs. I think the state gets a lot more out of it, so—it may be true, but it is certainly well invested money and the bottom line is that the state certainly saves a lot of money if it offers this possibility."*
> *Attorney 06*
> *"Substitution—is a controlled release of substance for someone who has an addictive disorder; for me this is nothing other than a treatment (…) analogous to if someone, um, has cancer or, um, I don't know, a*

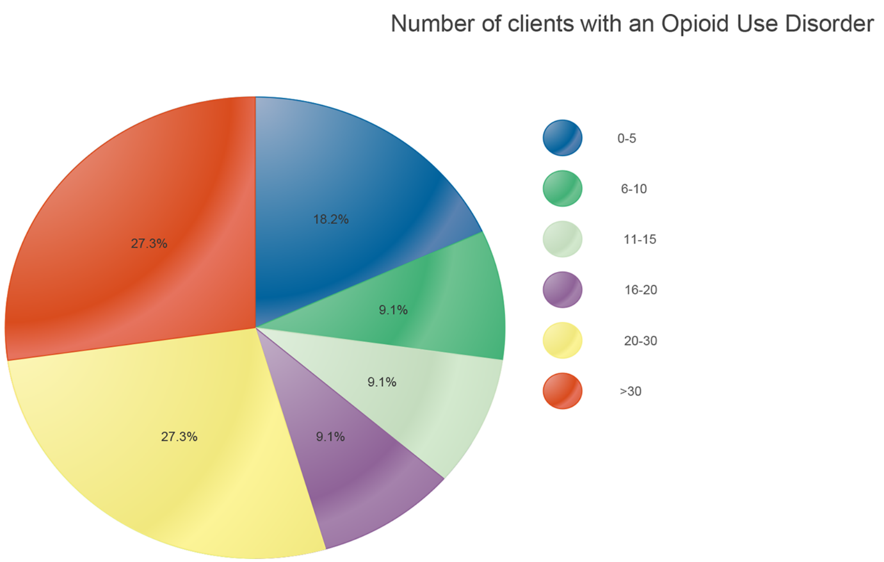

FIGURE 3 | Previous experience with clients using opioids.

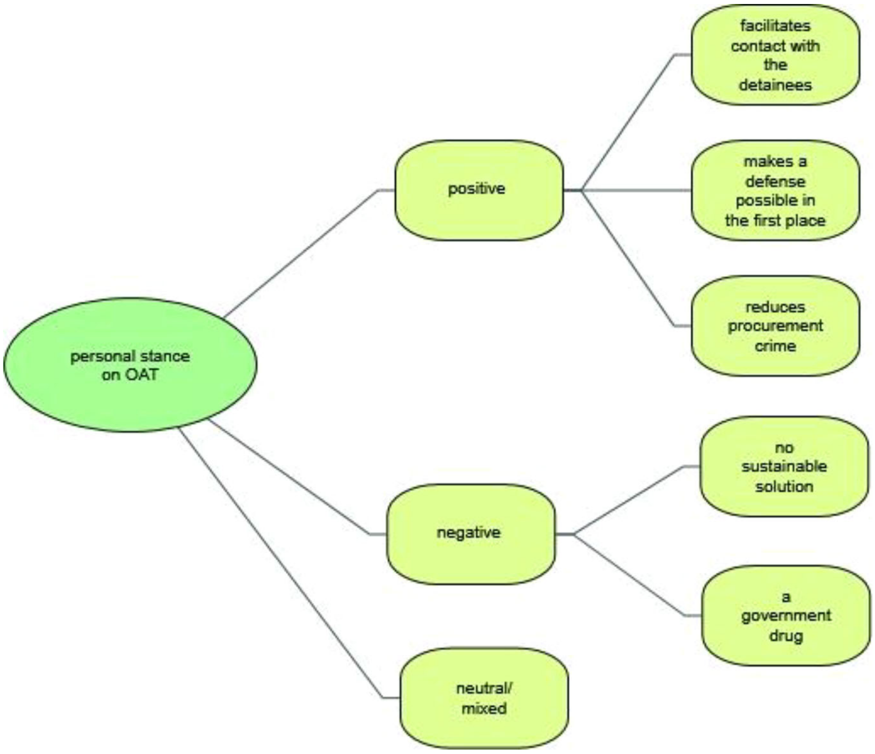

FIGURE 4 | Personal stance towards opioid agonist therapy during times of detention.

> *migraine—a strong migraine, or–or–or, um, strong pain after surgery, then they also, um, get, um—then they also get strong painkillers, which can also be opiates in some circumstances … and nobody would think that they are on drugs at the expense of the state. So I think that's populist nonsense."*
> *Attorney 07*

Access to OAT During Times of Detention

Participants stressed that there is a considerable variation in the accessibility of OAT in the different penitentiaries (**Figure 5**). The interviewees described institutions in which access to OAT was made either easy or challenging at all stages of criminal procedures, i.e. during police custody or in pre-trial detention, when serving custodial sentences in secure prisons or in the context of therapeutic measures.

Factors that influence accessibility are—in the eyes of the interviewees—the directorate of the detention institution, the health service staff, the medical doctor on call, and the public prosecutor's office.

> *"Region B. very difficult. So it also depends insanely on how it is run, how the prison director looks at it, how the health service is organized, how easily the prison doctor is reachable, whether he is interested or not, so it also depends on the people."*
> *Attorney 10*
> *"I've just had a case, maybe half a year ago, there is one, um, a long-time drug addict, who is an addict—he's perhaps fifty today—for 30 years, has also always refused therapy, and he was, um, recently arrested again, and there it was like that, that he demanded the substitute for himself after the arrest, because he did not want a cold withdrawal, and that was denied him in a first phase, however. Um, so the doctors started to give it to him first, and then the public prosecutor intervened—the public prosecutor's office—and then they, um, ver…—didn't give it to him anymore, and then he—he went in—on hunger strike, so he simply didn't accept any more food until they gave it back to him. After three or four days they gave it back to him, maybe faster—I don't know how long it went on, in any case he went on strike and he got the substitute back."*
> *Attorney 05*

Their own influence on prescription practices in individual cases was perceived as extremely low.

> *"But intervening there as a defender—that is … phew … I mean, in the end they have to—I mean that's, prison is prison, that's the way it is, but they can - they can report their concerns or their wishes or their suggestions to the staff and—and that's it. In the end it's a medical problem and it's not up to the lawyer to say, um, it's still, why are you decreasing the medication? (…) At most, I told clients you have to talk to the doctor, you have to tell him that you need more and that's not possible."*
> *Attorney 01*

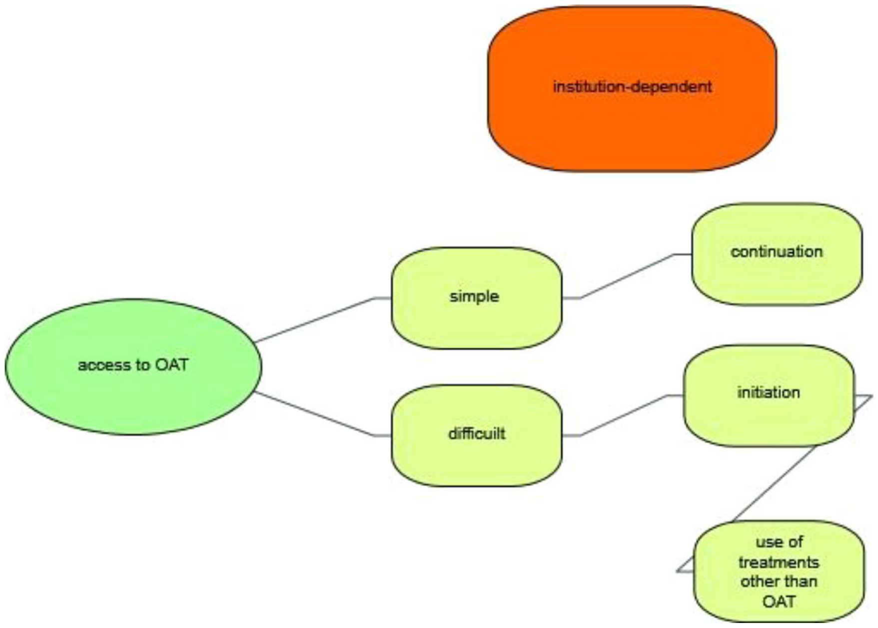

FIGURE 5 | Access to opioid agonist therapy during times of detention.

Eight out of eleven defense attorneys reported that the OAT offered to detained persons was insufficient for example in respect to dosage, particularly under pre-trial detention conditions - a situation that was experienced as particularly difficult. Some defense attorneys had observed that access to medication was restricted specifically to obtain a confession.

> *"Especially the police. Just that they delayed [access] to it, that they also say, yes, I know, you are now in "cold turkey", but now we do this questioning first and then we see if we can organize something, but now we have to talk to you first. And for me this really borders on torture. They don't say: you, if you don't make a statement, then you just don't get anything. They don't say it like that, of course, but they say, look, now we have to do all this first and then we can see if you can get something afterwards, but first we have to make a few phone calls (…) A little in that style, and I have to ask myself what is more urgent now, the health needs of this person, or getting some statements, which will be put in some files and maybe a week later be read by the prosecutor. (…)"*
> *Attorney 10*

However, the situation is perceived as being less acute since the opioid crisis has subsided. The defense attorneys distinguished relatively dichotomously between the continuation of an OAT started outside the prison and the initiation of a new treatment. While the former is possible in most prisons, the latter has become almost impossible.

> *"If they didn't have that before, they had big problems. And uhm, I don't remember when - methadone and heroin maintenance were introduced in prison or in detention. I can't remember when, but since then there were no problems for those who had already been attached to a program before, i.e. outside, they usually had no problems with the continuation of the substitution treatment in detention."*
> *Attorney 08*

In this context, comparisons were also made with prescriptions for other drugs. In particular, the continuation of methylphenidate is perceived as even more difficult as obtaining OAT.

> *"At least I never got a letter from prison, I'm not getting my methadone or … that was somehow never an issue. Then the public health officers were involved and that was always actually—actually no problem. Quite different with other drugs, right so if someone said I need e.g., um, Ritalin! Oh well, because of ADHD—then it was always a "shit pile". (The prison doctor said): Ritalin, uh-uh no and all that! No, you don't need that and so on. Do you have a prescription from the doctor who's treating you and so on? And then the client had to call his family and when he finally had it, then the doctor said, no, the last prescription was three years ago. Ritalin is never—it is much more difficult than methadone."*
> *Attorney 06*

In addition, respondents divulged that clients were not treated with OAT after arrest, despite a reported heroin addiction. Instead, withdrawal symptoms were treated with other substances such as benzodiazepines. Clients had complained to their lawyers about this on several occasions.

> *"It is not a substitution in itself, but it looks rather as if sedatives, sleeping pills are administered, not necessarily methadone. Now also in a concrete case, I have a client in, um, pre-trial detention. She does not get methadone, but Valium®, Stilnox®, sleeping pills. She does get drugs, but she does not get a substitution treatment.*
> *But I know from other clients that I've had before that this is not really a substitution treatment, but more a symptom treatment. Pain—they try to, uh, to suppress pain, and they give sleeping pills, so that they can sleep. Obviously not enough from the client's point of view."*
> *Attorney 07*

Course of OAT During Times of Detention

From the point of view of the lawyers interviewed, most institutions aim to discontinue OAT and to induce long-term abstinence, especially after completion of the main trial (**Figure 6**).

The majority of respondents was in accordance with this therapeutic aim and advised their clients in this direction. This was particularly true when the clients were sentenced to a therapeutic measure according to the Swiss Criminal Code.

> *"That is actually always the aim, unless it is a very long-lasting substance abuse with a long history and one says, yes, it is rather the aim to substitute. But in most cases it is first and foremost the aim to achieve complete abstinence."*
> *Attorney 04*
> *"Actually, I think it's right that you don't just provide a substitute for anyone who—anyone who wants to or is involved in a drug-related criminal case as the accused. I think maybe you should try to find your way back to abstinence with those people—if the addictive behavior is not so deeply ground in—to treat and support them."*
> *Attorney 08*

In order to achieve this aim, OAT is usually tapered out during the prison stay. According to the interviewees' experience, reduction steps are initiated and driven by prison staff or legal authorities.

> *"But of course the authorities or the doctors are pushing a little here and there and they say, so, now let's try again, we'll take a little more away … reduce … I have the feeling that the doctors and authorities are aiming*

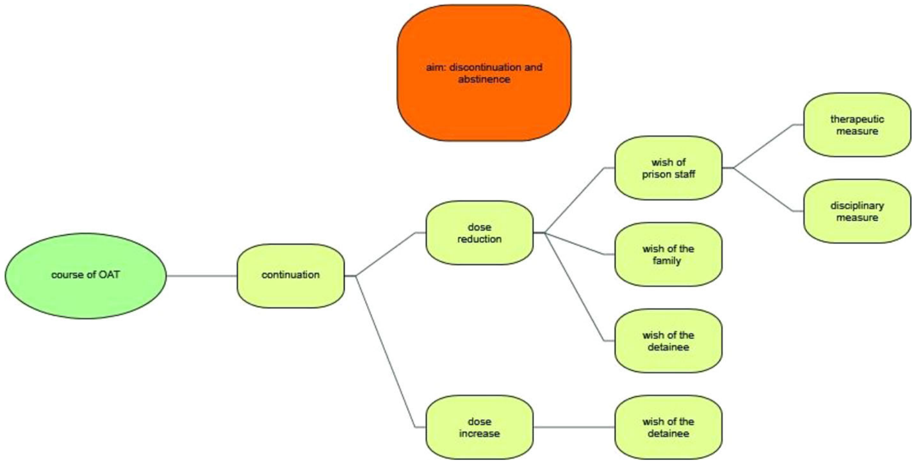

FIGURE 6 | Course of opioid agonist therapy during times of detention.

> *for those dose reductions (…) And I don't think it's a «request show», either."*
> *Attorney 01*

In addition to a dose reduction driven for therapeutic motives, the interviews also showed that dose reduction is used as a disciplinary measure.

> *"For example, as punishment and that's of course a huge problem for these people, um, if they get that as punishment, because then—then they riot even more, they can't understand it at all, they're not rational, or, they don't see a causal relationship."*
> *Attorney 03*

Another major factor in dose reduction is the family's desire to encourage detained family members to discontinue opioid maintenance treatment.

> *"And, so then there are often the parents behind it and they say: Now look, now you are in prison, now you can get away from this [methadone]stuff, so that you're done with it once you get released."*
> *Attorney 01*

Ultimately, the detained persons themselves push ahead with the discontinuation of OAT, when they perceive this as an opportunity to live a life free of any substances.

> *"And the clients say: No, this is the moment now. I have been taken in by the police. This is my chance to stop using and I want to do it cold turkey. Bam. And then I go in and I talk to them and ask what they need and then there's usually a little bit of back and forth. And they ask me for as many cigarette packets as I can bring, or for a couple of kilos of chocolate and then they basically self-medicate, so to speak."*
> *Attorney 10*

On the other hand, an increase in the dosage is always driven by the detained persons. However, considerable resistance by staff is described in this context. In no case did the defenders report that the dose had been increased because, for example, there had been co-consumption.

> *Well, in one case I can remember how they had to go back up after a reduction of methadone, because somehow it just didn't work out at all for the client. But as a rule of thumb, I think that they want to come down with these substances.*
> *Attorney 01*

Room for Improvement

Despite shortcomings, the defense lawyers interviewed were generally of the opinion that there was relatively little need for action with regard to OAT in Switzerland (**Figure 7**). The majority of those interviewed had come to this conclusion because they had received few(er) complaints from their clients and had generally noticed a decline in clients with opioid misuse and/or drug-related crime. In this context, a comparison was also made with neighboring countries and the USA. Some of the Swiss defense lawyers were well informed about the course of the opioid crisis there.

> *"But otherwise I actually have the impression that the level, as it is now in Switzerland, is quite exemplary in comparison with other countries, yes."*
> *Attorney 09*

Against the background of the problems reported with access to OAT under pre-trial conditions, it was not surprising that most defense lawyers mentioned the need for improvement in this area. In this context, it was emphasized that an OAT should be started as quickly and with as low a threshold as possible. Occasionally, the discontinuation and tapering out of OAT

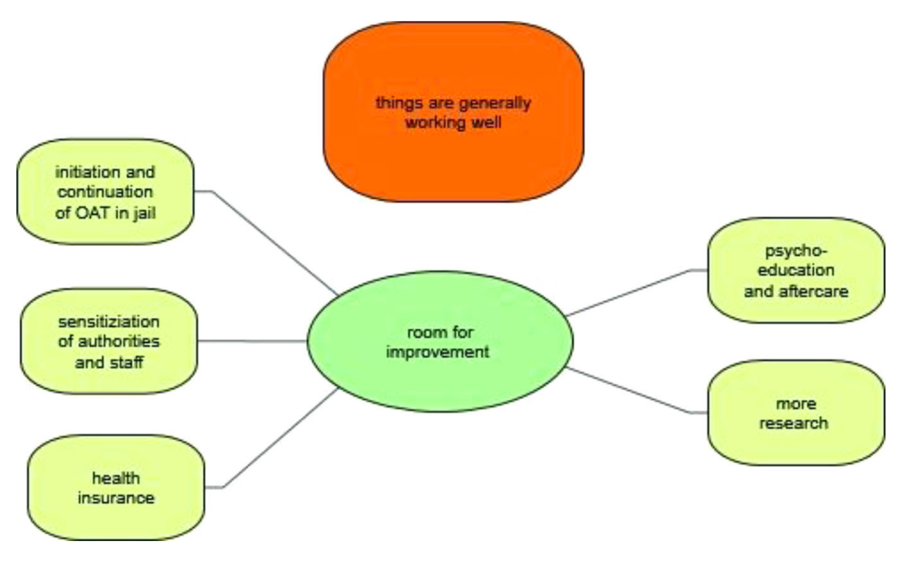

FIGURE 7 | Room for improvement.

during transition from pre-trial to prison was criticized, but this was then relativized again by the stricter regime prevailing in a closed prison setting.

> *"Something that could be improved is that if clients are arrested who are acutely addicted to drugs and want methadone substitution, that this could be introduced more quickly."*
> *Attorney 11*

Another aspect that was highlighted was the need to raise awareness among law enforcement officers for the needs of individuals using heroin. According to the respondents, a strong focus should be placed on the younger generation of police officers who did not experience the opioid crisis in Switzerland in the early 1990s. Here a clear determination of the criminal defense lawyers became noticeable to preserve what had been achieved since then.

> *"But I believe that this is an issue on which we must continue to be sensitive. We also need to sensitize new police officers, people in law enforcement, in particular, and say, be careful, you have to deal with [opioid-using individuals] differently. You have to be careful at the very beginning. There must be procedures in place that run virtually automatically. Even in the first few hours you need someone to ask about people's needs. And this person needs to find out whether the defendant is enrolled in an existing program or whether a new one has to be started."*
> *Attorney 10*

A need for improvement was also advocated in the area of psycho-education and aftercare after release from prison.

> *"If you can arrange for that during the time served, so that they can enter a program immediately after release, then that would be quite meaningful."*
> *Attoney 01*

Those defense lawyers who had clients who had died of an overdose following prison release had begun informing their clients themselves about the loss of tolerance after withdrawal.

> *And that's something I always tell clients when they were abruptly withdrawn in pre-trial detention. You really try to sensitize them for the fact that this is really dangerous when they get out and—and just start again.*
> *Attorney 05*

At the level of society as a whole, it was also desirable that information about the risks of drugs should be provided earlier and more intensively during adolescence. There were also isolated calls for research into better substitution agents, the side effect profile of which should be more favorable. The expectations and wishes towards the development of new drugs for the pharmaceutical treatment of opioid using individuals went beyond what is understood as opioid agonist treatment from a medical perspective.

> *"Yes, there is a need for action in the sense of - so what I would like to see is, to push research harder, to develop pharmaceuticals that have fewer side effects, that do not result in another dependence."*
> *Attorney 09*

In addition, the need to secure access to health insurance services for prisoners was emphasized, as defense lawyers felt this provision was under increasing political scrutiny.

DISCUSSION

In the present qualitative study, we investigated how Swiss defense attorneys view OAT, its accessibility and course in pre-trial detention as well as during imprisonment in different parts of Switzerland.

Our results indicate that defense attorneys working closely with a clientele using opioids view OAT as a "valuable, pragmatic and economic" medical intervention. In their understanding, the treatment allows easier contact with their clients, as well as a more effective defense and goes hand in hand with an improved legal prognosis. This finding is in line with the research on OAT's effectiveness, but contrasts with reports from the United States claiming that "few defense lawyers understand the literature, science and research that supports their arguments" for OAT in the proceedings before drug-courts (33). From their statements in the present study it could be inferred that Swiss defense lawyers had experienced the difficulties of unaccompanied detoxification in the sense of "cold-turkey" first-hand. Negative effects of detoxification are "often associated with a variety of unhealthy behaviors" on re-entering OAT after prison release and have been documented elsewhere (34, 35). Jonsen and Stryker warned that detained persons who ease their withdrawal symptoms without formal support also put themselves at increased risk by using drugs available in prison or buying medications from other inmates (36).

Defense attorneys were generally of the opinion that access to OAT either with methadone or buprenorphine, and in some cases diacetylmorphine, in the Swiss penal system had improved over the years. However, they identified a considerable variance in the accessibility of OAT in different penitentiaries. Unexpectedly this heterogeneity was not limited to police-custody or pre-trial detention, but was also described for institutions carrying out therapeutic measures according to Art. 60 of the Swiss Criminal Code. The aim of this therapeutic measure is to reduce the risk of reoffending by an delinquent dependent on psychotropic substances, whose offence was linked to this dependency, and of whom it can be said that, with treatment, the risk of further such acts in connection with this disorder can be reduced. The treatment is provided in specialized inpatient institutions, or, if necessary, in a psychiatric clinic. The unavailability and/or forced discontinuation of OAT in institutions carrying out Art. 60 measures strikes one as especially problematic, considering that these institutions involve medical professionals in the treatment process, who should know about the efficacy of this form of therapy while the unavailability cannot be proven by our methodical approach, the interviewed individuals perceived the availability of OAT as not sufficient. This should be subject to further research.

This significant heterogeneity in access to OAT has also been reported from 18 other European countries, including Germany (37). In these countries, too, it can be seen that although OAT is nominally accessible, its actual implementation varies between prisons even within the same jurisdiction (38).

Apart from the variance in accessibility, it became apparent that the continuation of an OAT started outside the prison was considered to be significantly easier than the initiation of OAT in pretrial detention or during a prison term. This phenomenon has previously not been reported for Switzerland and, given the highly successful four pillar drug policy implementation (39, 40), was rather surprising. This restriction concerns in particular foreign nationals who are not permanent residents of Switzerland, who are in detention and thus cannot prove that they have taken part in an OAT, for example in their home country. The discussion of this problem must remain open and was not within the scope of the present study. From a scientific point of view, there is strong evidence that prison-initiated methadone maintenance leads to an increased likelihood of entering treatment post-release and is associated with less use of heroin after release, other opiates and injection drugs (41).

A recurring motive in this context was that, instead of opioid-agonist medicine, other drugs were prescribed to cope with symptoms of opioid withdrawal. Benzodiazepines were mentioned here in particular, but also non-benzodiazepine sedatives and hypnotics. Although not in line with current international recommendations for the management of opioid withdrawal symptoms, which suggest tapered doses of opioid agonists (42), this course of action has been reported from correctional institutions elsewhere (34). A major concern regarding benzodiazepine use in individuals using opioids is their potential contribution to an increased opioid-related mortality as well as the development of a subsequent long term misuse of this substance (43). Our study revealed that perceived difficulties with non-opioid agonist medication like benzodiazepines used to mitigate withdrawal symptoms are discussed and debated among defense lawyers and clients, but that these discussions are constrained by the fact that defenders assess their influence on prison staff as being extremely low.

From the point of view of medical ethics and the rule of law, the perception of some defense lawyers that access to opioid-agonist medicine is restricted in order to increase the defendant's willingness to testify is worrying. Specific examples were given in particular in connection with the placement of individuals using opioids in police custody, i.e., in the early stages of criminal proceedings, since police custody is (according to the Swiss code of criminal procedure) limited to 24 h. From a medical perspective, it should not go unmentioned that the discontinuation of methadone represents a considerable psychological burden and has been considered a trigger for suicidal behavior in pre-trial detention (44, 45). Naturally, a qualitative study cannot give an assessment of the frequency of a phenomenon. However, future studies, using a different methodological approach, should review this aspect.

Surprisingly, the defense attorneys were under the impression that authorities in most correctional institutions still aimed in the long run at a discontinuation of opioid-agonist medicine and recommended this over a maintenance approach to the inmates. Interviewees shared this point of view, despite their overall positive stance on OAT—a finding that underlines that the stigma associated with this treatment approach is particularly strong (46, 47) and further education and training of legal actors may be necessary

In view of the positive results that have been published with regard to the introduction of OAT from selected Swiss penal institutions (48, 49), this finding underlines considerable heterogeneity, not just in terms of access, but also in the course of OAT and implies that "access" is not synonymous with "continuation of treatment". The present study cannot answer the question of why some Swiss institutions are apparently enforcing or at least promoting the discontinuation of opioid-agonist medicine. Various studies have shown that the mortality rate of detained persons using opioids immediately after release from closed prison without OAT is increased and remains at an elevated level (17, 50, 51). The elevated risk of fatal overdoses in this population has been linked to the loss of tolerance and is estimated to be three to eight times greater than that during other periods at liberty (52). Similar findings were recognized early on in Switzerland (53) and influenced the development of recommendations by the Swiss Society of Addiction Medicine (SSAM) and the Federal Office of Public Health (FOPH) that list the discontinuation of OAT as only one of four treatment options, explicitly stating: "As OAT is also one of the preventive measures against overdose deaths, it is preferable that the withdrawal of the opioid-agonist medicine should take place *after* discharge" (54, 55). Stöver et al. have commented on barriers to implementation of OAT in prison and identified for example a "poor understanding of opioid dependence as a chronic and recurring disease", a "mistaken belief in the benefits of abstinence for drug users", "socioeconomic reasons", a belief that OAT is not compatible with the concept of prison as a "drug-free zone", a belief that this form of treatment undermines efforts to reduce drug supply and amplifies "diversion" as such (56). It is conceivable that a number of these factors still play a role in the Swiss prison system, although Switzerland played a pioneering role in the implementation of OAT.

The majority of participants described a forced tapered withdrawal from methadone and/or other agonist medicine that was initiated and driven forward by prison staff or legal authorities and identified accelerated reduction leading to suboptimal dosage levels as a major concern for their clients. Some statements suggest that selected penal institutions show very little flexibility in dose adjustments, that clients are not always involved in the decision-making process and that dose reductions are carried out explicitly against the wish of the detained person. This indicates that in some Swiss prisons federal regulations might not be fully implemented, since, for example, the above-mentioned FOPH recommends that: "Every person using opioids should have an individualized treatment that is tailored to their needs and is adapted to the clinical course, personal motivation and legal circumstances." It further advises those involved to "Consider the possibility to revise the decision as to dose change, within the framework of the requirements of the respective institution regarding prescription or clinical evaluation (weekly doctor's visit)."(54).

The importance of OAT for rehabilitation and relapse prevention was emphasized several times, thus becoming a recurrent motive amongst defense lawyers. One of the respondents remarked that OAT is not easily granted in one of the secure prisons carrying out sentences of indefinite incarceration because "the idea of rehabilitation does not play a role there". This illustrates the extent to which staff attitudes also influence access to medically indicated treatment—a result that is consistent with international reports on the accessibility of health services to inmates (57–59).

It should not go unmentioned that, in the opinion of the defense lawyers, some detained persons are using their stay in prisons to end OAT on their own initiative. The detained persons are supported in this by family members. Both aspects were reported in a similar form from other countries (34).

For some of the interventions reported, it must be noted that these are not in line with the principle of equivalence, that is, prisoners shall have access to the health services available in the country without discrimination on the grounds of their legal situation and conflict with legal requirements on a federal as well as, in some cases, on a cantonal level (60). In particular, the above-mentioned forced discontinuation of OAT against the will of the detained persons, but more so the termination of OAT for disciplinary reasons—as described by some defense attorneys—would be unethical from a medical point of view and contrasts starkly with recommendations laid out by the Council of Europe and the perspective of the European Court of Human Rights as reflected for example in its ruling Wenner vs. Germany.

Surprisingly, the defense lawyers saw little need for action with regard to OAT. Comparisons were repeatedly made with the situation in past decades, when accessibility was even more difficult. The defense lawyers had also subjectively noticed a decline in the number of clients suffering from heroin addiction, which is why the strategies applied were assessed positively. In this context it can be pointed out, that current data shows a stable prevalence of problematic heroin use with a sharply decreasing incidence (61, 62). The (subjective) experiences of the attorneys also coincide with reported declines in drug-related crime and suggest that the success of Swiss drug policy is palpable on the practical everyday level of criminal proceedings (63–65). However a decrease in incidence of problematic heroin use can and should not justify poor OAT practices.

Comparisons were also made between the accessibility of opioid-agonist medicine and stimulant medication such as methylphenidate, which was considered even more difficult to obtain. Data on the accessibility of methylphenidate in Swiss prisons does not exist, but a recent study suggests that only a third of inmates who are diagnosed with ADHD receive stimulant treatment (Baggio et al., under review).

The aspects that needed—in the eyes of the interviewees—improvement were not surprising and were largely complementary in nature. Defense lawyers emphasized the necessity for a more low-threshold approach to initiation of OAT during pre-trial detention, were in favor of a smoother transition from pre-trial to prison, demanded a higher degree of sensitization of authorities and staff to the needs of detained persons using opioids and advocated for improvements in their psycho-education and aftercare after release from prison. Regarding the lobbying for improved psycho-education, it may be noted that defense lawyers themselves had begun to advise their clients on drug related health-issues, e.g. by pointing out the dangers of overdoses after release from prison, and were thus, without classifying their strategies as such, educationally active and applying, unbeknownst to themselves, a harm reduction strategy (66). This observation underlines the importance of imparting knowledge to legal professionals (31). Defense attorneys' concerns about detainees' access to medical care are not unfounded. Although the directives on the provision of medical heath care for persons in detention stipulate clearly that medical care has to be accessible at a low-threshold level and should in principle be free of charge, except for some minor copayments, reality deviates from this rule. Access to health services for detainees seems to have become more complicated in recent years and physicians have to deal with additional work, such as applying for reimbursement of costs and negotiating with administrative bodies in prison or social services to provide their patients with adequate health care (67).

Limitations

These results need to be considered within the limitations of the investigation. First, because this is an exploratory qualitative study based on a purpose sampling method, the findings on the personal stance towards OAT cannot be generalized beyond this study sample. However, with regard to the other themes identified, the sample represents a group of defense lawyers with multiple years of experience in providing legal representation to at least 220 defendants using heroin. Second, there are limitations associated with volunteer bias, to which most studies are also susceptible. The main reason for non-participation stated was lack of experience with substance-abusing defendants, followed by lack of time and lack of interest in the research topic. However, other possible reasons could include sensitivity regarding the topic.

Since we only interviewed defense lawyers who had experience with clients using heroin, our findings may not reflect the attitudes of recently graduated lawyers. As exploratory research, this study was not driven by a theoretical framework. Future studies on this subject could, however, use the insights gained to pursue more focused research.

We also recognize that the results may in part be specific to the Swiss legal and penal system. Nevertheless, the literature indicates that similar problems, such as significant heterogeneity in access to OAT, have also been reported from other European countries.

Our findings provide several relevant insights into views held by defense lawyers who gathered vast experience during the height of an opioid crisis and in the following years until today. Most importantly, our findings are based on defense lawyers' own reports identifying a range of experiences. These findings were not limited to predefined experiences, as might occur in a survey-based research. Furthermore, a written survey of prison authorities might have increased the likelihood of socially desirable responses. Such criticism could also have been voiced if the study had focused on the experiences of current or past detained persons using opioids themselves.

Conclusions

This research gives additional insight into the accessibility of OAT and its forced discontinuation in Swiss prisons as experienced by defense lawyers. Defenders who had been exposed to the opioid crisis during the course of their legal career had adopted a positive attitude towards OAT, and associated it with a stabilizing influence on their clients, an improvement in criminal prognosis and a reduction in recidivism. They were generally of the opinion that access to opioid maintenance treatment in the Swiss penal system had improved over the years, however identified a considerable variance in the accessibility and the course of OAT in different penitentiaries, which were mediated by attitudes of staff and authorities. Based on the assessments of the defense lawyers, it can be estimated that the initiation of OAT, especially during times of police-custody and during pre-trial detention is challenging, especially for clients who have not been enrolled in OAT prior to being arrested. Furthermore, the predominant aim of OAT in a variety of Swiss prisons seems, in contrast to the available medical evidence and the harm-reduction drug policy implemented, still to focus on a discontinuation of OAT, mediated by a forced reduction of medication. For some of the interventions reported, it must be noted that these are not in line with the principle of equivalence and conflict on a federal as well as, in some cases, on a cantonal level with legal requirements, while at the same time starkly contrasting with recommendations laid out by professional societies, the Council of Europe and the WHO. The defense lawyers advocated for improvements in the areas of psycho-education and aftercare after release from prison of detained persons using opioids and, in the perceived absence of these, regularly advised their clients on drug related health-issues, e.g. by pointing out the dangers of an overdose after release from prison. It may therefore make sense, alongside other legal professionals such as prosecutors and judges, to specifically train defenders of a clientele with substance use dependence on harm reduction measures and make relevant knowledge easily available to them.

DATA AVAILABILITY STATEMENT

Excerpts of the transcripts relevant to the study are available on substantiated request by the corresponding author.

ETHICS STATEMENT

The research was conducted in accordance with the 1964 Helsinki Declaration. Zurich's cantonal ethics committee filed a letter of non-competence, stating no objection and exempting in from in depth-review according to the framework of the Swiss Federal Act on Research involving Human Beings. All participants were assured confidentiality, and gave their written informed consent to the study and, specifically, to the digital recordings of the interviews.

AUTHOR CONTRIBUTIONS

AB/EA: Data gathering, evaluation of data, writing. RS: Conception, development of the topic guide, revisions. SB/HW/AS: Writing, revisions. AB/ML: Conception, development of topic guide, obtaining ethical approval, evaluation of data, writing manuscript, revisions.

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Opening the Doors of a Substance Use Disorder Ward—Benefits and Challenges From a Consumer Perspective

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Open doors in psychiatry have been a subject of controversy in recent years. While some studies postulate the clinical necessity of closed doors, others challenge the theoretical advantages of this setting, mention numerous drawbacks of closed wards, and focus on the advantages of open-door settings. With regard to patients diagnosed with substance use disorders (SUD), other standards may apply. Very little research has been done on this topic. Some studies adopted a consumer perspective (i.e. asking involved parties about their experience of the door status). To the authors' knowledge, no study has so far addressed the ideal setting for the treatment of SUD. With our data from the opening of a specialized SUD ward, we take one step to closing this knowledge gap. Applying a qualitative design, we asked patients and health care professionals (HCP) to report changes following the opening of the ward. The results are mainly in line with the literature on the general psychiatric population. The newly introduced open-door setting was mostly perceived as positive, but some disadvantages were mentioned (e.g. less protection of patients, less control over who enters/leaves the ward, the theoretically increased risk of patients absconding). Moreover, HCP (but not patients) mentioned potentially increased substance use on the ward as an additional disadvantage that could arise. Opening a previously closed ward was generally perceived as a positive and progressive decision. These findings support the trend towards an overall open-door policy in psychiatry.

Keywords: open doors, locked ward, safety, substance use disorder, qualitative content analysis

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INTRODUCTION

Opinions about closed wards in acute psychiatry vary widely. Advocates highlight the therapeutic necessity and protective atmosphere, opponents point out the ethically questionable nature of this treatment environment. The most frequently mentioned argument for closing psychiatric wards is safety (1, 2). By closing wards, health care professionals (HCP) maintain maximum control, and, therefore, may theoretically prevent patients from absconding and/or harming themselves or others (1, 2). On the other hand, closed doors impose major restrictions on the patients' lives. Balancing patients' safety against their autonomy is an issue that is not easily resolved (3).

This perspective paper provides the authors' view on the question of open versus closed wards, with a focus on wards specializing in the treatment of patients with substance use disorders (SUD). Following an overview of the open-door discussion in general psychiatry, the authors explore if there are specific aspects in wards focusing on SUD. They examine the clinically important but understudied consumer perspective on less restrictive approaches in SUD inpatient treatment. In addition to consulting published literature, the authors share their own data on consumer-perspective experiences following the opening of a specialized SUD ward. Based on this information, they discuss their views on the challenges facing clinicians who wish to facilitate open-door concepts for the treatment of SUD.

The Pros and Cons of Closed Doors in Psychiatry

The hypothesis of increased security on closed wards is supported by individual studies. Nijman et al. (4) found 30% fewer incidents of absconding on acute psychiatric units where the doors were closed for the entire shift compared to other units. Furthermore, patients and HCP report several advantages of locked wards, such as protection from third-party interference (e.g. unwanted visitors, the introduction of substances), more time for HCP to spend with patients and protection of the community (5). On the other hand, patients on locked wards feel less autonomous and are less satisfied with the treatment than patients on open wards (6, 7). They report increased feelings of boredom, depression, anxiety and frustration (2, 3, 8). Moreover, closing wards seems to increase the rate of medication refusal (9), impair therapeutic alliance (10), and also reinforce the stigma surrounding mental illness (5, 11–13).

In addition, some of the advantages postulated for locked doors are not unequivocal (14). Huber et al. (15) found that being treated in a hospital without locked wards was not associated with an increased probability of absconding, suicide, or suicide attempts. On the contrary, the authors reported a reduced risk of attempted suicide and absconding when patients were treated on an open ward. Closed wards therefore do not seem to effectively prevent patients from leaving the ward and may even increase a patient's intention to abscond. Furthermore, it seems that imposing restrictions on patients (i.e. treatment on a closed ward) may increase violent behavior (16, 17). However, further research is needed (3, 18).

The Pros and Cons of Closed Doors in Substance Use Disorder Wards

As to the treatment of patients with SUD, the requirements may be different than for general psychiatric wards (19). Following the American Psychiatric Association guidelines, treatment on closed wards may be advised for some patients with SUD, in particular those with reduced impulse control and/or a co-morbid psychiatric disorder which requires treatment on a closed ward (20). Another rationale may be to stop people from bringing psychoactive substances onto the ward. On the other hand, it is essential that patients with SUD learn how to deal with drug cue-related stimuli in real life. Therefore, it seems important that these issues are addressed during the hospital stay, which may possibly work best on an open ward. In addition, substance use seems to be associated with violent behavior. Elbogen et al. (21), for example, found that a mental illness with a comorbid SUD (but not a mental illness on its own) increased future violent behavior significantly. Few studies have investigated this specific sample of patients with SUD to date. However, the existing studies all favor a voluntary approach and open doors in acute psychiatric treatment of SUD (22, 23).

Consumer Perspectives on Closed Doors in General Psychiatry

Important insights come from studies adopting a "consumer perspective", i.e. asking patients, HCP and/or ward visitors about their perception of being on an open versus a closed ward. This perspective offers novel information about how the door status is perceived by the parties concerned. Middelboe et al. (6) reported that perceived ward atmosphere predicts patients' satisfaction which, in turn, is associated with treatment compliance and outcome variables (24–27).

Advantages of Closed Doors

Patients on general psychiatric wards confirm the frequently stated—though not uncontroversial—advantages of closed doors concerning safety. Patients report an increased sense of safety due to the HCP's greater control over patients and better protection against outside influences (28, 29), as well as less absconding and less aggression towards the general public (30). Patients also report that closed doors enable HCP to have more time for patients and promote secure and efficient care; this in turn makes patients feel safe and calm (30). HCP report comparable advantages of closed wards (8, 28, 30). Staff members mention that less staff and less close observation is needed when doors are closed (8, 28). Moreover, according to HCP, there is more contact with patients and visitors, facilitating monitoring (8, 28). Bowers et al. (30) indicate reduced anxiety and a greater sense of control and confidence reported by HCP. Patients, HCP and visitors share the perception that closing ward doors may reduce absconding (3).

Disadvantages of Closed Doors

Patients' concerns mainly focus on adverse effects on their emotional condition, i.e. feeling confined, dependent and frustrated (29, 30). A non-caring closed-ward environment may foster greater authoritarianism in a cold milieu (30) and patients' passiveness (29). Moreover, patients may need to adapt to other patients' needs (28, 29). Patients also perceive greater power of staff members (29). HCP report similar disadvantages of closed doors (8, 28, 30). In addition, HCP mention a higher workload on closed wards and more effort to explain why the door is locked (8). Patients' feelings of confinement are sometimes confirmed by staff members, e.g. HCP report a more volatile environment (28) and a sense of being locked in/ being unsafe (8).

In conclusion, all consumer parties report possible positive as well as negative aspects of locked doors. Patients, especially, have mixed feelings about the door status (3). Reports are sometimes inconclusive—e.g. HCP attribute a higher or lower workload to closed-door settings. In particular, there is still a considerable knowledge gap concerning consumer perspectives on open vs. locked doors in SUD wards.

CONSUMER PERSPECTIVES ON CLOSED DOORS IN SUBSTANCE USE DISORDER WARDS: CASE STUDY ON THE OPENING OF A SPECIALIZED SUD WARD

To the authors' knowledge, no study to date has addressed a consumer perspective in an SUD sample. Thus, in addition to existing literature, this perspective paper explores the experiences of patients, HCP on an open (formerly closed) SUD ward.

Setting

The ward studied specializes in the treatment of patients with SUD, in particular with an alcohol or drug dependence syndrome. The main focus of the ward lies on qualified detoxification treatment, including diagnosis and treatment of concomitant mental and somatic diseases. The unit had a capacity of 13 inpatients at the time of the investigation. It was opened in July 2011, and data was collected in May 2012. The door was open from both sides during daytime, at nighttime the door was closed.

All patients treated in the open unit at the time of the survey who had previously been hospitalized in the unit at least once prior to the opening were asked to participate in the study (inclusion criteria). One patient refused to participate. In addition, the interdisciplinary HCP team was asked to give written feedback and to attend a moderated focus group to discuss the changes experienced since the opening of the ward. Mixed (oral and written) data collection was chosen to get as many opinions as possible. All staff members had the opportunity to express their opinion regardless of whether they participated in the focus group. The interdisciplinary team consisted of psychiatric nurses, physicians, psychologists and social workers. Oral informed consent was obtained from all participants. The participation of patients and HCP was voluntary, none of the participants was compensated financially or otherwise, and non-participation had no adverse consequences.

Patients who met the inclusion criteria and gave informed consent were invited to the semi-structured interview. During the interview, patients were asked open questions about several topics, e.g. general changes since the opening of the ward, well-being, ward atmosphere, relationship to HCP, feeling of safety, personal responsibility, and freedom. Based on the patient's answers, the interviewer asked follow-up questions to explore more specific aspects. The narrative interviews were held in German. The duration was approximately 30 min per participant.

Our approach was based on an inductive qualitative study design. The interviews and the discussion in the focus group were recorded, transcribed and evaluated anonymously. We analyzed all the data, applying qualitative content analysis as described by Mayring (31). This qualitative approach is a step-by-step formulation of inductive categories as close as possible to the material. Within a feedback loop, those categories are revised, reduced to main categories and checked in respect to their reliability. The results were validated by discussing them with other patients in the same ward at a later time. The main results were presented in a therapeutic group setting asking for critical feedback. All results were confirmed. Some of this work was presented at the "9. Dreiländerkongress Pflege in der Psychiatrie" in Vienna, Austria, and an abstract was published in the accompanying conference proceedings (32). Data and analyses for the current paper were collected as part of clinical quality management during the transition from the closed to the open ward period. Scientific analysis and publication were not planned at that time. However, the local ethics committee gave retrospective approval that the study is in agreement with the ethical guidelines according to the Human Research Act art. 51 par. 2.

Limitations

Data for this investigation were collected as part of clinical quality management. Whereas this, in theory, could have impaired data quality, scientifically appropriate methods were used for data acquisition and analysis. The current study examined a limited patient and HCP sample: only patients who were treated during the time of assessment and who had also been patients previously (while the locked-door policy was in place) were eligible for inclusion, and only HCP from the ward where the open-door policy was implemented could give feedback. The limited sample certainly impairs generalizability of the results. In addition, selection bias arising from choosing a convenience sample cannot be ruled out. The patient sample in particular may have been highly selective, as patients supporting the open-door policy possibly showed more interest in participating in the study. On the other hand, all members of the HCP team gave feedback on their impression of the changes, ensuring a rather complete picture of the study group. Moreover, it is to be kept in mind that qualitative studies commonly have a hypothesis-generating nature and report personal experiences (rather than providing proof). The analyses presented are based on data acquired in 2012 and are relatively old. However, it seems unlikely that the improvements and challenges present during the transition to an open-ward setting have changed relevantly in 2020. Given the scant literature available on the topic, the authors are convinced that the results are still of interest and will be clinically useful for HCP who are in the process of taking on the challenge of opening an SUD specific ward today.

Results

Five patients agreed to provide feedback on their perspective. Relevant demographic characteristics of these participants are shown in **Table 1**.

All 18 staff members stated possible advantages and disadvantages and included daily experiences at the open unit in written feedback. In addition, eight psychiatric nurses as well as a senior physician and a psychologist participated in the group discussion.

Changes following the transition to an open-door treatment setting reported by patients and HCP were categorized using qualitative content analysis and are presented in **Table 2**.

The positive aspects that patients as well as HCP mentioned after the introduction of the open-door policy included the following: there was more time for HCP to address patients' needs and therapeutic contacts, the therapeutic relationship improved, patients received and assumed more personal responsibility, an atmosphere of trust emerged, and well-being increased for patients and HCP. It was also mentioned that the open setting served to de-escalate aggression, and that the new setting was found to be less stigmatizing. HCP reported that there was less clandestine substance use on the ward.

However, patients and HCP also reported some negative aspects, e.g. that some patients felt less protected, that it was more difficult to know who was on the ward and who had left, and that some patients left the ward without previous discussion. HCP, but not patients, reported that substance use on the ward could theoretically increase after the introduction of the open-door setting.

TABLE 2 | Changes after transformation from a closed ward to an open ward as reported by patients and health care personnel, categorized using qualitative content analysis according to Mayring (30).

Category	Quotes
Time	"All in all you notice that the matters have calmed down … It's calmer now … You can notice it with personnel, too… You have more time." (P_2)
Relationship	"Building relationships positive due to less control functions" (TEAM) "It is a cooperative contact [note: with the HCP]…" (P_3)
Personal Responsibility	"As we put more trust in the patients, they assume more responsibility" (TEAM) "It's a goal to achieve more responsibility [note: in the patient]" (P_2)
Well-being	"Just the feeling that you can simply enter … and to know that the door is open … this was a good feeling" (P_4) "For the patient, it's much more pleasant." (P_2)
Treatment	"Now, due to the open environment, you can focus on other important tasks" (TEAM) "Closed wards make me nervous […] It's like in prison" (P_1) "Everything seems less military" (P_2)
Aggression	"In my opinion, the closed environment does indeed promote aggression…"(P_3)
Destigmatization	"When there are visitors, they were shocked … My brother visited with his children, and they asked: what is it, why are the doors locked?" (P_1)
Exchange	"You tend to reflect on what could be good for me … Before, in the closed environment, everyone was just fighting for herself … for their own rights and liberties." (P_5)
Protection	"A few patients need the feeling of safety because of locked doors." (TEAM)
Overview	"Whereabouts of certain patients sometimes unclear" (TEAM)
Risk of absconding	"There are patients who are suddenly leaving and running away." (P_5)
Substance use[1]	"No more substance use in secret" (TEAM)

Sample quotes for the identified categories were translated from German and are cited in the right column. P: quote by one of the interviewed patients; P_number: pseudonym of the cited patient; TEAM: quote by a member of health care personnel (HCP). [1]*Only mentioned by HCP.*

BENEFITS AND CHALLENGES OF OPENING THE DOORS OF AN SUD WARD

In our case study, patients of an inpatient unit specializing in the acute psychiatric treatment of SUD were interviewed about the changes following the opening of a previously closed ward. The HCP team gave written feedback on possible benefits and implications of the opening. In a moderated focus group, changes experienced since the opening of the unit were discussed. The changes reported by patients were very similar to the ones stated by HCP. Both groups reported mostly positive effects of the opening. Reduced protection, impaired overview of the ward, an increased risk of absconding, and potentially increased substance use were identified as possible disadvantages of unlocked doors. Especially the disadvantage of reduced protection has been reported by other research groups who investigated mainly quantitative data (3, 8, 28, 29). Despite some limitations, the findings of our qualitative study seem to be in line with previous research.

Unlocking the doors changed the general attitude of HCP in how they approached their patients, as reported by patients and HCP alike. This was indicated in particular by answers from the categories "time", "personal responsibility" and "treatment". This finding is mostly in accordance with the literature (8, 29). In the study by Muir-Cochrane et al. (3), locked doors were mentioned as a symbol of mistrust, indicating the negative influence of the door status on the HCP-patient relationship. On the other hand, in contrast to recent studies (3, 28, 29), our participants experienced staff having more time for patients during the open compared to the closed ward period. The main reason mentioned for this observation in our sample was having less "control functions" (i.e. opening and closing the doors, explaining why the door is closed) on the open ward. The HCP had a reduced sense of being "the guard with the keys". Another aspect mentioned by other researchers (3, 28) was the difficulty of maintaining an overview on an open ward. Keeping track of the whereabouts of patients may lead to an "anxious vigilance" (3) which represents an additional task and possibly leads to stress. Nonetheless, our HCP experienced having more time after the ward was opened. Haglund et al. (8, 29) discussed the aspect that family members might feel more supported by the protecting environment of a closed unit. This point was not raised by patients and HCP in our case study, but both groups mentioned that family members had the impression

TABLE 1 | Demographic features of patient participants.

	Age range (in years)	Most recent inpatient treatment	Number of inpatient stays (total)
P_1	35–39	2011	2
P_2	40–44	2011	4
P_3	50–54	2011	3
P_4	45–49	2010	2
P_5	35–39	2010	14

To present information on demographic characteristics of the patients without endangering pseudonymization, age is given in 5-year intervals, and the year of the most recent inpatient treatment and total number of inpatient stays are provided. P_number, pseudonym of the cited patient.

that the novel treatment setting was less stigmatizing. This finding is supported by Ashmore (28).

Investigating an SUD sample, illness-specific aspects like substance use were mentioned. Interestingly, a reduction of clandestine substance use on the ward was only stated by HCP. The staff perceived patients being more open about their substance use during the hospital stay. Simpson et al. (33) did not report a consistent relationship between substance use and exit security features, intensity of drug/alcohol monitoring and the locking of the ward door. In another study, our research group found no relevant change of substance use on a specialized SUD and dual-diagnosis ward (not the ward under study here) comparing the time period when the ward was closed to the period when the same ward was open (34). As substance use was screened for by urinalysis and breathalyzer testing in the study mentioned above, there may indeed be no increase in substance use after introduction of an open-door policy. The hypothesis that opening an SUD ward might increase substance use may be unfounded, but the findings still have to be replicated in future research.

Open-door policies have been associated with an improved ward atmosphere (7, 35–37). Patients and HCP in our study reported improved well-being and improved establishment of therapeutic relationships due to decreasing control functions after opening the ward. This corresponds with the literature, as higher general satisfaction with treatment on open units has already been found by Müller et al. (7) and Middelboe et al. (6). In addition, the impression of reduced aggression on open wards was reported in our sample. This is also supported by several studies which investigated various wards and were based on objective measures (6, 30, 38).

Conclusion

The discussion about opening or locking doors in psychiatry is a clinically relevant, but highly controversial topic. Depending on the patient's characteristics (e.g. diagnosis, co-morbid disorders, violent behavior), one of the two treatment settings might be preferred in daily clinical practice. However, the literature about the door status in general psychiatry clearly favors open wards. Less research is available on SUD populations, but this still favors an open-door approach. As to the consumer perspective, the picture is similar for general psychiatry wards (also favoring open wards), but there is little research and the existing literature is partly inconclusive (e.g. lower or higher workload on closed wards?). Our small set of data mainly suggests that these findings may also be valid for the SUD population, but we certainly do not claim generalizability. Further research is recommended. Altogether, strong advantages of open doors seem to outweigh the frequently cited disadvantages. We therefore encourage clinicians to take bold steps towards an overall open-door policy in psychiatry.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Ethikkommission Nordwest- und Zentralschweiz (Hebelstrasse 53, 4056 Basel; www.eknz.ch, tel. 061 268 13 50, fax 061 268 13 51, email: eknz@bs.ch). Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

AUTHOR CONTRIBUTIONS

RS designed the study. RS collected the data. RS analyzed and interpreted the data. RS and CH wrote the initial draft of the paper. JK, JM, MV, GW, MW, and UL revised the manuscript for important intellectual content. RS had full access to all the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis. All authors contributed to the article and approved the submitted version.

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