DESIGN AND IMPLEMENTATION OF REHABILITATION INTERVENTIONS FOR PEOPLE WITH COMPLEX PSYCHOSIS

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DESIGN AND IMPLEMENTATION OF REHABILITATION INTERVENTIONS FOR PEOPLE WITH COMPLEX PSYCHOSIS

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Editorial: Design and Implementation of Rehabilitation Interventions for People With Complex Psychosis

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Editorial on the Research Topic

Design and Implementation of Rehabilitation Interventions for People With Complex Psychosis

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INTRODUCTION

Between one fifth and one quarter of people who become unwell with a psychotic disorder will develop particularly complex problems (1). These include severe, treatment-resistant symptoms and cognitive impairments that affect motivation, organizational, and social skills. Co-existing mental, neurodevelopmental, and physical health conditions can often complicate recovery further, and up to three quarters have been found to be vulnerable to self-neglect and/or exploitation by others (2). Despite their high levels of need, this group has been missing from recent mental health policy internationally, resulting in inadequate treatment and, worryingly, increasing levels of institutionalization (3). The publication in 2020 of the first National Institute for Health and Care Excellence (NICE) Guideline on the mental health rehabilitation of adults with complex psychosis (4) is therefore a very welcome and important milestone, but there is an ongoing, urgent need for research to identify effective interventions for this group. In this Research Topic we aimed to collate relevant work that can help to address this evidence gap.

EFFECTIVENESS OF MENTAL HEALTH REHABILITATION

Recent decades have seen a radical transformation in how care is provided to people with severe and enduring mental health problems in many countries, with the closure of long term asylums and the development of community based services. As Dalton-Locke et al. show in their review, deinstitutionalization was largely a success and contemporary rehabilitation, comprising specialist inpatient services and supported accommodation, continue to deliver good outcomes for service users with the most complex problems, including reduced rehospitalization. However, poor quality care and institutional practices are still found in some settings and the expected progressive step-down to independent accommodation often takes considerably longer than anticipated. An alternative approach, "housing first," developed in the US and Canada offers permanent tenancies to homeless people with mental health problems, with visiting support to assist them to maintain their tenancy. Further studies of the model focusing on those with complex psychosis are warranted.

A key objective of rehabilitation is to improve social participation (including employment). There are several well-known approaches including the Boston University Approach to Psychiatric

Rehabilitation (BPR). Sanches et al. provide an interesting report of a randomized controlled trial of rehabilitation delivered by BPR trained therapists compared to an active control condition comprising mental health practitioners also focused on rehabilitation goals but without this training. Both approaches produced similar benefits. Although there are a number of plausible explanations for the lack of difference including employment opportunities in the wider economy, these results suggest that focused rehabilitation efforts are of benefit regardless of whether delivered in a particular model framework.

DELIVERING RECOVERY-BASED REHABILITATION

It is recommended that mental health rehabilitation services should provide a recovery orientated approach because it has been shown to be associated with better outcomes for people with complex psychosis (4). It is therefore very encouraging that researchers are focusing on how to do this. Two systematic scoping reviews highlighted the importance of social and environmental interventions in facilitating personal recovery. Leendertse et al. found that symptoms (affective symptoms and positive and negative symptoms of psychosis) were inversely correlated with personal recovery, while social factors (support, work, housing, and social functioning) were positively associated with it. Jaiswal et al. identified three key elements essential to personal recovery; relationships, meaning, and participation.

However, McPherson et al.'s systematic review evaluating recovery-based practice training programmes for mental health staff identified few relevant studies and little evidence for the effectiveness of the programmes that have been conducted to date. More research is clearly needed to identify how best to support staff in adopting recovery principles and two studies from the Netherlands provide further hope of a breakthrough. Zomer et al. describe the development of the "Active Recovery Triad" (ART) model, a collaborative, recovery orientated approach specifically designed for longer term mental health care settings to bring together mental health staff, service users, and family members to work together to support the individual to identify and work toward their personal recovery goals. van der Meer et al. also highlight the importance of service user involvement in the development of a complex psychosocial intervention to improve personal recovery, adopting an iterative "user centered design." Initial pilot data for the intervention appear promising.

In keeping with the theme of service users having a key role in helping services become more recovery orientated, helpful insights into the experiences of peer support workers who were integrated into a community rehabilitation service in Australia were provided by Wyder et al. through review of their diary entries. They revealed how the peer workers used their own experiences to connect and establish trust with residents and family members and used the opportunity of engaging with residents in everyday activities to discuss informally with them their hopes and future goals. Tensions within the team about the peer workers' role were acknowledged but overall their non-clinical perspective was considered a valuable addition.

FAMILY AND SOCIAL SUPPORTS

Positive relationships with families, friends and others are crucial for the personal recovery of people with complex psychosis. There is robust evidence to support the effectiveness of family psychoeducation in enhancing family relationships (5) but implementation has proved challenging (6, 7). Multi-family models are one of the evidence-based approaches for improving family involvement and although subject to minimal empirical study, psychodynamic versions of multi-family models have been developed widely across Italy and Latin America. In their observational study using registry data, Maone et al. describe weekly psychodynamic multi-family group sessions held in six community mental health centers in Rome, Italy, over more than 4 years. Their data suggest that it is feasible to provide and facilitate well-attended multifamily groups over the long term in an inner-city area, involving about 15% of all service users receiving treatment for severe mental illness.

A related approach, described by Tjaden et al., is that of resource groups that aim to support recovery through developing meaningful partnerships between service users and their support systems, with group meetings held between the service user, their nominated significant others and mental health professionals. Using a longitudinal case study design, the authors studied transcripts and field notes of resource groups held approximately every 3 months in the context of Flexible Assertive Community Treatment (FACT), an intensive form of community case management. Findings suggested that resource groups led to participants relating to each other in new ways and that active involvement and open communication between participants may have altered previously rigid patterns of interactions.

van Bussel et al. also aimed to improve understanding of how relationships may support or hinder recovery. Their meta-analysis examined relationships between different adolescent and adult attachment styles and symptomatic, social and personal recovery in service users with a psychotic disorder. They reported that insecure anxious and avoidant attachment are both associated with less symptomatic recovery (positive and general symptoms), and worse social and personal recovery. Whilst included studies were mostly cross-sectional and of poor quality, these findings, if replicated, may have prognostic implications as well as contributing to better treatments.

INTEGRATING COMPLEX INTERVENTIONS

There is growing evidence for the effectiveness of therapies that focus on functional improvements and, increasingly, this is complemented by practice-based evidence that can inform successful implementation. The case report on integrative cognitive remediation for early psychosis by Vidarsdottir et al. articulates the process of successful implementation, highlighting the core components. Having a strong evidence base for the intervention is obviously a pre-requisite, but time and investment for successful implementation are needed to ensure commitment at all levels of the organization, including the provision of adequate resources, staff training and supervision.

The study by Roeg et al. investigated the feasibility of integrating the evidence-based supported employment model, Individual Placement and Support (IPS) alongside mental health supported accommodation in the Netherlands. The study sites were eight supported housing organizations and the comparison sites were 21 mental health treatment organizations. This qualitative study found support for the feasibility and effectiveness (assessed using employment outcomes) of integrating the IPS model in both supported accommodation services and mental health organizations.

ADDRESSING PHYSICAL INERTIA

No physical health without mental health and no mental health without physical health have become catch phrases to focus attention on the need for holistic recovery goals for people with mental illness. Rees et al. described the development of an intervention, "Action Over Inertia" (AOI), designed to address restricted activity that can be a barrier to optimal recovery for people with severe mental illness. The study was set in three residential rehabilitation facilities. This naturalistic qualitative study explored the perspectives of the participants and facilitators of AOI. The study findings drew attention to the challenges in enacting desired behavioral change for people with mental illness and the need for programs to understand and address specifically their inertia.

Alternative therapies, including mind body exercises (MBEs), have long been thought to be beneficial for general mental and physical well-being. Wei et al. in their systematic review, found modest effects on positive and negative symptoms and on depressive symptoms amongst people with schizophrenia. However, methodological problems limited their conclusions, including the fact that all the studies included compared MBEs to "treatment as usual" leaving it unclear whether the observed benefits are due to the MBE or reflect non-specific aspects of a pleasant activity led by enthusiastic coaches.

CO-OCCURRING SUBSTANCE MISUSE

The challenges of co-occurring psychosis and substance misuse were addressed in two papers. Florentin et al. reported that in Israel, people with psychosis and substance misuse were less likely to receive mental health rehabilitation services and had higher hospitalization rates than those without co-occurring substance abuse. Their data, from 18,684 adults with schizophrenia spectrum disorders, argues for expansion of recovery services to specifically meet the needs of people with complex psychosis and substance misuse. Clausen et al. provide evidence that suggests that Assertive Community Treatment (ACT) may be a good option to achieve this. They showed that clients with and without substance misuse problems who received 2 years of ACT had similar outcomes, with both groups achieving better housing, functioning and decreased anxiety and depression.

MENTAL HEALTH REHABILITATION AND TELEHEALTH

Finally, in the context of the global pandemic, Lynch et al. demonstrated that recovery services could be provided virtually to people with complex psychosis. In a clinic serving New York, 90% of clients accepted telehealth sessions, including group therapies, and were able to maintain their specific treatment plans in virtual format.

CONCLUSION

This Research Topic has highlighted the wide range of contemporary studies aiming to improve outcomes for people with complex psychosis. Whilst this is clearly very encouraging, most studies were in the field of mental health service interventions. We note the paucity of peer-led/co-led interventions for people with complex psychosis, and the lack of biological and pharmacological research targeting this group which also need to be addressed urgently.

AUTHOR CONTRIBUTIONS

HK led the drafting of this editorial. All authors contributed to the editorial and approved the final draft for submission.

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SYSTEMATIC REVIEW
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Effects of Mind–Body Exercises on Schizophrenia: A Systematic Review With Meta-Analysis

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Background: Mind–body exercises (MBEs) have been widely accepted as a complementary therapy for the patients with low exercise tolerance. Currently, the number of experimental studies investigating the effect of MBEs for improving symptoms in people with schizophrenia is increasing. However, results are inconsistent.

Methods: We systematically reviewed and meta-analyzed the effects of mind–body exercises on schizophrenia. Seven electronic databases (Pubmed, Web of Science, PsycINFO, Embase, Cochrane Central Register of Controlled Trials [CENTRAL], CNKI and Wangfang) were screened through October 2019 and risks of bias of included studies were assessed in Review Manager 5.3.

Results: Meta-analysis on 13 studies with 1,159 patients showed moderately significant effects in favor of mind–body exercise intervention to improve positive symptoms (SMD = 0.31; 95% CI 0.01 to 0.60; $p = 0.04$), negative symptoms (SMD = 0.37; 95% CI 0.14 to 0.60; $p = 0.002$), and depression (SMD = 0.88; 95% CI 0.63 to 1.13; $p<0.00001$). Meta-regression analysis revealed that the improvement in positive symptoms was positively associated with the frequency of intervention ($p = 0.04$), while a marginally significant correlation was observed between the improved negative symptoms and duration of each session ($p = 0.06$).

Conclusions: This meta-analysis supports the therapeutic effects of MBEs to aid in the treatment of schizophrenia. Further studies need to incorporate rigorous design and large sample size to identify the optimal type and dose of mind–body exercise to inform clinical practices on MBEs' recommendations for the management of schizophrenia symptoms.

Keywords: schizophrenia, neurological disorder, mind–body exercise, intervention, yoga

INTRODUCTION

Schizophrenia, as one of the chronic and severe mental illness, usually emerges between 16 and 30 years old, with its prevalence ranging from 0.33 to 0.75% globally (1). There are three types of symptoms that may be present in people with schizophrenia, including positive symptoms (delusions and hallucinations), negative symptoms (insufficient motivation, spontaneous reduction of speech, and social withdrawal), and cognitive symptoms (executive dysfunction, inattention, and working memory impairment) (2). These complex symptoms may also lead to a decline in social function and quality of life, a high degree of disability, and concurrent emotional diseases. It has become a public health issue because of its profound impact on family and society (3).

Since its pathology still remains elusive, treatments primarily focus on alleviating symptoms of the disease and include antipsychotic medications, psychosocial counseling, and coordinated specialty care (4). Although antipsychotic drugs can effectively improve certain positive symptoms, their beneficial effects on negative symptoms are limited (3, 5–8), and around 30% of patients are refractory to treatment (9). Moreover, antipsychotic drugs are connected with side effects including hesitation, retention, and transient leukopenia (10, 11). Prolonged use of antipsychotics may exacerbate the progression of cognitive impairment caused by schizophrenia (10, 11) and even lead to more adverse effects, which has been associated with impairments of the endocrine system (weight gain, hyperprolactinemia, and diabetes mellitus), the cardiovascular system (orthostatic hypotension), and the central nervous system (dystonia, akathisia, pseudoparkinsonism, and dyskinesia) (11). Psychosocial counseling and coordinated specialty care are typically adopted as a second line of treatment when antipsychotic medications fail to alleviate symptoms. These methods are expert-based and require a significant amount of time and cost heavily. Thus, researchers have attempted to seek low risk alternative therapies for people with schizophrenia.

Tai Chi, Yoga, and Qigong (including Baduanjin and Wuqinxi) are the three most popular mild to moderate intensity mind–body exercises (MBEs), and they have been increasingly accepted for treating patients with low exercise tolerance (12–18). MBEs are characterized by slow physical movement (stretching and relaxation of skeletal muscles) coordinated with abdominal breathing and meditative stage of mind (19, 20). These unique features have intrigued researchers and clinicians to extensively investigate the therapeutic effects of MBEs on diseases, particularly for those who are diagnosed with mental illnesses like schizophrenia (21). Indeed, the number of studies reporting beneficial effects of MBEs in schizophrenia is growing. However, findings are inconsistent: some studies showed that MBEs could be a useful add-on treatment for schizophrenia (22, 23), while others did not believe MBEs could offer more advantages over regular exercise or treatment as usual (24). Thus, a systematic review is needed to synthesize the existing literature. While there were five reviews on this topic, they focused on either one type of MBE (25), just negative symptoms (26, 27), qualitative synthesis (26) or MBEs-active control comparison (28), or included non-MBE studies (26), which make it difficult to provide an overview of MBE-induced effect on multiple symptoms of schizophrenia. Therefore, a comprehensive review with quantitative synthesis is necessary to systematically investigate the association between MBEs and a wide range of health outcomes in schizophrenia. Findings of this meta-analysis can identify knowledge gaps and provide researchers and clinicians with evidence-based recommendations so as to develop effective MBE treatments for schizophrenia patients.

METHODS

This study followed PRISMA guidelines (29) and Cochrane Collaboration's recommendation (30) for systematic reviews and meta-analyses.

Search Strategies

Five English databases (PubMed, Web of Science, PsycINFO, Embase, Cochrane Central Register of Controlled Trials (CENTRAL)) and two Chinese databases (CNKI, Wangfang) were systematically searched from their inception to October 1st 2019. Literature search was detailed below:(((schizophrenia [Title/Abstract]) OR schizophrenic [Title/Abstract])) AND (((((((((((mind–body[Title/Abstract]) OR mind body [Title/Abstract]) OR meditation[Title/Abstract]) OR meditative[Title/Abstract]) OR Tai Chi[Title/Abstract]) OR Taiji[Title/Abstract]) OR Qigong[Title/Abstract]) OR Baduanjin[Title/Abstract]) OR Wuqinxi[Title/Abstract]) OR Yoga[Title/Abstract]) OR Yogic [Title/Abstract]) OR Pilates[Title/Abstract]). Reference lists of identified studies were also screened.

Eligibility Criteria

Firstly, studies (including randomized controlled trials and controlled trials with non-randomization) published in English and Chinese were considered eligible only if full-text articles could be retrieved. Secondly, subjects had to be aged 16 and above who were diagnosed with schizophrenia. Thirdly, to be eligible, the experimental group must involve at least one type of MBE (*e.g.*, Tai Chi, Qigong, or Yoga) alone or a combined training mode, whereas participants in the control group maintained their unaltered lifestyle or engaged in an active control condition like psychotherapy. Initially identified records were screened by two independent reviewers to remove duplicates and obviously irrelevant records. Then, potentially eligible full-text articles were read to determine if they met the eligibility criteria or not. Disagreements were discussed with a third reviewer author.

Data Extraction and Management

Two reviewers used *a priori* developed data extraction forms to record all the information and extract data on patients independently in demographic data, methods, interventions, protocol as well as the outcomes.

Risk of Bias in Individual Studies

Risk of bias of eligible studies was assessed in Review Manager 5.3 software and the criteria of Cochrane Handbook for Systematic Reviews and meta-analysis were followed (30). The quality of evidences were also assessed *via* GRADE (Grading of Recommendations Assessment, Development and Evaluation) system (31).

Data Analysis

Assessment of Effect Size

Review Manager software was used for meta-analyses in random-effects model (30). Meta-analysis was only conducted if there were two or more pairs (experimental group *vs* control group) of comparisons on at least one health outcome (30). Standardized mean differences (SMD) with 95% confidence intervals (CI) were calculated as the difference in means between groups divided by the pooled standard deviation. SMD that reflects the magnitude of the overall effect size was categorized into: 1) Small = 0.2 to 0.5; 2) moderate = 0.5 to 0.8 and 3) large = 0.8 and above (32).

Levels of evidence were classified into five levels (strong evidence, moderate evidence, limited evidence, conflicting evidence, and no evidence) based on consistent findings, number of RCTs and risk of bias (33).

Assessment of Heterogeneity

I^2 statistic was used to identify between-study heterogeneity (low heterogeneity = 0–25%, moderate heterogeneity = 26–50%, substantial heterogeneity = 51–75%, and considerable heterogeneity = 76–100%) (30, 34).

Meta-Regression

Weighted meta-regressions were conducted for continuous, moderator variables like total duration of intervention, frequency of intervention, and duration of each session (35).

RESULTS

Literature Search

As **Figure 1** showed, the literature search retrieved 308 records in total, and 118 records were excluded for duplication. Then, 190 records were screened by title and abstract, and 125 records were excluded for relevancy. Sixty-five full-text articles were screened, and 52 records were excluded with reasons (two included non-schizophrenia patients, two did not use MBEs in the experimental group, 17 did not remain unaltered lifestyle or engage in active control condition like psychotherapy in the control group, 26 without relevant outcomes, two non-controlled

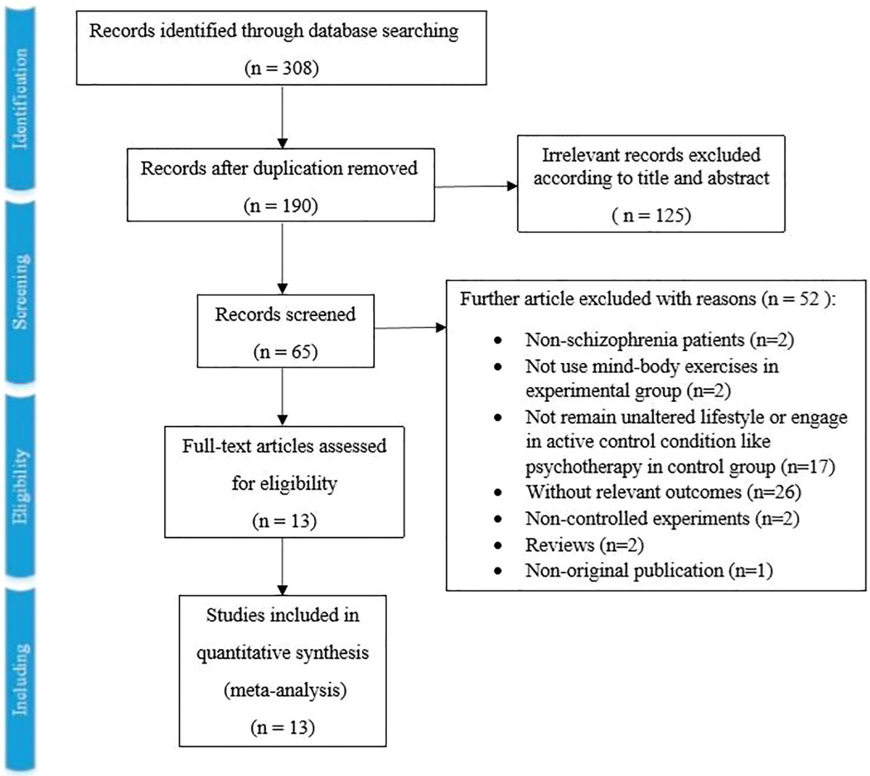


FIGURE 1 | The Detailed Process of Study Selection.

experiments, two reviews and one non-original publication). Finally, 13 studies with 1,159 patients were included in this systematic review and meta-analysis (22–24, 36–45).

Study Characteristics

This systematic review and meta-analysis included 13 studies (11 randomized controlled studies (22–24, 36, 38–42, 44, 45), one non-randomized controlled study (37) and one quasi-experimental study (43). Characteristics of the participants, interventions, and outcome assessments are shown in **Table 1**.

Setting and Participant Characteristics

Among the 13 studies that were included, six originated from India (559 participants), three from China (376 participants), two from Japan (106 participants), one from Turkey (100 participants) and one from America (18 participants). Patients were recruited from hospitals, rehabilitation residencies, a community health center, and mental health centers.

Patients in five studies were diagnosed with schizophrenia according to DSM-IV, two with DSM-IV-TR, one with Diagnostic Interview for Genetic Studies (DIGS), and two with ICD-10. Two studies did not report the diagnostic criteria. Patients in one study were diagnosed with psychiatric disorders according to ICD-10. In the study of Bhatia et al., physical and mental comorbidities were: bipolar I disorder (n = 40), major depression disorder (n = 37) and cardiology (n = 68). Patients' mean age ranged from 18 to 65 years. All trials included both males and female.

Risk of Bias Within Studies

Figure 2 summarizes the risk of bias in the selected studies. It shows that the selected studies demonstrated low risk of bias except blinding of participants and personnel for its unfeasibility for conducting MBEs' interventional study. Specifically, 11 studies were RCTs and used adequate random sequence generation. Only one study stated that assessors were not blinded, and one study had attrition bias (incomplete outcome data). Six studies had allocation concealment procedures. Three studies had been affected by reporting bias, and four had other potential sources of bias. Additionally, according to the assessment through GRADE system, five of 10 outcomes (positive and negative symptoms, depression, general psychopathology, and social function) were of moderate quality, while the others were of low quality (**Table 2**).

Outcomes

Mind–Body Exercises *vs*. Treatment as Usual

Nine studies with data on the effects of MBEs on positive symptoms were entered into the model 1 (22–24, 36, 39–42, 45). A sensitivity analysis was performed to determine consistency of the effects of MBEs on positive symptoms. By checking both the visually asymmetrical Funnel Plot (**Figure 3**) and the Egger's Regression Test (Egger's regression intercept = 2.70, $p = 0.17$), two studies were removed (SMD = 0.34) (24, 42). After their removal, the funnel plot of the remaining studies showed a symmetrical Funnel plot (Egger's regression intercept = 1.43, $p = 0.56$).

For the meta-analysis in the remaining seven studies, compared with the control group, the aggregated results showed a significant benefit in favor of MBEs on positive symptoms (SMD = 0.29; 95% CI 0.03 to 0.55; $I^2 = 36\%$; $p = 0.03$; **Figure 3**).

Nine studies with data on the effects of MBEs on negative symptoms were entered into the model 1 (22–24, 36, 39–42, 45). A sensitivity analysis was performed to determine consistency of the effects of MBEs on negative symptoms. By checking both the visually asymmetrical Funnel Plot (**Figure 3**) and the Egger's Regression Test (Egger's regression intercept = 0.26, $p = 0.88$), one study was then removed (SMD = −0.19) (41). After that, the remaining eight studies showed a symmetrical Funnel plot (Egger's regression intercept = 0.88, $p = 0.58$). Meta-analysis showed that compared with the control group, the aggregated results showed a benefit in favor of MBEs on negative symptoms (SMD = 0.43; 95% CI 0.20 to 0.65; $I^2 = 46\%$; $p = 0.0002$; **Figure 3**).

Four studies with data on the effects of MBEs on depression were entered into the model 2 (22, 24, 36, 40). Compared with the control group, the aggregated results showed a significant benefit in favor of MBEs on depression (SMD = 0.88; 95% CI 0.63 to 1.13; $I^2 = 0\%$; $P < 0.00001$; **Figure 3**).

Compared with usual treatment, there were moderately significant effects in favor of MBE intervention on improving anergia ($p<0.0001$) and side effects ($p = 0.007$). However, no significant effects were found on general psychopathology ($p = 0.18$), social function ($p = 0.18$), cognition ($p = 0.20$), quality of life (physical score: $p = 0.16$), (psychological score: $p = 0.16$), (social score: $p = 0.23$), (environment score: $p = 0.37$), and extrapyramidal symptoms ($p = 0.13$).

Meta-Regression

For both positive and negative symptoms, multiple separate meta-regressions were performed for total minutes, weekly frequency, and MBE session length. Results showed that weekly frequency was significantly correlated with improved positive symptoms ($p = 0.04$; **Figure 4**). Notably, session length was marginally correlated with improved negative symptoms ($p = 0.06$; **Figure 4**). All results of meta-regression are presented in **Figure 4**.

DISCUSSION

This meta-analysis systematically evaluated emerging evidence regarding the effects of MBEs on multiple health outcomes for individuals with schizophrenia. Results of the current review indicate that MBEs (primarily including Tai Chi and Yoga) may have beneficial effects for improving disease-specific outcomes (positive symptom, negative symptom and depression). Such promising results suggest that MBEs could be an effective complementary therapy for symptomatic management of

TABLE 1 | Descriptive Information of Included Studies.

Study	Age (mean or range)	Gender	Diagnostic; Disgnostic criteria	Setting	Intervention of control group (N)	Intervention of experimental group (N)	Cointervention	Duration of intervention	Study duration	Measurements of outcome
Behere et al. (23)	18–60	M:F = 32:12	Schizophrenia; DSM IV	Hospital outpatients	Treatment as usual (N = 17)	Yoga (N = 27)	Antipsychotic medication	Not mentioned	-1 month by yoga instructor - 2 month home practice	- PANSS - SOFS
Bhatia et al. (44)	>18	/	Schizophrenia; DSM IV	Hospital outpatients	Treatment as usual (N = 90)	Yoga (N = 104)	Not memtioned	60 min/day, 21 days by yoga instructor. Thereafter at home for 6 months.	-21 days by yoga instructor -6 months home practice	-Penn CNB -SANS -SAPS -GAF
Duraiswamy et al. (22)	18–55	M:F = 42:19	Schizophrenia; DSM IV	Hospital outpatients	Treatment as usual (N = 30)	Yoga (N = 31)	Antipsychotic medication	60 min/day, 5×/week for 3 weeks by yoga instructor. Thereafter at home for 3 months.	4 months	-PANSS -SOFS (AIMS) -WHOQOL-BREF - Shedding Rate: 33%
Ho et al. (24)	18–65	/	Schizophrenia; DSM IV-TR	Residing in a mental health rehabilitation hostel	Treatment as usual (N = 51)	Tai Chi (N = 51)	Not memtioned	45 min/day, 2×/week for 12 weeks by mental health professionals	-12 weeks by instructor -3 months (no practice)	-Chinese Version of the PANSS -Forward and backward digit spans test of the Chinese Wechsler Adult Intelligence Scale - Shedding Rate: 2%
Manjunath et al. (40)	31.1–31.7	M:F = 39:49	Schizophrenia; DSM IV	Hospital patients	Treatment as usual (N = 44)	Yoga (N = 44)	Antipsychotic medication	60 min/day, 5×/week	-2 weeks by yoga instructor -4 weeks yoga at home	-PANSS -HDRS -SAS - Shedding Rate: 32%
Varambally et al. (39)	30.6–32.8	M:F = 56:28	Schizophrenia; DSM IV	Hospital outpatients	Treatment as usual (N = 37)	Yoga (N = 47)	None	45 min/day, 25 days by yoga instructor. Thereafter 3 months of yoga at home.	4 months	-PANSS -SOFS - Shedding Rate: 21%
Bhatia et al. (37)	>18	/	Schizophrenia; DIGS	Hospital outpatients	Treatment as usual (N = 23)	Yoga (N = 23)	Antipsychotic medication	1 h/day, 21 days by yoga instructor.	21 days	Antomated computerized battery
Rainbow et al. (38)	41.02–62.72	M:F = 12:18	Schizophrenia; DSM IV-TR	Rehabilitation residency	Treatment as usual (N = 15)	Tai Chi (N = 15)	30-min daily morning stretching routine	1 h/session, twice a week by instructor.	6 weeks	-CMDT -SANSs -WHODAS-II - Shedding Rate: 20%
Saeko et al. (41)	>18	/	Schizophrenia; ICD-10	Hospital outpatients	Treatment as usual (N = 25)	Yoga (N = 25)	Antipsychotic medication	1 h/session, once a week by yoga instructor.	8 weeks	-PANSS -DIEPSS -FACT-Sz -EQ-5D
Saeko et al. (45)	39.2–70.8	M:F = 36:20	Schizophrenia; ICD-10	Hospital outpatients	Treatment as usual (N = 28)	Yoga (N = 28)	Antipsychotic medication	20 min/session, 24 sessions in all by yoga instructor.	12 weeks	-EQ-5D -GAF -MFES -PANSS -DIEPSS -TIP-Sz
Kang et al. (42)	18–60	M:F = 116:128	Schizophrenia; ICD-10	Community Health Center	Treatment as usual (N = 126)	Tai Chi (N = 118)	Antipsychotic medication	120 min/session, 2 sessions/ month by instructor.	12 months	-PANSS -WHOQOL
Funda and Mine (43)	18–55	M:F = 73:27	Schizophrenia; Not mentioned	Mental health center	Treatment as usual (N = 50)	Yoga (N = 50)	Not mentioned	40 min/session, 5 sessions/ week by yoga instructor.	6 weeks	-FROGS
Elizabeth and Stephen (36)	28.5–55.5	/	Schizophrenia; Not mentioned	Mental health center	Treatment as usual (N = 8)	Yoga (N = 10)	Not mentioned	45 min/session, 2 sessions/ week by yoga instructor.	8 weeks	-PANSS -WHOQOF-BREF

DSM, The Diagnostic and Statistical Manual of Mental Disorders; GAF, Global Assessment of Functioning scale; PANSS, Positive and Negative Syndrome Scale; Penn CNB, University of Pennsylvania Computerized Neurocognitive Battery; SANS, Scale for Assessment of Negative Symptoms; SAPS, Scale for Assessment of Positive Symptoms; SOFS, Social and Occupational Functioning Scale; AIMS, Abnormal Involuntary Movement Scale; WHOQOL-BREF, World Health Organization Quality of Life-BREF; HDRS, Hamilton depression rating scale; SAS, Simpson angus scale for extrapyramidal side effects; DIGS, Diagnostic Interview for Genetic Studies; CMDT, Minnesota Rate of Manipulation Test; SANSs, Scale for the Assessment of Negative Symptoms; WHODAS-II, World Health Organization Disability Assessment Schedule; ICD-10, The International Classification of Diseases, 10th edition; DIEPSS, The Drug Induced Extrapyramidal Symptoms Scale; FACT-Sz, The Functional Assessment for Comprehensive Treatment of Schizophrenia; EQ-5D, The EuroQol-5 Dimensions; GAF, Global Assessment of Functioning; MFES, Modified Falls Efficacy Scale in Japanese; TIP-Sz, Targeted Inventory on Problems in Schizophrenia; FROGS, Functional Remission of General Schizophrenia Scale.

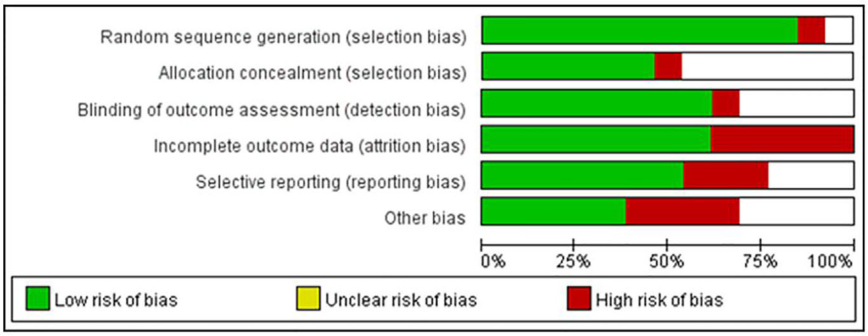


FIGURE 2 | Risks of Bias within Studies.

schizophrenia. More specifically, weekly frequency has shown to be positively associated with improved positive symptoms, while session length is marginally associated with negative symptoms with non-significant level. Notably, findings of this meta-analytic paper appear to be consistent with two previous reviews on negative symptoms (26, 28), but not positive symptoms.

In the early literature, MBEs are defined as mild to moderate-intensity of exercise modality where practitioners need to perform physical movement at slow pace while integrated with mental focus and relaxation, meditative state of mind, and deep abdominal breathing (46). Such nature of MBEs has been extensively investigated, suggesting that these unique exercise modalities have beneficial effects for mood regulation in healthy populations and treating disease-specific outcomes among individuals with psychiatric disorders, especially negative emotion (*e.g.*, anxiety and depression). Therefore, it seems to be reasonable to observe improved negative symptoms of schizophrenia in this systematic review.

Prefrontal and temporal cortex abnormalities have been shown to be connected with symptoms (negative emotion, inattention, dysfunction in cognition) of schizophrenic patients (47–49). Biological mechanism remains largely unknown about how MBEs affect symptoms of schizophrenia. Some researchers proposed that these positive results may be attributed to Tai Chi-induced change in brain intrinsic cortical structure and function (50, 51). Early imaging studies by Wei et al. (50) indicated that Tai Chi training was associated with increased cortical thickness in brain regions related to executive functions (50), as well as decreased functional homogeneity in dorsolateral prefrontal cortex that potentially optimizes locally functional organization (51). Such Tai Chi-induced change in the prefrontal lobes of the elderly may be a possible explanation for the observed positive effects for symptoms of schizophrenia in the current review. Additionally, as mentioned previously, meditative stage of mind as an essential element of MBEs needs to be achieved while performing physical movement in coordination with breathing control and mental focus. Meditation alone as an intervention program has been extensively investigated, suggesting that it could positively induce cortical change in the ACC, prefrontal cortex, posterior cingulate cortex, and insula (52–57). These areas were regarded as core regions for self-regulation of attention (52, 53), emotion (54, 56), and awareness (55, 57). Thus, it is plausible that the meditative component of MBEs might play an important role to alleviate symptoms of schizophrenia by improving brain structure and function.

Glucose metabolic abnormality was highly prevalent in patients with schizophrenia. This abnormality is mainly processed by a decrease in cerebral insulin receptors' (β-subunit) expression (58), signal transduction protein Akt1 activity (59) and insulin-degrading enzyme neuronal expression (60). Different patterns of regional glucose metabolism are related to different schizophrenia syndromes: psychomotor poverty with left prefrontal and superior parietal metabolic activity, reality distortion with left temporal lobule, and disorganization with left inferior parietal lobule (61). Recently, Huocheng et al. reported that aerobic exercise has beneficial effects for improving glucose metabolism in the medial frontal gyrus (MFG), which involves executive and visuospatial attentional functions (62). A recent study found that one-year aerobic exercise improved not only the glucose metabolism but also psychiatric symptoms (63). Thus, MBEs as typical type of aerobic exercise modalities may have the potential to improve symptoms of schizophrenia through regulating glucose metabolism.

Several limitations should be acknowledged while interpreting our findings. Firstly, several included studies had a small sample size with incomplete information, which limited our capability to conduct subgroup analyses and more comprehensive data exploration of moderators. Secondly, MBEs were offered as adjunctive treatments of existing interventions but not mono-therapy in most studies. It is difficult to determine whether the positive result is due to MBEs only, the synergistic intervention, or conventional treatment received.

Implication

This study showed that MBEs are beneficial for schizophrenia as an adjunctive treatment. These benefits can be seen in various aspects of schizophrenia prognosis and exist throughout a person's life. In addition, MBE can also reduce the potential risks of antipsychotics (*i.e.*, hesitation, retention, and transient

TABLE 2 | Summary of findings *via* GRADE System.

Mind–Body Exercises Compared with Treatment as Usual for Schizophrenia

Patient or population: patients with schizophrenia.
Settings: home, community, or hospital.
Intervention: mind–body exercises.
Comparison: treatment as usual.

Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Comments
	Assumed risk	Corresponding risk				
	Treatment as Usual	Mind–body Exercises				
Positive Symptoms	The mean score ranged across control groups from −0.60 to 4.50.	The mean score in the intervention groups was 2.56 (0.12 to 6.00).	/	747	⊕⊕⊕⊝ **moderate**	
Negative Symptoms	The mean score ranged across control groups from −0.70 to 4.30.	The mean score in the intervention groups was 2.68 (0.70 to 7.71).	/	747	⊕⊕⊕⊝ **moderate**	
General Psychopathology	The mean score ranged across control groups from −1.75 to 2.70.	The mean score in the intervention groups was 3.71 (−0.60 to 13.30).	/	456	⊕⊕⊕⊝ **moderate**	
Quality of Life (Physical Score)	The mean score ranged across control groups from −6.25 to 2.50.	The mean score in the intervention groups was 7.71 (−0.42 to 12.25).	/	323	⊕⊕⊝⊝ **low**	
Quality of Life (Psychological Score)	The mean score ranged across control groups from −5.63 to 4.38.	The mean score in the intervention groups was 13.22 (2.08 to 22.5).	/	323	⊕⊕⊝⊝ **low**	
Quality of Life (Social Score)	The mean score ranged across control groups from −8.13 to 8.63.	The mean score in the intervention groups was 12.76 (−0.09 to 23.10).	/	323	⊕⊕⊝⊝ **low**	
Quality of Life (Environment Score)	The mean score ranged across control groups from −5.00 to 0.25.	The mean score in the intervention groups was 4.82 (0.18 to 10.57).	/	323	⊕⊕⊝⊝ **low**	
Social Function	The mean score ranged across control groups from −1.48 to 3.54.	The mean score in the intervention groups was 4.85 (2.74 to 7.57).	/	289	⊕⊕⊕⊝ **moderate**	
Cognition	The mean score ranged across control groups from −0.07 to 1.40.	The mean score in the intervention groups was 1.39 (1.07 to 1.77).	/	132	⊕⊕⊝⊝ **low**	
Depression	The mean score ranged across control groups from −1.63 to 2.33.	The mean score in the intervention groups was 2.71 (0.70 to 4.83).	/	269	⊕⊕⊕⊝ **moderate**	
Anergia	The mean score ranged across control groups from v2.00 to 1.03.	The mean score in the intervention groups was 2.34 (1.13 to 3.20).	/	109	⊕⊕⊝⊝ **low**	
Side Effects	The mean score ranged across control groups from −0.20 to 0.10.	The mean score in the intervention groups was 0.60 (0.30 to 0.90).	/	149	⊕⊕⊝⊝ **low**	
Extrapyramidal Symptoms	The mean score ranged across control groups from 0.60 to 0.80.	The mean score in the intervention groups was 0.20 (−0.10 to 0.50).	/	106	⊕⊕⊝⊝ **low**	

**The basis for the assumed risk (e.g. the median control group risk across studies) is provided in footnotes. The corresponding risk (and its 95% confidence interval) is based on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI).*

CI, Confidence interval; RR, Risk Ratio; GRADE, Grading of Recommendations Assessment, Development and Evaluation.

GRADE Working Group grades of evidence.

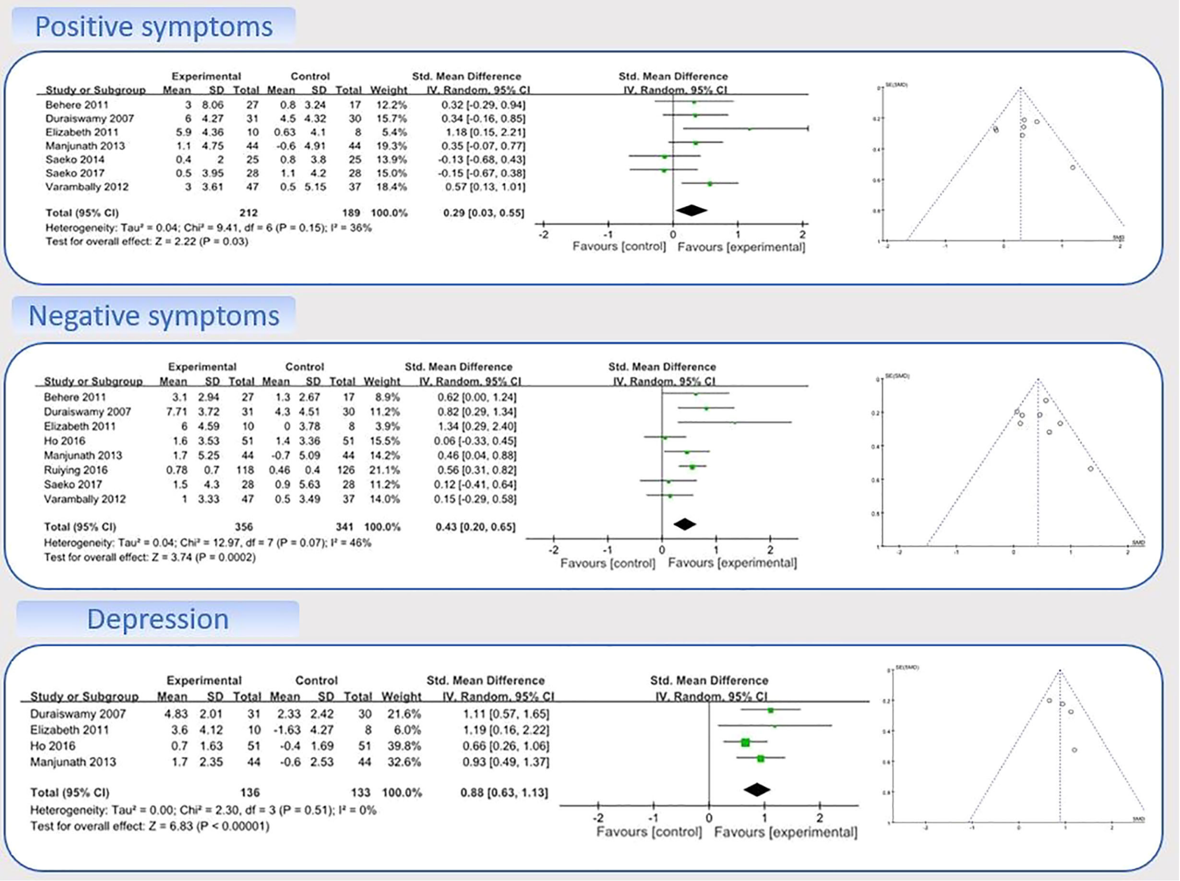
High quality: Further research is very unlikely to change our confidence in the estimate of effect.

Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.

Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.

Very low quality: We are very uncertain about the estimate.

leukopenia) (10, 11), which are critical to the patients' quality of life and well-being. Therefore, a comprehensive intervention of pharmacological and non-pharmacological treatment (*i.e.*, MBE) should be considered for patients with schizophrenia. In addition, it is necessary for the therapists who teach MBEs to receive training in mental health disorders to sensitize them to the needs of patients. Psychiatrist should work closely with therapists so that they can meet the needs of patients at any time.



Positive symptoms

Study or Subgroup	Experimental Mean	SD	Total	Control Mean	SD	Total	Weight	Std. Mean Difference IV. Random, 95% CI
Behere 2011	3	8.06	27	0.8	3.24	17	12.2%	0.32 [-0.29, 0.94]
Duraiswamy 2007	6	4.27	31	4.5	4.32	30	15.7%	0.34 [-0.16, 0.85]
Elizabeth 2011	5.9	4.36	10	0.63	4.1	8	5.4%	1.18 [0.15, 2.21]
Manjunath 2013	1.1	4.75	44	-0.6	4.91	44	19.3%	0.35 [-0.07, 0.77]
Saeko 2014	0.4	2	25	0.8	3.8	25	13.9%	-0.13 [-0.68, 0.43]
Saeko 2017	0.5	3.95	28	1.1	4.2	28	15.0%	-0.15 [-0.67, 0.38]
Varambally 2012	3	3.61	47	0.5	5.15	37	18.4%	0.57 [0.13, 1.01]
Total (95% CI)			**212**			**189**	**100.0%**	**0.29 [0.03, 0.55]**

Heterogeneity: $Tau^2 = 0.04$; $Chi^2 = 9.41$, df = 6 (P = 0.15); $I^2 = 36\%$
Test for overall effect: Z = 2.22 (P = 0.03)

Negative symptoms

Study or Subgroup	Experimental Mean	SD	Total	Control Mean	SD	Total	Weight	Std. Mean Difference IV. Random, 95% CI
Behere 2011	3.1	2.94	27	1.3	2.67	17	8.9%	0.62 [0.00, 1.24]
Duraiswamy 2007	7.71	3.72	31	4.3	4.51	30	11.2%	0.82 [0.29, 1.34]
Elizabeth 2011	6	4.59	10	0	3.78	8	3.9%	1.34 [0.29, 2.40]
Ho 2016	1.6	3.53	51	1.4	3.36	51	15.5%	0.06 [-0.33, 0.45]
Manjunath 2013	1.7	5.25	44	-0.7	5.09	44	14.2%	0.46 [0.04, 0.88]
Ruiying 2016	0.78	0.7	118	0.46	0.4	126	21.1%	0.56 [0.31, 0.82]
Saeko 2017	1.5	4.3	28	0.9	5.63	28	11.2%	0.12 [-0.41, 0.64]
Varambally 2012	1	3.33	47	0.5	3.49	37	14.0%	0.15 [-0.29, 0.58]
Total (95% CI)			**356**			**341**	**100.0%**	**0.43 [0.20, 0.65]**

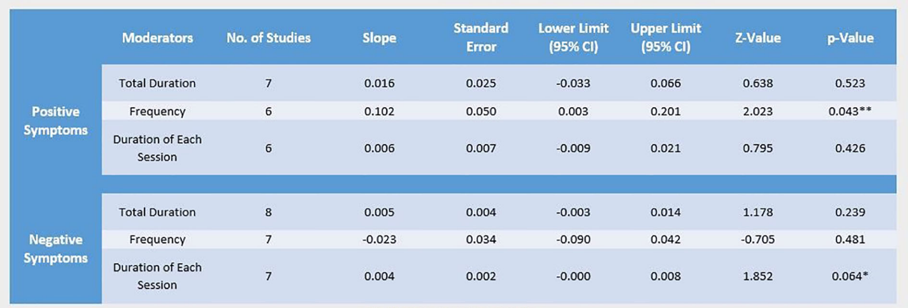
Heterogeneity: $Tau^2 = 0.04$; $Chi^2 = 12.97$, df = 7 (P = 0.07); $I^2 = 46\%$
Test for overall effect: Z = 3.74 (P = 0.0002)

Depression

Study or Subgroup	Experimental Mean	SD	Total	Control Mean	SD	Total	Weight	Std. Mean Difference IV. Random, 95% CI
Duraiswamy 2007	4.83	2.01	31	2.33	2.42	30	21.6%	1.11 [0.57, 1.65]
Elizabeth 2011	3.6	4.12	10	-1.63	4.27	8	6.0%	1.19 [0.16, 2.22]
Ho 2016	0.7	1.63	51	-0.4	1.69	51	39.8%	0.66 [0.26, 1.06]
Manjunath 2013	1.7	2.35	44	-0.6	2.53	44	32.6%	0.93 [0.49, 1.37]
Total (95% CI)			**136**			**133**	**100.0%**	**0.88 [0.63, 1.13]**

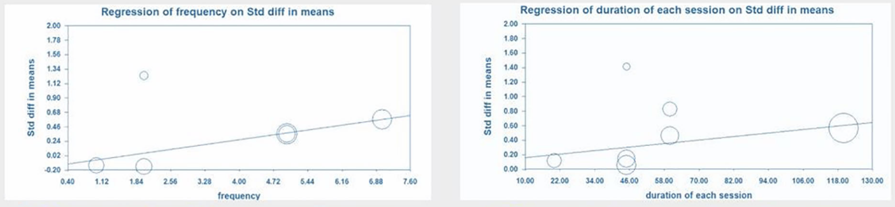
Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 2.30$, df = 3 (P = 0.51); $I^2 = 0\%$
Test for overall effect: Z = 6.83 (P < 0.00001)

FIGURE 3 | Forest Plot and Funnel Plot for Positive Symptoms, Negative Symptoms, and Depression.



	Moderators	No. of Studies	Slope	Standard Error	Lower Limit (95% CI)	Upper Limit (95% CI)	Z-Value	p-Value
Positive Symptoms	Total Duration	7	0.016	0.025	-0.033	0.066	0.638	0.523
	Frequency	6	0.102	0.050	0.003	0.201	2.023	0.043**
	Duration of Each Session	6	0.006	0.007	-0.009	0.021	0.795	0.426
Negative Symptoms	Total Duration	8	0.005	0.004	-0.003	0.014	1.178	0.239
	Frequency	7	-0.023	0.034	-0.090	0.042	-0.705	0.481
	Duration of Each Session	7	0.004	0.002	-0.000	0.008	1.852	0.064*

A. Meta regression results



B. Meta-regression for weekly frequency on positive symptoms

C. Meta-regression for session length on negative symptoms

FIGURE 4 | Meta-Regression of Intervention Factors for Improving Symptoms.

CONCLUSIONS

This meta-analytic review of the existing literature suggests that MBEs are effective interventions to improve symptoms of schizophrenia. These findings provide safe and accessible therapy to existing mainstream treatment (antipsychotic drugs and psychotherapy), and clinicians should consider using MBEs as complementary treatment for schizophrenia.

In the future, more strictly-designed RCTs with larger scale are warranted to examine the therapeutic effects and potential mechanism of MBEs for schizophrenia. Additionally, it is also needed to explore how other types of MBEs (*i.e.*, Tai Chi Chuan, Qigong) influence the symptoms of schizophrenia so as to advance the understanding of general benefits of the varied forms of MBEs. Since impaired cognition is one of the main symptoms for schizophrenia, researchers should investigate the effect of MBEs on cognitive improvement of schizophrenia.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/supplementary material; further inquiries can be directed to the corresponding author.

AUTHOR CONTRIBUTIONS

G-XW and XZ designed the study. QY wrote the protocol. QY, LY, and KI managed the literature searches and analyses. QY, PL, and LS undertook the statistical analysis, and G-XW and QY wrote the first draft of the manuscript. All authors contributed to the article and approved the submitted version.

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The Design, Implementation, and Acceptability of a Telehealth Comprehensive Recovery Service for People With Complex Psychosis Living in NYC During the COVID-19 Crisis

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Introduction: The COVID-19 crisis and subsequent stay-at-home orders have produced unprecedented challenges to the dissemination of recovery oriented behavioral health services (RS) that support the treatment of those with complex psychosis (CP).This population has typically been managed with in-person pharmacotherapy and/or RS, with the goals of relieving symptoms, improving life satisfaction and increasing community engagement. COVID-19 related social distancing measures have required rapid shifts in care management, while easing of telehealth regulations has allowed for flexibility to approach RS differently. It is essential to learn from the RS telemedicine implementation experience, so that RSs can maintain care for this vulnerable and needy population.

Method: This paper describes the successful telehealth conversion of a NYC-based, university affiliated RS that serves adults with severe mental illnesses (SMI; $n = 64$). Results focus on the telehealth acceptance rates of the subset of participants with CP ($n = 23$).

Results: The RS continued providing services including intake, care coordination, group psychotherapies, skills training groups, individual skills coaching, and vocational/educational supports. The telehealth conversion rates of the CP subsample indicated that 90% of CP patients accepted telehealth sessions and maintained their specific treatment plans in the virtual format. Mean comparisons between session attendance and cancellations/no-shows during the six-week period before and after telehealth conversion showed no significant differences in service utilization.

Discussion: RSs play an essential role in the treatment of CP and telehealth may prove to be a viable format of care delivery even after the COVID-19 crisis subsides. The multiple factors in the inner and outer treatment setting that contributed to successful conversion to telehealth will be considered along with the challenges that clinicians and patients encountered.

Keywords: COVID-19, telehealth, complex psychosis, comprehensive recovery service, implementation

INTRODUCTION

The COVID-19 crisis has challenged the ability of mental health systems to provide the comprehensive services that people with complex psychosis (CP) require to achieve and sustain a rewarding and productive life in the community. While CP is not specifically a DSM-5 or ICD-10 classification, CP is understood as a constellation of neuropsychological, physiological, developmental and behavioral difficulties that, when co-occurring with a psychotic disorder, have a pronounced impact on recovery and overall community functioning (1). Because people with CP must negotiate severe symptoms that may not respond to first line treatments, and often have co-morbid and pre-existing disorders, they benefit from comprehensive supports to achieve optimal functioning. These comprehensive supports typically involve in-person pharmacotherapy and recovery oriented behavioral health services (RS), many of which are provided in a group format. With the onset of the COVID-19 crisis, many in-person psychiatric services were no longer feasible due to public health mandates to social distance and stay at home; hence, people with CP lost the comprehensive care that has been shown effective for promoting community integration (2, 3). RSs, which typically would offer independent living and social skills training, psychological support and symptom management training, employment, educational and social supports, and access to leisure activities, started to only offer long-term injectable medication and telephone check ins. In order to maintain the skills training and recovery services impacted by COVID-19 public health mandates, a radical shift in treatment dissemination was needed and agencies turned to telehealth.

Telehealth, or synchronous telemedicine, utilizes a live videoconferencing format with a two-way audio-visual link between patient and provider. Rapid improvements in technology and access to high speed internet have increased the feasibility and acceptability of telehealth services for people with schizophrenia-spectrum disorders (4–6). Nevertheless, prior to COVID-19, telehealth was not widely disseminated for treatment of people with psychosis. Instead, it was used primarily for interim individual sessions with patients already affiliated with a specific provider, or when the availability of qualified mental health professionals may be limited. Since the onset of the COVID-19 pandemic there have been more reports of telehealth to address mental health (7–11); however, the focus remains on individual sessions and the use of telehealth for people with CP is still poorly understood.

Group-based interventions that target symptoms, promote pro-mental and physical health behaviors and foster interpersonal engagement are a mainstay of RS based psychosocial treatment for CP (12). While there has been increased interest in the use of digital therapies for this population (6, 13), regulations and HIPAA compliant technology to support group based interventions have lagged. With the rapid onset of COVID-19 in New York City, the crisis required expedited modifications to replace in-person visits with a telehealth alternative. Only since March of 2020, with the deregulation of telehealth services, has the use of the synchronized video platforms (e.g., ZOOM, WebEx) that support HIPAA compliant group psychotherapies been permitted in the USA. Thus, there remains limited empirical evidence examining the acceptance and use of telehealth platforms for group-based RS with people with CP (4, 11).

People with serious mental illnesses (SMI), which includes the CP population, are challenging to engage in in-person treatment because of symptom severity, low level of daily functioning and motivation (14). The addition of pandemic related social distancing requirements compounds the challenges of providing an intervention the CP population finds acceptable. There are feasibility concerns about using telehealth, given the cognitive deficits commonly seen in CP, though in medical populations with cognitive deficits, telehealth has been found feasible and acceptable for providing group based psychoeducational interventions (6, 15). To further the understanding of telehealth acceptance in people with CP, the current study examines the service utilization of a CP cohort attending a largely group-based RS prior to and following conversion to telehealth formats.

METHODS

Description of the Recovery Service Program

This study took place in a private university-affiliated outpatient psychiatric treatment center (www.lieberclinic.com) that provides comprehensive psychosocial and rehabilitation services to adults over the age of 18. The RS uses a recovery-oriented model to offer support for patients with SMI whose primary diagnoses typically include schizophrenia-spectrum disorder, high functioning autism spectrum disorder, and mood disorders. Using shared decision making, each RS participant works with their care coordinator to craft an individualized plan of therapeutic services that address their recovery goals. The RS provides a wide range of evidence-based services which include intake assessment, care coordination, group psychotherapies, skills training groups, individual skills coaching, vocational/educational supports, family services and recreational activities. Treatment is primarily delivered in groups; group interventions include cognitive behavioral therapies (CBT) for specific symptom clusters (e.g., psychosis, anxiety, depression, sleep), dialectical behavior therapy (DBT), Wellness Recovery Action Planning (WRAP), acceptance and commitment therapy (ACT), cognitive remediation (CR), executive functioning skills training, harm reduction, social skills and cognition training and family support. Prior to the COVID-19 pandemic, all clinical services were offered in-person at the clinic, with the exception of the individual skills coaching which was also offered in community settings.

Process of Telehealth Conversion

Due to local governmental stay at home mandates, the RS underwent a rapid telehealth conversion between March 16, 2020 and March 19, 2020. Following the conversion, no patients were seen in-person. To facilitate the conversion to telehealth, care coordinators communicated with patients and stakeholders that all scheduled sessions would be offered as previously scheduled, but in a synchronous video format. In order to participate, patients completed an additional written consent for telehealth, noting the risks and benefits. All participants were encouraged to maintain their in-person treatment plan (i.e., groups, skills coaching, individual psychotherapy, etc.) via the telehealth platform.

Modified institutional workflows, clinical procedures and technological support promoted a seamless continuity of care (11). The most challenging service element to implement was telehealth group treatment, which was unprecedented given prior regulatory constraints. Clinicians had to learn to manage group process and content virtually, and each participant needed access to and basic education in the use of telehealth platforms (e.g., ZOOM, WebEx). Content of group sessions was revised to promote engagement using telehealth and include opportunities to address COVID-related concerns. See **Table 1** for the preparatory activities associated with successful telehealth conversion.

Sample

This study focuses on data from a subsample of CP patients within the overall SMI sample enrolled at the RS (*n* = 64) six weeks post telehealth conversion. The cohort included CP (*n* = 23) and non-CP patients (*n* = 41) who, due to the COVID-19 crisis, were required to choose whether to continue their treatment in a telehealth format. Patients met inclusion for the CP subsample by having a documented psychotic disorder and at least one of the following: past or concurrent substance use, pre-morbid developmental disorders (e.g., Autism Spectrum Disorder), concurrent physical health conditions and past or concurrent mood disorder symptoms. The identification of psychotic episodes was based on DSM-5 criteria, which include the presence of one or more of the following: delusions, perceptual disturbances, disorganized speech, abnormal behavior, and negative symptoms. Diagnoses were established by psychologists and psychiatrists at intake and reported in the electronic medical record (EMR).

Method of Data Collection and Analysis

As part of a program evaluation initiative, telehealth acceptance, intakes, session attendance, diagnoses, age and race were determined using a comprehensive chart review of the EMR for all RS participants. Data was extracted by DL and verified by AM, who both serve as clinicians in the RS, with access to the EMR. A de-identified database was created for program evaluation to determine trends in service utilization, overall attendance and missed sessions from the six weeks prior to the telehealth conversion to the six weeks following the conversion. Identifiable

TABLE 1 | Preparatory work for telehealth conversion and methodology of implementation.

Workflows	Technology	Stakeholders	Considerations
Workforce regulations	Email, WebEx, phone calls	Clinicians, clerical staff, administrators	Consider factors to support and capture work from home productivity
Notification of Telehealth transition	Email, phone call, text message	Patient, family, care coordinators, external treatment providers	Utilize communication methods with highest likelihood of visibility; document attempts at communication
Consents/Telehealth Terms & Conditions	EMR, email	Patient, family	Signed/consented *via* email prior to telehealth use; uploaded/documented into EMR
Telehealth technology orientation (staff)	WebEx, Zoom	Administration, Clinical staff Information Technology (IT)	Provide virtual trainings of the features and functionality of telehealth platforms
Telehealth technology orientation (patient)	WebEx, Zoom, telephone, iPad		Provide as needed individualized instruction about telehealth platforms
Scheduling a group/individual session	EMR, Zoom, WebEx	Clinic administration, clinical staff	When possible, maintain the schedule and timing of services; maintain strong administrative support
Group expectations, i.e., "web-iquette"	Zoom, WebEx	Patients, clinical staff	Determine group rules and expectations that promote safety and confidentiality; proactively address interruptive behaviors (e.g., muting mic when not speaking, closing apps/programs that may be distracting, etc.)
Adapting group content	Zoom, WebEx	Clinical Staff	Familiarize yourself with the screensharing, annotation and document sharing functionality built-in to telehealth platform
Crisis Management	EMR, Zoom, WebEx	Clinical staff, on-call clinician	Utilize digital formats of safety planning; consider reviewing telehealth specific risk assessment practices
Billing	EMR	Clinic administration, clinical staff	CPT codes with a synchronous telehealth modifier

EMR, electronic medical record.

private information and all possible linkages to identifiable information were removed in the database used for this research. The governing Institutional Review Board determined that criteria for human subjects research, under 45 CFR 46, were not met and exempted this study from further review.

All analyses were conducted using native R packages. Within-subject and between-subject mean comparisons were conducted using Welch's *t*-tests when comparison groups had unequal variances. Chi-square analyses were used to compare frequencies between groups, using the Yates' continuity correction to account for small values.

RESULTS

Sample Characteristics

The CP subsample composition was primarily composed of white/Caucasian (88%) males (74%), with an average age of 32.6 (*SD* = 12) years. They differed from the non-CP individuals in the overall sample by virtue of having a psychotic disorder and being significantly older. See **Table 2** for non-CP and CP subsample demographics.

Telehealth Implementation

The RS continued providing all services except community-based coaching via telehealth. A coordinated effort between administration and clinical staff allowed for a nimble response to rapidly evolving regulatory changes, so that new workflows could be created (11). See **Table 1** for implementation considerations. Although all participants at the RS had access to technology, the individuals in the CP cohort were most likely to require extensive individualized training via telephone in order to use the technology, in some cases requiring the support of virtual skills coaching. Some clients struggled with virtual etiquette (e.g., appropriate camera background, dress, comportment); they were asked to help staff draft a guide to "Web-iquette," which was periodically reviewed at the start of groups or discussed on an individual basis. Maintaining attention in the virtual session was a common problem which was addressed in three ways: 1. clinicians problem-solved with clients to minimize on-screen distractions (e.g., web browser, mobile notifications, etc.); 2. clinicians used screen-sharing features and interactive activities (e.g., mindfulness exercises, ice breakers, etc.) that provided additional opportunity for engagement; 3. for groups lasting longer than one-hour, brief breaks and "check-ins" were provided.

Acceptance and Utilization Data

During the 12-week study timeframe, the CP subsample was psychiatrically stable; there were no psychiatric decompensations or referrals to a higher level of care. The telehealth acceptance rates of the CP subsample indicated that 90% (*n* = 18) of the *n* = 20 CP patients enrolled at the time of conversion agreed to telehealth sessions within ten days of the service transition, and maintained their specific treatment plans virtually. Two patients (10%) opted out of telehealth services and three patients entered the RS following the telehealth conversion (comprising a total of *n* = 23 CP patients seen during the study timeframe). In the six weeks prior to the telehealth conversion, the CP subsample attended an average of 18.6 (*SD* = 14.54) sessions (3.1/week) while missing an average of 3.85 (*SD* = 4.44) sessions. Following telehealth conversion, those who accepted telehealth (*n* = 21) attended an average of 21.33 (*SD* = 13.48) sessions (3.5/week), while missing an average of 2.9 (*SD* = 3.16) scheduled sessions. Mean comparisons between session attendance and cancellations/no shows during the six-week period before and after telehealth conversion showed no significant differences in service utilization. There were no significant differences between the CP subsample and the non-CP cohort with regards to telehealth acceptance and service utilization. See **Table 2** for service utilization and mean comparisons. See **Figure 1** for telehealth acceptance rates over the study timeframe.

TABLE 2 | Demographics and service utilization of CP subsample versus non-CP cohort (*N* = 64).

	CP Cohort (*n* = 23)	Non-CP Cohort (*n* = 41)	Test statistic (*df*)	*p*
Age				
Mean (*SD*)	32.6 (12)	26.1 (9.49)	*t* = -2.37 (35.9)	*
Gender *N* (%)				
Male	17 (74)	20 (49)	X^2 = .61 (1)	
Female	5 (22)	17 (41)		
Non-Binary	1 (4)	4 (10)		
Race/ethnicity *N* (%)				
White/Caucasian	20 (88)	39 (95)	X^2 = .01 (1)	
Black/African American	1 (4)	0		
Hispanic, Latinx	1 (4)	1 (2.5)		
Asian	1 (4)	1 (2.5)		
Telehealth acceptance *n* (%)	18 (90)	39 (95)	X^2 = 0.01 (1)	
Sessions Attended - Pre-conversion mean (*SD*)	18.6 (14.54)	24.57 (13.58)	*t* = 1.51 (36.8)	
Sessions attended—Post-conversion mean (*SD*)	21.33 (13.48)	23.6 (17.53)	*t* = 0.56 (50.8)	
Sessions Missed — Pre-conversion mean (*SD*)	3.85 (4.44)	6.92 (6.16)	*t* = 1.73 (38.5)	
Sessions missed — Post-conversion mean (*SD*)	2.9 (3.16)	4.26 (3.84)	*t* = 1.46 (48.4)	

**$p < 0.05$. Welch two sample t-test used for comparisons with unequal variances. Chi-square test used with Yates' continuity correction.*

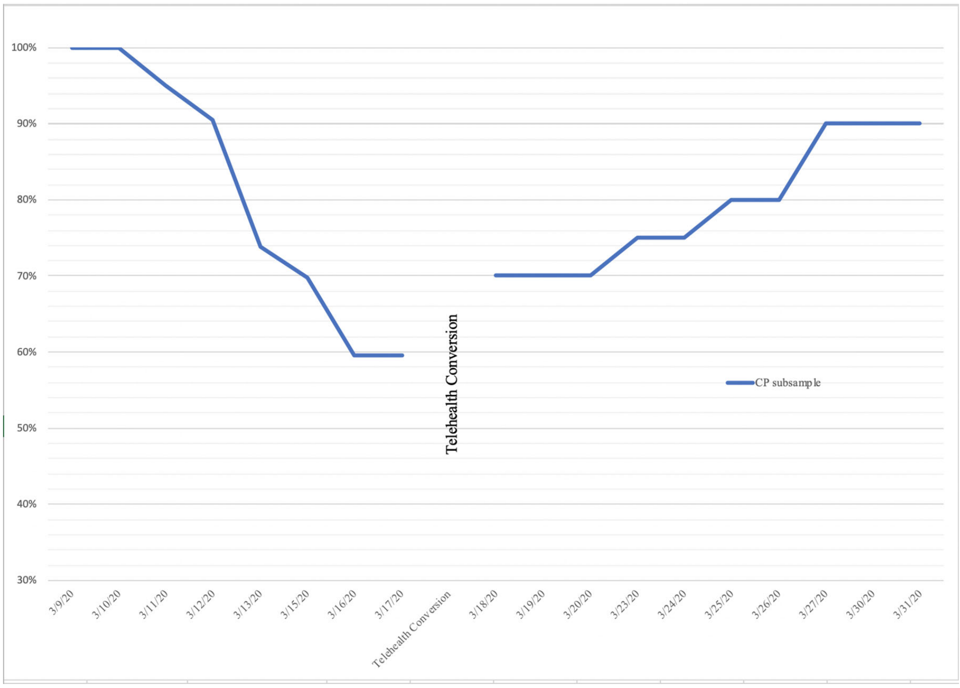

FIGURE 1 | Percentage of actively enrolled CP participants prior to and after telehealth conversion (*n* = 23).

DISCUSSION

Recovery oriented behavioral health services (RS) play an import role in the treatment of people with complex psychosis (CP), providing comprehensive supports to help participants achieve optimal functioning. While the use of telehealth technology has been explored in the field, there has been limited empirical reporting on rapidly converting an entire RS to the telehealth format (8, 16). Before the COVID-19 pandemic, RSs were offered in-person, with the belief that the socialization afforded by group interactions would facilitate community engagement. COVID-19 related social distancing measures have required a shift in how care is delivered and, for the first time, USA regulations allowed group interventions to be provided as a telehealth service. For services that converted to providing groups via telehealth, many novel questions were raised. Would participants with CP find telehealth RS acceptable and agree to participate? Would they participate at the same rate in telehealth services as in person services? Would people with CP differ from others with severe mental illness (SMI) in their acceptance of telehealth RS? What are the factors in the inner and outer treatment setting that contribute to successful conversion to telehealth? This study used the experience of one inner city RS that adapted to telehealth for people with CP, in order to provide some answers to these questions.

This retrospective study found that the vast majority of participants with CP (90%) agreed to participate in telehealth services within ten days of service transition. The RS also enrolled an additional three CP participants in the six weeks following the telehealth conversion. Comparisons of service utilization of in-person and telehealth sessions showcased that the rates of attendance and missed appointment did not change. Following the telehealth conversion, participants and clinicians sought to maintain individualized treatment plans and group schedules whenever possible, which may have contributed to the high acceptance rates and unchanged service utilization. CP participant service utilization and telehealth acceptance did not differ compared to the rest of the SMI cohort within the RS. When considered together, the study suggests that telehealth services are both feasible and readily acceptable for participants with CP.

Successful telehealth transition provided essential services for a CP subsample receiving specialized services and frequent clinical contact. Outer setting factors that facilitated this RS telehealth conversion included relaxation of pre COVID-19 government regulations that prohibited interstate telehealth services and the use of the platforms that enabled group therapy. Some of the CP participants left the state in order to shelter in place with families or in less populated areas, and with deregulation of interstate telehealth they were able to continue care at the RS. This virtual care was in turn facilitated by government deregulation of telehealth platforms needed to run groups. The RS relied on platforms like ZOOM and WebEx that adapted to provide HIPAA-compliant access.

Acceptance of telehealth conversion is an active area of study, as it informs service delivery considerations both during emergency situations and in stable conditions. The acceptance rate (90%) in this RS is much higher than a previous report that 52% of SMI patients transitioned to telehealth services (17). Inner setting factors that may have facilitated acceptance of the telehealth conversion in this RS range from administrative organization to clinician practice and participant characteristics. In terms of administrative factors, the overarching faculty practice and RS-specific administrations were nimble in responding to a rapidly changing regulatory and public health landscape. Pre-existing strong communication channels connecting clinicians to administration facilitated rapid telehealth conversion and supported ongoing adaptations to maintain quality care. In terms of clinician practice, individualized support, as needed, emphasized expectations for group membership, mollified anxieties or suspiciousness and resolved technological issues. Group leaders adapted session materials and structure to enhance engagement and address the attention deficits associated with CP. Finally, participant characteristics likely also facilitated the success of the telehealth conversion. As a private largely self-pay clinic, the RS serves participants with higher socioeconomic status (SES). In turn, high SES is associated with increased access to up-to-date technological devices, high speed internet connection and a living space that provides adequate privacy. Together, these inner settings factors addressed the technologic, clinical and administrative challenges to telehealth that have been previously identified (8).

Providing continuity of care, especially in the context of the COVID-19 pandemic, helped maintain crucial mental health services, promote community socialization, and follow social distancing guidelines for this cohort of people with CP. Unlike many studies examining telehealth and in-person sessions, the current study limits selection bias since all enrolled participants were offered telehealth services following the COVID-19 stay-at-home order guidelines. Another strength of this study is the reliance on utilization data to inform our understanding of telehealth acceptance. Since attitudes and intentions do not necessarily translate into their behaviors (18), exclusive reliance on satisfaction surveys may only inform an aspect of acceptance. That said, the lack of direct assessment of provider and user feedback and small sample size could be seen as limitations. Further, patient homogeneity likely contributed, in part, to the high acceptance rate and maintained service utilization. It will be important to continue to examine acceptability over a longer timeframe in order to understand utilization patterns and possible moderating factors. While tragic circumstances have hastened the use of telehealth as the primary format of recovery-oriented treatment, we may be heralding an essential treatment dissemination strategy that continues once the crisis subsides (19). Hence, efficacy and effectiveness trials are needed to compare relevant treatment outcomes between in-person and telehealth treatment formats.

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 governing Institutional Review Board determined that this study did not meet criteria for human subjects research and exempted it from further review. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

AUTHOR CONTRIBUTIONS

DL contributed to the submission in the following ways: data extraction and management, data analysis, manuscript writing. AM contributed to the submission in the following ways: concept formulation, study design, manuscript writing. AS contributed to the submission in the following ways: ethics oversight and manuscript writing. All authors contributed to the article and approved the submitted version.

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Effectiveness of the Boston University Approach to Psychiatric Rehabilitation in Improving Social Participation in People With Severe Mental Illnesses: A Randomized Controlled Trial

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Background: People with severe mental illnesses (SMIs) have difficulty participating in society through work or other daily activities.

Aims: To establish the effectiveness with which the Boston University Approach to Psychiatric Rehabilitation (BPR) improves the level of social participation in people with SMIs, in the Netherlands.

Method: In a randomized controlled trial involving 188 people with SMIs, we compared BPR (n = 98) with an Active Control Condition (ACC, n = 90) (Trial registration ISRCTN88987322). Multilevel modeling was used to study intervention effects over two six-month periods. The primary outcome measure was level of social participation, expressed as having participated in paid or unpaid employment over the past six months, as the total hours spent in paid or unpaid employment, and as the current level of social participation. Secondary outcome measures were clients' views on rehabilitation goal attainment, Quality of Life (QOL), personal recovery, self-efficacy, and psychosocial functioning.

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Results: During the study, social participation, QOL, and psychosocial functioning improved in patients in both groups. However, BPR was not more effective than ACC on any of the outcomes. Better social participation was predicted by previous work experience and a lower intensity of psychiatric symptoms.

Conclusions: While ACC was as effective as BPR in improving the social participation of individuals with SMIs, much higher percentages of participants in our sample found (paid) work or other meaningful activities than in observational studies without specific support for social participation. This suggests that focused rehabilitation efforts are beneficial, irrespective of the specific methodology used.

Keywords: severe mental illnesses, social participation, psychiatric rehabilitation, paid employment, unpaid employment, education, meaningful daily activities

INTRODUCTION

Severe mental illnesses (SMIs) have an enormous impact on people's daily lives and social participation (1). Common problems include unemployment rates that range from 65% to 93% (2), and difficulties with other daytime activities such as education, unpaid employment, or activities outside the home (3, 4). This is a serious issue, not only because social participation is an important facilitator of many definitions of recovery but also because it enhances financial independence and promotes Quality of Life (QOL) (4, 5). Earlier studies have shown that 55%–96% of people with SMIs have an explicit wish to improve their social participation (6, 7).

Fortunately, social participation is now a key objective of the mental health care (MHC) services responsible for people with SMIs (4). Psychiatric rehabilitation methods could help people with SMIs increase their social participation, and as a consequence, support them in their recovery process by helping them lead meaningful lives (8). One evidence-based method that helps them obtain and keep paid employment is Individual Placement and Support (IPS) (9). Methods that provide support in multiple life domains include Illness Management and Recovery (IMR) (10), the Strengths model (11), and the Boston University Approach to Psychiatric Rehabilitation (BPR) (12). The wider scope of these approaches can be particularly beneficial for individuals who are unwilling or incapable of paid employment, and thus pursue unpaid work or meaningful daytime activities. The aim of BPR is to "help persons with psychiatric disabilities increase their ability to function successfully and be satisfied in the environment of their choice with the least amount of ongoing professional intervention" (12). BPR uses a well described systematic methodology that distinguishes four phases: 1) Exploring the patient's goals in the near (6 months to 2 years) future in a self-chosen rehabilitation area (housing, work, education, and social contacts); 2) Choosing a specific goal, making a plan for necessary support and skills to develop to realize this goal; 3) Getting the goal, realizing the plan, learning skills, and organizing support; and 4) Keeping the attained goal (12, 13). When goal setting is a problem, the readiness of patients for rehabilitation is further explored and developed. Since an important component of BPR is helping patients explore their options, they do not need to have a clearly defined idea or plan for change in order to receive BPR. Therefore, the approach may be particularly suited to those who have been living with mental illness for a long time and have lost confidence in their own ability to initiate change. Earlier Randomized Controlled Trials (RCTs) on the effectiveness of BPR showed positive effects regarding social participation, social contacts, and the attainment of self-chosen rehabilitation goals (14–16). A prospective study (15) and an RCT (17) also found that BPR positively influenced QOL, psychiatric symptoms, empowerment, psychosocial functioning, and needs for care. However, in a study focused on paid employment, Rogers et al. (18) found no difference between BPR and a control condition.

As BPR is a well-implemented rehabilitative approach in the Netherlands, and as the study by Swildens et al. (14) showed that it produced promising results regarding social participation, we investigated its effectiveness in a large group of people with SMIs who wished to improve their social participation. We therefore compared BPR with an "active" control condition (ACC) in which mental health practitioners who had not been trained in BPR were given clear instructions to proactively offer support with rehabilitation goals. We hypothesized that BPR would be more effective than ACC with regard not only to increasing the social participation of individuals with SMIs but also to improving their subjective QOL, personal recovery, self-efficacy, psychosocial functioning, and to attaining subjective rehabilitation goals.

METHODS

Design

The study design, methods, and analysis plan are described in detail in Sanches et al. (19) In brief, from 2014 to 2017, we conducted a multicenter two-parallel-arm RCT with repeated measures at baseline and at 6 and 12 months (University Medical Center Groningen ethical approval reference number 2013/70; trial registration ISRCTN88987322). Randomization was conducted by an independent researcher, and participants were stratified by center and previous work experience. Data were collected by trained interviewers blinded to treatment allocation.

Participants

Participants all had SMIs and were drawn from various rural and urban regions of the Netherlands. They were recruited directly through posters and information leaflets in MHC waiting rooms and also through case-managers, psychiatrists, and nurses. Inclusion criteria were a) having a diagnosis of SMI (a DSM-IV or DSM-5 diagnosis, long-term contact with services, and functional impairments that substantially interfered with or limited major life activities); b) having expressed a wish for change in social participation; and c) age 18–64. Although hospitalization during enrolment was an exclusion criterion, we did not exclude participants with enduring comorbid eating disorders, who were often hospitalized due to low bodyweight but were otherwise able and eager to participate. To ensure that these participants were distributed evenly between interventions, they were stratified for hospitalization in the 6 months before inclusion (yes/no) and for length of stay (less/more than 3 months). Thirteen individuals with eating disorders were included, 10 of whom had been hospitalized in the 6 months before enrollment. Written informed consent was obtained from all participants.

Interventions

BPR

BPR was designed to help individuals with SMIs achieve and retain goals in four rehabilitation domains: housing, education, work, and social contacts. Such goals include wanting a certain number of hours of paid administrative work, or working 1 day a week as a volunteer in a care home.

BPR comprises four phases: exploring rehabilitation goals, choosing them, getting them, and keeping them (20). While the rehabilitation process is facilitated by a practitioner, the goal and the pace are directed by the person with SMI. No clearly predefined goal is required in order to start.

In this study, BPR was delivered by 28 trained social workers, nurses or employment specialists who had completed additional training in BPR. Participants were offered at least one session every 2 weeks. There was no predetermined total number of sessions. BPR treatment fidelity was assessed retrospectively by independent BPR experts using the Fidelity of Rehabilitation instrument (FiRe) on a scale from 1 (lowest level of model adherence) to 5 (highest level) (21). Fidelity scores were calculated for a random selection of two-thirds of BPR processes.

ACC

Participants in the ACC condition were also offered at least one session every 2 weeks by one of 55 practitioners who had backgrounds similar to those of the BPR practitioners, but lacked training in BPR. Due to the heterogeneous nature of this condition, measuring fidelity was not applicable.

BPR and ACC practitioners alike were offered regular peer coaching and were allowed to involve additional inputs such as specialized vocational services.

Primary Outcome Measures

To measure self-reported social participation over two periods of six months, we used 1) the dichotomized score on the Occupation and Employment subscale of the Birchwood Social Functioning Scale (SFS_OE) (22), i.e., unemployed (0–6) vs. employed (7–10); and 2) the total number of hours spent in paid and unpaid employment. To rate the current level of social participation, the primary clinician used the Dutch National Societal Participation Ladder, which establishes the level of social participation in six steps ranging from severe social isolation to regular paid employment (23).

Secondary Outcome Measures

All secondary outcomes were self-report measures. As in previous studies (14), goal attainment was conservatively dichotomized as no goal attainment (no/partial goal attainment) vs. goal attainment (complete goal attainment). At 6 months, goals formulated at baseline were checked for possible changes. After adjustment, the new goal was used as the goal to be evaluated. Subjective psychosocial functioning was measured using the total score of the Birchwood Social Functioning Scale (SFS) (22). For QOL, the total score on the 12 subjective items of the Manchester Quality of Life Schedule (MANSA) (24) was used. Personal recovery was measured using the 41-item Recovery Assessment Scale (RAS) (25), and self-efficacy with the 10-item General Self Efficacy Scale (GSES) (26).

Other Measures

Sociodemographic information was gathered from participants at baseline and updated at 6 and 12 months. The primary clinician used the symptoms and disabilities version of the Global Assessment of Functioning Scale (GAF-SD) (27) to describe overall psychological, social, and occupational functioning and the extended 24-item Brief Psychiatric Rating Scale (BPRS) (28) to measure psychiatric symptoms and remission. The quality of the therapeutic relationship was measured using the patient and therapist versions of the Helping Alliance Scale (29). Process data on the number of contacts and the use of additional inputs were gathered from practitioners and participants.

Statistical Analysis

Data were analyzed according to the "intention to treat principle." (30) Depending on the questionnaire guidelines, person-mean imputation was used when ≤10 or 20% of answers were missing. In other cases, no values were imputed. If patient answers on the primary outcomes were missing, information from the primary clinician or clinical files were used as proxies (12.8% of cases with missing values on ≥1 primary outcomes at 6 months and 8% at 12 months). Descriptive statistics were performed in SPSS-25. Intervention effects were analyzed using 3-level mixed models (HLM3) in HLM v7 (31) with a significance level of $\alpha = .05$ (two-sided). Level 1 (time expressed as time of measurement; baseline, 6-month follow-up and 12-month follow-up) was nested in subjects (level 2), who were nested in practitioners (level 3). Continuous outcomes were analyzed using a linear multilevel model, full maximum likelihood estimation (ML), and an unstructured (UN) covariance structure, which means that there were no constraints for the variances and covariances (32). Ordinal outcomes were treated as continuous if there were observations in each of at least five categories, and if residuals were distributed normally. Dichotomous outcomes were analyzed with a logistic multilevel model with adaptive Gaussian iterations using 100 iterations and 20 quadrature points. The basic model included time (baseline, 6 months, 12 months); condition (BPR, ACC); and the time x condition interaction. Analyses were controlled for variables that differed between the conditions at baseline (years of practitioner work experience in MHC) and for a small number of possible but essential confounders: baseline level of psychiatric symptoms, previous paid employment (yes/no) (33), living in sheltered housing (yes/no), and use of additional inputs during the study. For all outcome variables, the intercept-only model was used to calculate the intraclass correlations explaining proportions of variance for each level (34). The final model was used to calculate total explained variance (R^2) for dichotomous outcomes and continuous outcomes (34, 35). Finally, per-protocol analyses were conducted. In the ACC and BPR groups, these included subjects with at least 3 contacts. In the BPR group, they also included a fidelity assessment, in which a minimal score of 3.5 indicated sufficient BPR model fidelity (21).

RESULTS

Ninety-eight participants were assigned to BPR and 90 to ACC (for characteristics see **Table 1**). Although the groups did not differ with regard to patient and practitioner characteristics and to outcome measures at baseline, ACC practitioners were significantly more experienced than BPR practitioners (p = 0.007).

Figure 1 shows the CONSORT participant flow chart. Drop-out was low and was also comparable between the conditions (12 months: BPR = 9.2%; ACC = 8.9%). While individuals who were lost to follow up did not differ from those with complete data, psychosocial functioning was significantly poorer in dropouts (t = 2.26, df = 186, p = 0.025).

The interventions were well received as 75% of all study participants would recommend the help they received to others (12 months: BPR = 76.3%; ACC = 71.4%, p = 0.138). **Table 2** lists information on goal areas and the rehabilitation process. Almost 50% of participants had paid employment as their initial goal area, followed by unpaid work, education, and other daily activities and social contacts. This was similar between the conditions. In the first 6 months, 20 individuals adjusted their primary goal and goal area, mainly from paid employment to unpaid employment or other meaningful daily activities. Most individuals were nonetheless supported in achieving their goals regarding paid employment. Significantly more participants in ACC than in BPR received additional support (30% versus 15.3% see **Table 2**), which was provided by inputs such as a job coach, through participation in projects organized by local governments, or through IPS. IPS was received by five individuals in ACC but none in BPR.

At 6 months, participants in the BPR condition rated the quality of the therapeutic relationship more highly than participants in the ACC condition did. The practitioners' ratings were the opposite, with ACC practitioners giving higher ratings than BPR practitioners. At 12 months, none of these differences were significant. BPR fidelity was insufficient for one-third (33.8%) of the BPR practitioners assessed (score < 3.5).

Multilevel Analyses of Primary Outcome Measures

Table 3 presents the mixed models for all primary outcome measures separately. The SFS_OE subscale significantly improved during the study period (t-ratio = 2.30, df = 247, p = 0.022). However, the rate of improvement did not vary across the two conditions (t-ratio = 0.930, df = 97, p = 0.355). Significant effects were found for fewer baseline psychiatric symptoms (t-ratio = −2.49, df = 97, p = 0.015); previous paid employment (t-ratio = 3.85, df = 97, p < 0.001); having received additional support (t-ratio = 2.39, df = 97, p = 0.019); and supported and sheltered housing (t-ratio = −2.14, df = 97, p = 0.035). Although the per-protocol analysis (n = 119) showed a significant increase in SFS_OE scores during the study period, and a significant effect for symptoms and previous paid employment, it showed no significant effect for condition, and no effect for additional support or supported and sheltered housing.

During the study period, total hours of participation increased significantly (t-ratio = 2.84, df = 241, p = 0.005), with no difference between the conditions (t-ratio = 0.649, df = 97, p = 0.518). There were significant effects for fewer baseline psychiatric symptoms (t-ratio = −3.55, df = 97, p < 0.001); previous paid employment (t-ratio = 3.54, df = 97, p < 0.001); and having received additional support (t-ratio = 2.77, df = 97, p = 0.007). The per-protocol analysis showed similar results and also a positive effect for practitioners with more years of work experience.

Over the study period, scores on the six steps of the participation ladder showed a significant improvement in social participation (t-ratio = 2.67, df = 247, p = 0.008). Again, the rate of improvement did not vary between the two conditions (t-ratio = 0.028, df = 97, p = 0.978). There were significant effects for fewer baseline psychiatric symptoms (t-ratio = −3.66, df = 97, p < 0.001) and previous paid employment (t-ratio = 4.22, df = 97, p < 0.001). The per-protocol analysis showed similar results.

Multilevel Analyses of Secondary Outcome Measures

The rate of improvement did not differ between the conditions for any of the secondary outcome measures (see **Supplementary Table 1**). After 12 months, 43.1% of goals had been fully attained (BPR 43.9%; ACC 42.2%), while 54.8% had not, or had been attained only in part (BPR 54.1%; ACC 55.6%). The percentages of goals that had been fully attained differed between goal areas, but without differences between conditions: paid employment 31% [$\chi(2) = 1.59$, p = 0.451]; unpaid employment 66% [$\chi(3) = 2.49$, p = 0.477]; education 35.5% [$\chi(1) = 0.53$, p = 0.465]; and daily activities and social contact 52.9% [$\chi(1) = 1.02$, p = 0.312]. Goal attainment was significantly influenced by fewer baseline psychiatric symptoms (t-ratio = −3.59, df = 94, p < 0.001) and by previous paid employment (t-ratio = 2.25, df = 94, p = 0.027). The model with the per-protocol group failed to reach convergence.

QOL improved significantly during the study period (t-ratio = 3.32, df = 237, p = 0.001), with significant effects for fewer

TABLE 1 | Baseline characteristics of study participants and MHC workers, and differences between BPR and ACC groups.

Variable	Total group (188)	BPR(98)	ACC(90)	Test statistic (df)	p
Gender, n (%)					
Male	109 (58)	58(59.2)	51 (56.7)	$\chi^2(1) = 0.122$	0.727
Female	79 (42)	40 (40.8)	39 (43.3)		
Age, years: mean (SD)	39.89 (11.34)	39.18 (10.68)	40.67 (12.04)	t(186) = 0.895	0.372
Main diagnosis, n (%)					
Psychotic disorder	113 (60.1)	59 (60.2)	54 (60)	$\chi^2(5) = 2.946$	0.708
Bipolar disorder	6 (3.2)	2 (2.0)	4 (4.4)		
Depressive or anxiety disorder	13 (6.9)	7 (7.1)	6 (6.7)		
Personality disorder	12 (6.4)	8 (8.2)	4 (4.4)		
Eating disorder	13 (6.9)	8 (8.2)	5 (5.6)		
Other	31 (16.5)	22 (22.4)	22 (24.4)		
Psychiatric symptoms[1]: mean (SD)	44.67 (12.86)	44.25 (13.18)	45.12 (12.56)	t(184) = 0.458	0.647
Duration in MHC (in years): mean (SD)	15.56 (10.76)	15.75 (9.93)	15.36 (11.63)	t(182) = −0.244	0.808
GAF Symptom score[2]: mean (SD)	58.27 (13.26)	58.31 (12.16)	58.22 (14.41)	t(184) = −0.046	0.963
GAF Handicap score[3]: mean (SD)	56.63 (14.89)	56.25 (13.19)	57.03 (16.58)	t(169.91) = 0.355	0.723
Educational level, n (%)[4]					
Low[5]	75 (39.9)	40 (40.8)	35 (38.9)	$\chi^2(3) = 1.038$	0.792
Medium[6]	79 (42)	40 (40.8)	39 (43.3)		
High[7]	33 (17.6)	17 (17.3)	16 (17.8)		
Current daytime activities, n (%)					
Paid employment	13 (7)	8 (8.2)	5 (5.6)	$\chi^2(1) = 0.467$	0.494
Unpaid work	68 (36.2)	33 (33.7)	35 (38.9)	$\chi^2(1) = 0.553$	0.457
Education	8 (4.3)	3 (3.1)	5 (5.6)	$\chi^2(1) = 0.716$	0.397
Supported and sheltered housing, n (%)					
No	146 (77.7)	77 (78.6)	69 (76.6)	$\chi^2(1) = 0.098$	0.754
Yes	42 (22.3)	21 (21.4)	21 (23.3)		
Paid or unpaid employment over the past six months,[8] n (%)					
No	97 (51.6)	51 (52.0)	46 (51.1)	$\chi^2(1) = 0.016$	0.899
Yes	91 (48.4)	47 (48.0)	44 (48.9)		
Participation ladder[9]: mean (SD)	3.06 (1.08)	3.00 (1.09)	3.12 (1.07)	t(184) = 0.773	0.440
Hours in paid employment:[10] mean (SD)	13.92 (9.94)	12.88 (8.39)	15.60 (12.93)	t(11) = 0.465	0.651
Hours in unpaid work[11]: mean (SD)	10.11 (7.28)	9.77 (6.57)	10.43 (7.97)	t(66) = 0.370	0.713
QOL[12]: mean (SD)	52.25 (12.11)	52.21 (13.03)	52.21 (11.08)	t(186) = 0.056	0.955
Personal recovery[13]:mean (SD)	84.93 (12.54)	84.42 (12.57)	85.49 (12.56)	t(185) = 0.582	0.561
Self-efficacy[14]: mean, (SD)	28.47 (5.92)	28.06 (5.77)	28.93 (6.08)	t(184) = 1.004	0.317
Psychosocial functioning[15]: mean (SD)	126.54 (21.87)	125.26 (20.16)	127.92 (23.62)	t(186) = 0.833	0.406
Practitioners' work experience (years): mean (SD)	17.78 (11.19)	15.66 (9.75)	20.09 (12.22)	t(170.11) = 2.736	0.007**
Practitioners' educational level, n (%)					
Medium	9 (4.8)	3 (3.1)	6 (6.7)	$\chi^2(1) = 1.338$	0.247
High	179 (95.2)	95 (96.9)	84 (93.3)		

**P < 0.05, **P < 0.01, ***P < 0.001.*

baseline psychiatric symptoms (t-ratio = −5.18, df = 97, p < 0.001), previous paid employment (t-ratio = −2.99, df = 97, p = 0.004) and for practitioners with less work experience in MHC (t-ratio = 2.25, df = 94, p = 0.027). The results of the per-protocol analysis were comparable.

Change in personal recovery was significantly influenced by fewer baseline psychiatric symptoms (t-ratio = −6.12, df = 97, p < 0.001). The per-protocol analysis showed similar results.

Change in self-efficacy was significantly influenced by fewer baseline psychiatric symptoms (t-ratio = −4.19, df = 97, p < 0.001). The per-protocol analysis showed similar results.

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[1] Brief Psychiatric Rating Scale (BPRS); scores range from 24–168; higher scores indicate more psychiatric symptoms

[2] Global Assessment of Functioning Scale – Symptoms (GAF-S); scores range from 0–100; lower scores indicate more symptoms

[3] Global Assessment of Functioning Scale – Disabilities (GAF-D); scores range from 0–100; lower scores indicate more severe disabilities

[4] OECD, European Union, UNESCO Institute for Statistics. ISCED 2011 Operational Manual: Guidelines for classifying National Education Programmes and Related Qualifications. OECD publishing, 2015 (36).

[5] ISCED level 0, 1, and 2

[6] ISCED level 2, 4, and 5

[7] ISCED level 5, 7, and 8

[8] dichotomized score on the Occupation and Employment subscale of the Birchwood Social Functioning Scale: unemployed (0–6) vs. employed (>= 7); scores range from 0–10; higher scores reflect more social participation

[9] Dutch National Societal Participation Ladder; scores range from 1–6; higher scores indicate more social participation

[10] Based on those with paid employment

[11] Based on those with unpaid employment

[12] Manchester Quality of Life Schedule (MANSA); scores range from 12–84; higher scores indicate better QOL

[13] Recovery Assessment Scale (RAS); scores range from 41–205; higher scores indicate a higher degree of recovery

[14] General Self-efficacy Scale (GSES); scores range from 10–40; higher scores indicate greater self-efficacy

[15] Birchwood Social Functioning Scale (SFS) total score; scores range from 0–223; higher scores indicate fewer impairments

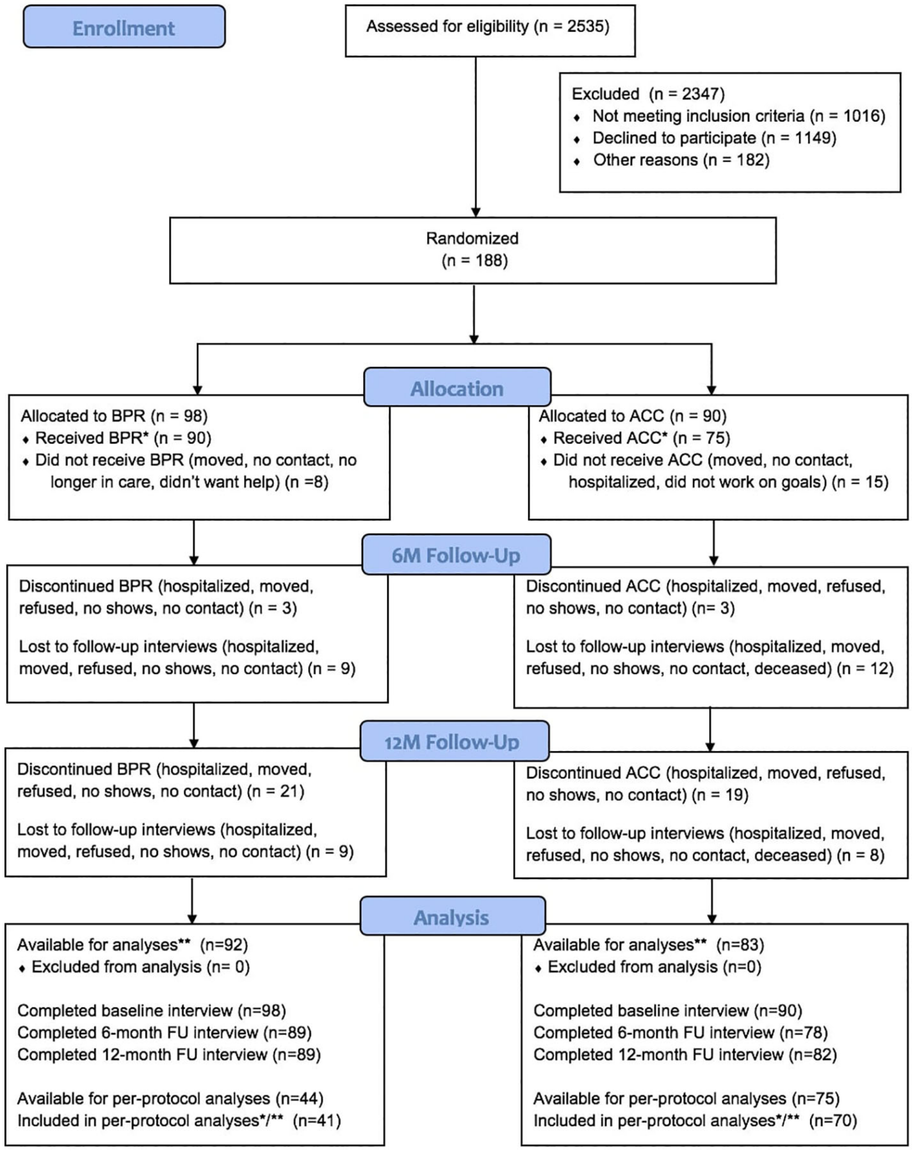

FIGURE 1 | CONSORT flow chart. * Received at least 3 sessions. ** Participants with baseline and 6-month or baseline and 12-month measurement, or all measurements (in multilevel modeling, all available data on outcome are used).

Psychosocial functioning improved significantly during the study period (t-ratio = 2.35, df = 236, p = 0.020), with significant effects for fewer baseline psychiatric symptoms (t-ratio = −3.75, df = 97, p < 0.001) and previous paid employment (t-ratio = 2.47, df = 97, p = 0.015). While the per-protocol analysis showed similar results, it did not show the significant improvement in psychosocial functioning over the study period.

DISCUSSION

In our study, BPR did not improve social participation more effectively than ACC. Social participation, QOL, and psychosocial functioning improved in both groups during the study period, with around 43% of the participants per group attaining their social participation goals. Our finding that previous working experience and baseline level of psychiatric symptoms consistently predicted outcome is in line with studies on predictors for vocational functioning in individuals with SMI (37). The overall explained variance was low (<20%), indicating that the multilevel models were also influenced by factors we had not investigated.

As in previous studies on the effectiveness of BPR (14, 15), most participants had goals with regard to paid employment and education, and fewer of them chose either unpaid work or daily activities and social contacts. Most of those who changed their goals changed from paid employment to unpaid employment or

TABLE 2 | Information on goal areas and the rehabilitation process.

Variable	Total group (188)	BPR(98)	ACC(90)	Test statistic (df)	p
Initial goal area, n (%)					
Paid employment	92 (48.9)	44 (44.9)	48 (53.3)	$\chi^2(4) = 5.404$	.248
Unpaid employment	48 (25.5)	24 (24.5)	24 (26.7)		
Education	29 (15.4)	16 (16.3)	13 (14.4)		
Other daily activities and social contacts	16 (8.5)	11 (11.2)	5 (5.6)		
Goal area adjusted in first 6 months, n (%)					
No	167 (89.3)	87 (88.8)	80 (89.9)	$\chi^2(1) = 0.060$	.806
Yes	20 (10.7)	11 (11.2)	9 (10.1)		
Supported goals, n (%)					
Paid employment	84 (45.4)	39 (41.1)	45 (50)	$\chi^2(3) = 5.371$	.147
Unpaid employment	53 (28.6)	26 (27.4)	27 (30)		
Education	31 (16.8)	17 (17.9)	14 (15.6)		
Other daily activities and social contacts	17 (9.2)	13 (13.7)	4 (4.4)		
Number of sessions, mean[16] (SD)	15.06 (12.11)	16.15 (11.37)	13.87 (12.81)	t(186) = −1.30	0.197
Additional vocational support, n (%)					
No	145 (77.1)	82 (83.7)	63 (70.0)	$\chi^2(2) = 6.59$	0.037*
Yes	42 (22.3)	15 (15.3)	27 (30.0)		
Individual Placement and Support (IPS), n (%)					
No	183 (97.3)	98 (100)	85 (94.4)	$\chi^2(1) = 5.59$	0.018*
Yes	5 (2.7)	0 (0)	5 (5.6)		
Therapeutic relationship at 6-month FU (patient's perspective)[17], mean (SD)	40.21 (8.93)	41.79 (7.12)	38.46 (10.35)	t(129.40) = −2.33	0.021*
Therapeutic relationship at 6-month FU (practitioner's perspective)[18], mean (SD)	36.64 (4.56)	35.91 (4.92)	37.54 (3.92)	t(158) = 2.28	0.024*
Therapeutic relationship at 12-month FU (patient's perspective)[17], mean (SD)	39.54 (9.96)	40.95 (8.54)	38.00 (11.16)	t(130.83) = -1.79	0.075
Therapeutic relationship 12-month FU (practitioner's perspective)[18], mean (SD)	36.86 (4.93)	36.64 (4.87)	37.10 (5.01)	t(140) = 0.56	0.577

*$P < 0.05$, **$P < 0.01$, ***$P < 0.001$.*

TABLE 3 | Multilevel model including possible confounders for the primary outcome measures.

	SFS_OE			Participation ladder		Hours of participation[19]	
Variable	Coefficient (SE)	OR (95% CI)[20]	P	Coefficient (SE)	P	Coefficient (SE)	P
Intercept	1.169 (0.955)	3.219 (0.481–21.539)	0.244	3.636 (0.306)	<0.001***	7.483 (2.069)	<0.001***
Time	0.520 (0.226)	1.682 (1.077–2.628)	0.022	0.169 (0.063)	0.008**	1.397 (0.492)	0.005**
Condition	0.661 (0.711)	1.936 (0.472–7.936)	0.355	0.006 (0.215)	0.978	0.892 (1.373)	0.518
Time*condition	−0.364 (0.305)	0.695 (0.381–1.267)	0.234	-0.012 (0.088)	0.893	−0.499 (0.668)	0.456
Baseline level of psychiatric symptoms	−0.041 (0.016)	0.969 (0.930–0.992)	0.015*	-0.019 (0.005)	<0.001***	−0.150 (0.042)	<0.001***
Previous work experience (yes -no)	2.388 (0.620)	10.895 (3.184–37.282)	<0.001***	0.743 (0.176)	<0.001***	5.507 (1.554)	<0.001***
Additional vocational inputs (yes – no)	1.173 (0.491)	3.231 (1.220–8.558)	0.019*	0.306 (0.156)	0.053	3.504 (1.265)	0.007**
Supported/sheltered housing (yes – no)	−1.038 (0.485)	0.354 (0.135–0.928)	0.035*	−0.014 (0.157)	0.929	0.185 (0.969)	0.849
Practitioner work experience in years	−0.019 ()0.019	0.981 (0.945–1.019)	0.321	−0.001 (0.006)	0.919	0.072 (0.045)	0.115
Model fit							
R^2 (R^2 per-protocol)	0.204 (0.20)			0.140 (0.20)		0.150 (0.18)	
$ICC_{subject}$ ($ICC_{subject}$ per-protocol)	0.621 (0.60)			0.498 (0.51)		0.553 (0.56)	
$ICC_{practitioner}$ ($ICC_{practitioner}$ per-protocol)	0.000 (0.00)			0.001 (0.00)		0.001 (0.00)	

*$P < 0.05$, **$P < 0.01$, ***$P < 0.001$.*

other meaningful daily activities. Similarly, in ACC and BPR and alike, the percentages of those who fully attained their goals with regard to paid employment and education were lower than in the other goal areas.

Our study is not the first in which the effect of the experimental condition was no greater than that of the control. Like us, Rogers et al. (18) found that both groups improved, but that BPR was not superior to ACC in the vocational domain. They suggested that this may have been due to various improvements that had been made to ACC in order to prevent dropout. If so, it may be possible to attribute the small difference between the conditions in our own study to the fact that practitioners in ACC called in help from specialist vocational services —including IPS employment specialists— significantly more often than BPR practitioners did, even though the involvement of additional inputs was allowed in both conditions.

It is also possible that, in recent years, the ACC had become more focused on rehabilitation. Although ACC practitioners had not received the same training as BPR practitioners, they may

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[16] Not including additional support

[17] Helping Alliance Scale – patient version (HAS-P); scores range from 0–52; higher scores indicate better helping alliance

[18] Helping Alliance Scale – therapist version (HAS-T); scores range from 0–50; higher scores indicate better helping alliance

[19] Because residuals were slightly skewed, we report robust standard errors here

[20] Odds ratios and confidence intervals are provided for dichotomous outcomes

have been influenced by the growing awareness of the importance of helping patients gain employment or other meaningful daily activities (38). To illustrate this possible period effect, we can compare our results with those of a study conducted by members of our research team between 2005 and 2008 on the broad effectiveness of BPR (14), since when MHC facilities and training institutes have paid increasing attention to rehabilitation. In the study in question, goal attainment in BPR after 12 months was approximately twice as high as in ACC. Some 10 years later, as the current study shows, it was comparable. However, in the whole sample in the earlier study, 26.6% of social participation goals had been attained after 12 months, against 43.1% in the current study. Our finding of an overall increase in goal attainment after 12 months may indicate that the greater attention paid to rehabilitation and personal goal attainment is paying off.

As program fidelity was insufficient in one-third of the BPR processes, the absence of a difference in effect may also be explained partly by poor implementation or by program drift. However, the per-protocol analysis, which only included practitioners with sufficient BPR program fidelity, also showed no effect for condition. The explanation may lie in the inclusion of BPR processes whose criterion for BPR fidelity had been set relatively low. As the per-protocol subgroup was very small, it may also lie in a lack of power.

It has also been suggested that BPR is particularly difficult to implement because its operationalization is very complex and may not be easy for MHC professionals from all professional and training backgrounds (21, 39). As poor implementation seems to be a recurring problem in trials of rehabilitation methodologies (40, 41), more effective implementation strategies are needed.

Another possible reason for the lack of an effect of condition in this study is that almost half the participants wanted paid employment, the goal that proved the hardest to attain. The strength of BPR is that it focuses on all rehabilitation-goal areas, which makes it suitable for individuals who are not satisfied with their life in certain domains and wish to explore the options for change, or for those who find it difficult to initiate change. However, due to its broad perspective, BPR is not designed to help people to attain goals such as paid employment, which would then require specific expertise it could not support. More specialized methods may be needed for specific goal areas, such as IPS (42), which is specifically designed to help individuals gain and maintain paid employment and is widely available in the Netherlands (43).

Finally, during the study period, a new social support act was introduced in the Netherlands that brought extensive changes to local government and MHC institutions. These also led to changes to individual recipients, such as cuts in their budgets for meaningful daily activities. New rules also came into effect concerning the permissible types and intensity of support.

We should add that our study was conducted in a period of economic recession. While almost half the participants wanted paid employment, there were few job opportunities. When almost no paid jobs are available, especially for people who are difficult to fit into the labor market, it may not really matter what sort of support is available, as their goals are generally difficult to attain. In such cases, the potential added value of targeted psychiatric rehabilitation approaches is smaller.

An unexpected finding of our study concerned the difference between patients and practitioners with regard to the 6-month ratings of the quality of the therapeutic relationship. While our finding that patients in BPR gave higher ratings than those in ACC may be explained by the person-centered approach of BPR (44), it is unclear why practitioners in ACC gave higher ratings to the relationship with their patients than those in BPR.

The fact that aspects of the therapeutic relationship are important predictors of the effectiveness of psychiatric rehabilitation methods, in general, was shown in a study conducted by members of the current study group (45). The results of that study showed that agreement on goals between practitioner and patient significantly predicted goal attainment at 24 months, for the total study group (BPR and ACC together). Furthermore, goal attainment significantly predicted QOL at 24 months. In that study, BPR was found to be more effective than ACC independent of the effect of agreement on goals. This suggests that the effectiveness of targeted psychiatric rehabilitation approaches such as BPR is also influenced by methodology-specific aspects. However, no studies have been conducted on the working mechanisms of BPR, and this is highly recommended for future research. Furthermore, a recent meta-analysis showed that psychiatric rehabilitation approaches such as BPR could be improved by combining them with cognitive training (46). This is particularly the case in the area of social participation. This notion should be further explored in future research. With regard to goals, several tools have been developed that may aid in clarifying the patients' goals and support collaborative goal setting. These are the 2-COM (2-way communication), GAS (goal attainment scaling), and CASIG (Clients Assessment of Strengths, Interests, and Goals) (47–49). Perhaps, incorporating these kinds of tools into psychiatric rehabilitation practice could further improve psychiatric rehabilitation effectiveness.

Our study has four main strengths. The first is the heterogeneous group of individuals with SMIs, which made it easier to generalize our results. Second, to the best of our knowledge, this was the first study to include patients with severe long-term eating disorders, whose impairments with regard to social participation are similar to those in people with other SMIs (50). The other strengths are the low attrition rate and the active control group, which ensured that both conditions received equal amounts of attention.

A limitation of our study was the short follow-up period. In the study by Swildens et al. (14), which used a 24-month follow-up period, the rate of goal attainment almost doubled between month 12 and month 24. More time may have been needed to attain social participation goals, particularly during an economic recession, but unfortunately a lack of financial resources did not allow longer follow-up. A second limitation is that fidelity ratings were obtained for only a selection of the BPR practitioners. A third limitation is that although service users were involved in the development of BPR and the design of the study, they were not consulted on the models that were analyzed. As a consequence, their views on the strengths and weaknesses of the studied models are lacking, while these views may have provided relevant clues as to which factors could influence social participation. Although we found no effect for condition in this study, it should be noted that a significant proportion of participants improved their social participation during the study period. This suggests that working on social participation does indeed have the intended effect, irrespective of the specific methodology used. More specifically, in a naturalistic study that monitored employment in FACT teams lacking specialized vocational services, Kortrijk et al. (51) found at one-year follow-up that only 3.9% of individuals with SMI had found paid employment. That is considerably less than the 31.3% in our study and highlights the successes that can be achieved by working on social participation. However, as shown by our finding that less than half of the social participation goals in our study were fulfilled, there is still ample room for improvement.

DATA AVAILABILITY STATEMENT

The datasets presented in this article are not readily available because Altrecht Mental Health Care needs to consent to data access. Requests to access the datasets should be directed to WS, w.swildens@altrecht.nl.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the Research Ethics Committee of the University Medical Center Groningen. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

SS, WS, JW, and JB formulated the research questions, designed the study, recruited participants, designed and carried out the analysis, and wrote the article. BS recruited participants, coordinated data, and reviewed the manuscript. MM advised on the statistical analyses and reviewed the manuscript. TF, AA, and UD reviewed the 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.2020.571640/full#supplementary-material

SUPPLEMENTARY TABLE 1 | Multilevel model including possible confounders for the secondary outcome measures.

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The Active Recovery Triad Model: A New Approach in Dutch Long-Term Mental Health Care

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Unlike developments in short-term clinical and community care, the recovery movement has not yet gained foothold in long-term mental health services. In the Netherlands, approximately 21,000 people are dependent on long-term mental health care and support. To date, these people have benefited little from recovery-oriented care, rather traditional problem-oriented care has remained the dominant approach. Based on the view that recovery is within reach, also for people with complex needs, a new care model for long-term mental health care was developed, the active recovery triad (ART) model. In a period of 2.5 years, several meetings with a large group of stakeholders in the field of Dutch long-term mental health care took place in order to develop the ART model. Stakeholders involved in the development process were mental health workers, policy advisors, managers, directors, researchers, peer workers, and family representatives. The ART model combines an *active* role for professionals, service users, and significant others, with focus on *recovery* and cooperation between service users, family, and professionals in the *triad*. The principles of ART are translated into seven crucial steps in care and a model fidelity scale in order to provide practical guidelines for teams implementing the ART model in practice. The ART model provides guidance for tailored recovery-oriented care and support to this "low-volume high-need" group of service users in long-term mental health care, aiming to alter their perspective and take steps in the recovery process. Further research should investigate the effects of the ART model on quality of care, recovery, and autonomy of service users and cooperation in the triad.

Keywords: long-term mental health care, recovery, care model, development, serious mental illness (SMI)

INTRODUCTION

Internationally, the concept "*Recovery*" has gained increased attention in mental health care (1–4). Particularly for people with severe mental illness (SMI), recovery has become an important issue and is acknowledged in (inter)national policy (5–10). SMI is associated with large social and functional impairments as a result of mental illness (e.g., schizophrenia, bipolar disorder, and personality disorder), persistent for a long period of time (>2 years), and requiring coordinated psychiatric care (11, 12). People with SMI often show complex problems at multiple life domains, which makes recovery a difficult concept for them. Full clinical recovery, sustained remission of symptoms, may not be within reach (3). However, recovery defined as a personal process in which persons discover how to live a meaningful and satisfying life despite the limitations of the illness (13), suggests that the process of recovery may be possible regardless of symptoms and social and functional limitations. In this light, recovery can imply (small) steps toward more community participation, and empowerment, enabling people to regain grip on daily life and finding hope and confidence in the possibility of a meaningful and satisfying life.

The recovery movement has had an impact in the Dutch context and has urged the Dutch mental health system to change. To date, these changes mainly affected acute clinical and community care and lead to the development of care models such as Flexible Assertive Community Treatment (FACT), High and Intensive Care (HIC), and Intensive Home Treatment (IHT) (14–16). Despite these necessary developments in short-term clinical and in community care, the recovery movement has not yet gained foothold in services for long-term mental health care (17). This type of care is typically provided for individuals with complex needs for whom living within the community is deemed unlikely (18). For this group of people, models of outpatient care such as FACT or ACT seem to be insufficient. Though, internationally, the setting in which support is provided to this group of service users varies to some extent, people often live in residential psychiatric facilities because of their dependence upon intensive psychiatric care and support. These long-term psychiatric residential care facilities are characterized by a variety of mental health facilities, ranging from long-stay clinical wards to supported or sheltered living accommodations, situated in an institutional setting or in the community.

Following the example of many other European countries, deinstitutionalization has become an important notion in Dutch mental health care. Large mental health organizations reduced the number of beds, decentralized care, and cooperated with community-based services to meet the needs of their service users. Nevertheless, for a small group of service users with complex mental health needs, these intensive residential services remain warranted (18). Estimations on the magnitude of this group are scarce and vary between 10 and 20% of all people with SMI (19–21). In the Netherlands, the group of people who are dependent on 24-h long-term mental health care and support has recently been estimated at 21,000 people (i.e., 10% of people diagnosed with a severe mental illness), of which more than 5,000 people are admitted at long-stay wards or housing facilities in institutional setting, and approximately 16,000 people are living in sheltered accommodations (22, 23). This group of people has largely been neglected, traditional care approaches remained dominant, and health care models that incorporate a recovery-oriented approach are generally focused upon people who (with more of less support) are able to live in the community.

Most people who have received care in an institutional setting for years, live an isolated life, have little family contacts, and no perspective to move to a more independent situation (1). Common daily activities, such as doing groceries, cooking, laundry, but also small working activities, are frequently disrupted, managed by care workers, or performed in an institutional setting (10, 24). Living in an institution has a negative effect on service users, described already in 1976 by Barton as "institutional neurosis" (25). After a long history of crises, admissions, disappointments, and failed attempts to live more independently, service users perceive an institutional setting as a safe environment and accept the status quo. The fear for relapse and readmission also prevails among family members, who want their relative to be in a safe and stable environment. Taking steps toward recovery and more independency equals uncertainty and is often perceived as stressful. After having lived in long-term mental health facilities for decades, people do not believe that life outside a facility is possible (20).

Internationally, concerns about the quality of care in long-term mental health facilities have led to the development of an instrument to assess quality of care within long-term mental health facilities, namely, the Quality Indicator for Rehabilitative Care (QuIRC) (26). Studies using this instrument showed that a higher quality of care was associated with service users' autonomy and their experiences of care (27). Various interventions and rehabilitation approaches designed for people with complex and persistent mental health needs have been described in the literature. Examples are cognitive adaptation training [CAT; (28, 29)], individual placement and support [IPS; (30)], the Boston University approach to Psychiatric Rehabilitation (31), and wellness recovery action plan [WRAP; (32)]. In addition, research showed that focus on an expected maximum length of stay encourages people in their recovery and supports long-stay service users to move to a more independent setting (33).

Even though deinstitutionalization started relatively late in the Netherlands when compared to other countries, recovery-oriented interventions already gained some foothold in Dutch long-term mental health care (34, 35). However, until now, most recovery-oriented interventions and attempts to improve the quality of long-term mental health care focused on separate aspects of care instead of an integral approach to initiate a radical change in this sector. In line with the developments described in the literature and experienced in practice, various stakeholders in the Netherlands took the initiative to change the current approach in long-term mental health care. In an iterative process, mental health care professionals, service users, family members, policy makers, researchers, and other stakeholders from over 15 mental health care organizations in the Netherlands and patient and family associations collaborated to develop a new integral care model: the Active Recovery Triad (ART) model. This article presents the key characteristics of the ART model.

MATERIALS AND METHODS

The development of the ART model was an iterative process involving a number of steps. **Table 1** presents the steps of this development process.

First, an invitational meeting (January, 2014) was organized, to examine the need for change among stakeholders. One hundred and one people attended this meeting, including mental

TABLE 1 | The development process of the ART model.

Step	Activity	Date	Purpose	Involved people
1	First invitational meeting (1 day)	January 2014	Examine the need for change among stakeholders and formation of expert group	101 people, for example, mental health workers, policy advisors, managers, directors, researchers, peer workers, and family representatives
2	Meeting with expert group (2 days)	June 2014	Develop first outline of the model (vision and mission, target population, core elements, title, formation of writing team)	Expert group; 31 people of 14 different mental health care organizations, branch organization of service users and family organizations, and researchers
3	Writing team draws first outline of handbook	June 2014 to September 2014	Work out key characteristics and the vision and mission of the model into a handbook for professionals	Writing team, consisting of six people from the expert group (TvM, LvdM, YV, BB, BS, and JvW)
4	Second invitational meeting (1 day)	September 2014	Reflect upon the outline of the care model	67 people, for example, mental health workers, policy advisors, managers, directors, researchers, peer workers, and family representatives
5	Meeting with expert group (2 days)	December 2014	Investigate the perspectives of service users and family with regard to the ART model and secure these perspectives in the model development process	First session (morning) with five service user representatives or peer workers, five family representatives and four mental health professionals from the expert group. Second session with the total expert group (as described in step 2)
6	Writing team drafts first chapters of the ART handbook	December 2014 to April 2015	Draft first chapters of the ART handbook	Writing team (as described in step 3)
7	Third invitational meeting (1 day)	April 2015	Discuss the content of the handbook and exchange best practices	81 people, for example, mental health workers, policy advisors, managers, directors, researchers, peer workers, and family representatives
8	Writing team develops draft of ART handbook	April 2015 to November 2015	Work out the ART handbook in total	Writing team (as described in step 3)
9	Fourth invitational meeting (1 day)	November 2015	Collect feedback on the ART handbook, in order to finalize it	71 people, for example, mental health workers, policy advisors, managers, directors, researchers, peer workers, and family representatives
10	Publication of ART handbook	June 2016		

health workers, policy advisors, managers, directors, researchers, peer workers, and family representatives, all affiliated with the long-term mental health care. In the meeting, it was concluded that a recovery-oriented model of care was necessary for service users in need of long-term mental health care. Workshops were organized regarding subjects considered important for long-term mental health care (e.g., recovery, self-management, employment, involvement of family, intensive care, and lifestyle). A report describing a national plan of action aimed to improve care for people with severe mental illness was used as source of inspiration (10). At the end of the meeting, an expert group was formed to develop the first outline of the model.

The expert group consisted of 31 people from 14 different mental health care organizations, a representative of the branch organization of service users and family organizations, and researchers in the field of mental health care. During a 2-day meeting (June, 2014) the vision and mission of the model were established, the target population of the care model was defined, and core elements of the model were described. Moreover, the title of the model was determined: active recovery triad (ART). At the end of the meeting, a writing team was formed consisting of six people from the expert group in order to work out the key characteristics and the vision of the new care model into a handbook for professionals (TvM, LvdM, YV, BB, BS, and JvW).

The outcomes of the 2-day meeting were presented during a second invitational meeting (September, 2014). Sixty-seven people attended this meeting (e.g., mental health workers, policy advisors, managers, directors, researchers, peer workers, and family representatives). The goal of this meeting was to reflect upon the outline of the care model. Six topics were discussed in small groups: namely, peer support, a model fidelity scale, professional and personal values working with the ART model, enlarged passion of care workers, paradigm shift in mental health care, and what we can learn from other countries. During this meeting, the need for an increase in service user and family perspectives in the process of model development became apparent.

In order to investigate the perspectives of service users and family with regard to the ART model and secure these perspectives in the model development process, a second 2-day meeting was organized (December, 2014). This meeting commenced with a morning session in which five service user representatives or peer workers, five family representatives, and four mental health professionals from the expert group reflected upon the ongoing ART model development from their own perspectives. The conclusions of this meeting were integrated into the second 1.5-day meeting, in which the total expert group defined seven steps in care important for the ART model and created an outline for a model fidelity scale.

After the second invitational meeting, the writing team drafted the first chapters of the ART handbook. These chapters were sent to the attendants prior to a third invitational meeting that 81 people attended (April, 2015). During this meeting, the content of the first chapters of the handbook were discussed in small groups, and experiences with best practices in the field of long-term mental health care were exchanged.

The fourth and last invitational meeting took place in November, 2015. During this meeting, the draft version of the ART handbook was presented. The aim of the meeting was to collect feedback in order to finalize the handbook. Seventy-one attendants were able to indicate the topics they still missed in the handbook. The three main topics that were mentioned by the attendants were (1) provide information on available knowledge regarding recovery, (2) focus more on how to reduce loneliness among service users, and (3) concretize the added value of ART to clinical practice as well as how to implement the model in practice. In addition, workshops in small groups were organized to fine tune the content of the different chapters of the handbook. Based on this input, the writing team finished the ART handbook, which was published in June, 2016 (17).

No ethical approval was necessary, since this manuscript describes a development process in care practice rather than empirical research involving human subjects.

RESULTS

ART is an acronym for Active Recovery Triad. It entails an integral care model for long-term mental health care aiming at recovery for people with serious mental illness (SMI) (17). In this section, the target service user group, the ART model, and practical guidelines of the model will be described.

Target Group

The target service user group of ART are persons of 18 years or older, diagnosed with SMI (such as bipolar disorder, mood disorder, schizophrenia, or psychotic disorder, whether or not in combination with substance abuse) and cope with serious mental and social consequences of their disorder. The impairments of people included in the target group of ART follow a chronic course and people have faced multiple unsuccessful attempts toward more independence and recovery. They are currently dependent on 24-h care and support in either a long-term clinical ward, residential facility, or supported accommodation. There are no further exclusion criteria, such as substance abuse.

The ART Model

Active

The first core principle of the model is an emphasis on active engagement of all agents in the triad: care workers, service users, and significant others. Service users should be active agents in the recovery process, including their options for treatment and living accommodation (18). An anticipated timeframe for the duration of stay has been demonstrated to be positively associated with successfully leaving long-term mental health settings, presumably since this improves a goal-directed treatment and support (33). The timeframe should be long enough to work on small steps in recovery, but short enough to prevent chronic hospitalization. Therefore, consensus was reached upon a timeframe of 3 years in the art model, which was regarded as optimal by stakeholders involved in the development process. In case of insufficient recovery to move to more independent living after 3 years, an evaluation of the provided care and rehabilitation is essential to reconsider the treatment and rehabilitation plan. This evaluation should be performed with a third independent party, for example, an independent organization providing consultation and expertise, to ensure critical evaluation, and provide new insights into the possibilities of the treatment and rehabilitation plan.

Recovery

For service users of long-term facilities, the concept "recovery" is often unknown, or, when associated with full remission of symptoms, perceived as not feasible. Therefore, it is important to introduce the actual meaning of the concept of recovery and empower service users to pursue steps toward recovery. The expertise of peer workers to create this awareness among service users and family is crucial (36, 37). The ART model distinguishes four dimensions of recovery, namely, recovery of health, recovery of personal identity, recovery of daily functioning, and recovery of community functioning (38). Regardless of dimension, a paradigm shift is necessary toward thinking in terms of strengths and possibilities rather than in problems. This accounts for care workers, but also for service users and significant others. The first-dimension recovery of health refers to physical as well as mental health and the intertwinement between these two, including attention for lifestyle, polypharmacy, and general well-being of the service users. Important is the cooperation between professionals, such as mental health workers, general practitioners, dentists, etc. The second dimension captures recovery of identity, involving the quest of (re)discovering someone's identity and exploring their life story, which is of great importance in order to (re)gain autonomy. Knowledge and experiences of family and significant others can contribute to the life story of service users. The third dimension entails recovery of daily functioning and refers to supporting and stimulating service users as much as possible to become more self-reliant when it comes to daily tasks like cooking, cleaning, grooming, etc. Care workers should be aware not to manage common daily tasks for service users, but together search for more independence. Important is the specific attention for daily activities and a healthy day–night cycle. The last dimension is recovery of community functioning and refers to the importance of participation and obtaining a social role in society, for example, cooperation with the community in terms of existing initiatives instead of separate activities in institutional setting. In literature, several rehabilitation and psychosocial interventions are described that can contribute to these dimensions of recovery and can be introduced in the context of ART. Examples are the wellness recovery action plan [WRAP (32), cognitive adaptation training (CAT) 28, 29], illness management and recovery (IMR) (39), (peer supported) open dialogue (40), and individual placement and support (IPS) (30) [see for an overview: (34, 35)].

Triad

The third principle of the ART model refers to the triad of the mental health workers, the service user, and significant others (family, friends, acquaintances from the past, neighbors, etc.). When contact with family or significant others is limited or absent, care workers should support service users to identify who was important for them in the past. As the family association involved in the development of the ART model pointed out: "*almost always there is a moment in time that can be recognized as the moment the contact between service user and family was seriously damaged or abandoned altogether.*" Together with the service user, care workers should explore why this contact was disrupted and help to restore this contact, if necessary, with the help of a family peer worker. The triad should be active on three different levels within the mental health organization. First, cooperation within the triad is important on the level of the individual service user, so with regard to the therapeutic relationship. Second, the triad should be represented at the level of the team, that is, the perspective of peer workers and family peer workers should be included in the team process. Finally, on the organizational level, service users and family members should be involved in policy development and organizational change.

Practical Guidelines and Model Fidelity Scale

In the ART handbook, the three core principles of ART are translated into practical guidelines (17). In order to structure the care process, seven steps are defined.

The first step is an intake meeting (1), where the indication criteria of ART are examined, and the personal story of the service user is explored. Before admission, it is discussed whether ART is the warranted department and if all recommended (evidence-based) treatment options have been considered. Establish and maintain contact with the service user, building a relationship of trust (2) is important from the start and a Care Planning Meeting (CPM) is organized within the first week of admission (3), in order to discuss treatment, support, and interventions in alignment with the personal goals of the service user and why previous (rehabilitation) treatments have been unsuccessful. This CPM needs to be organized every 6 months. Family and significant others should be involved in these meetings, and if contact is minimal or absent, focus should be on restoring this contact (4). The concept of recovery is unfamiliar for the majority of the service users and should be introduced and explained to service users and their significant others (5). The next step is defining the needs, strengths, and wishes of the service user (6) and the formulation of personal recovery goals. This is the basis of a treatment and rehabilitation plan (7), to structure the care, support, and recovery interventions. At least every 6 months, during the CPM, the personal recovery goals are evaluated, and new goals might be formulated, based on the needs, wishes, and recovery process of the service user.

These seven steps provide guidance to professionals on how to work with service users on the four dimensions of recovery. The steps can be considered as a practical elaboration of the basic care process, but do not necessarily need to be performed in this specific order. Additionally, care workers are free in their manner of adoption of these steps as well as the tools and methods they deem appropriate. Of course, the wishes and needs of service users should be the key driver. Recovery oriented care is the basis of care practice, which is not only visible in these practical steps but also in the contact between care workers, service users, and significant others, the attitude of care workers, the vision of the team, and the culture within the organization.

The ART model is operationalized into a model fidelity scale, describing all components important for the ART model in a quantitative way: "the ART monitor." The instrument consists of 51 items, subdivided into nine domains: (1) team structure, (2) team process, (3) recovery-oriented care and treatment, (4) other principles of recovery-oriented care and treatment, (5) organization of care, (6) professionalization, (7) architectural design, (8) safety, and (9) legislation regarding coercion. The ART monitor can be used to measure the degree of adherence to the ART model within a team by means of audits, performed by independent auditors. Auditors can be professionals of different disciplines (e.g., peer workers, family representatives, social workers, nurses, nurse practitioners, psychiatrists, and managers) who received a training on how to conduct an audit. Based on a 1-day audit, the auditors score the ART monitor. The items of the ART monitor can be scored on a five-point Likert scale based on the degree of compliance to the ART model, ranging from 1 (not compliant) to 5 (fully compliant). **Table 2** provides an overview of the nine domains accompanied by some examples of the items within the instrument.

The ART handbook and the model fidelity scale are useful tools for professionals in order to implement the ART model in practice and can support the team in deciding which concrete steps are necessary to improve care. A large national research project took place on validating the model fidelity scale in order to ensure a valid and reliable tool to measure the degree of adherence to the ART model in a team. Currently, a manuscript of this study is in preparation.

DISCUSSION

The active recovery triad (ART) model is a framework for Dutch long-term mental health care, especially for the low-volume high-need group of people with SMI who are admitted for a long time (17). ART combines the focus on recovery with the notion of active cooperation in the triad of professionals, service users, and significant others. Working with the ART

TABLE 2 | Domains of the active recovery triad (ART) monitor and examples of items.

Domain	Example of items
1. Team structure	Team composition Peer worker and family peer worker
2. Team process	Vision/working methods Hospitality and presence
3. Recovery oriented care and support	Needs, strengths, and wishes Recovery interventions on four levels
4. Other principles of recovery-oriented care and support	Somatic care Dual diagnosis
5. Organization of care	Cooperation with FACT and other outpatient care teams Care process and consultation
6. Professionalization	Reflection Team spirit
7. Healing environment	Healing environment Conditions of housing accommodations
8. Safety	Conflict control and personal safety Cooperation agreements concerning safety
9. Reduction of coercion	Evaluation of coercive measures

model requires a variety of disciplines within the team, a critical evaluation of the care and support that is available for service users, a healthy and recovery supporting living environment, and an increase in variety of treatment and (evidence-based) rehabilitation interventions. This change is needed in order to provide the group service users in long-term mental health care-tailored support, with tools to take steps in their recovery process.

The development of the ART model is in line with the recovery movement and the focus on rehabilitation for people with SMI that started in the mid-twentieth century (1–3). Especially the focus on personal recovery as an important process in addition to clinical recovery is in agreement with international literature (3, 41). In other countries, comparable developments have taken place, for example, the community care units (CCUs) in Australia, especially the Transitional Residential Rehabilitation type (42, 43). CCUs are facilities located within the community where 24-h care and support are provided by a multidisciplinary team. CCUs resemble the ART model in the aim to assist long-stay service users to more independent living, the focus on recovery, the close cooperation with resources in the community, and the focus on a temporary stay. However, literature regarding CCUs describe facilities in the community rather than an integral care model as ART, which is based on an underlying vision and core principles (42–45). The ART model can be implemented in teams operating within the community but also teams situated at large institutional grounds, to improve the situation in this setting. In addition, the ART monitor enables teams and mental health organizations to measure the degree of adherence to the ART model, whereas CCUs are not explicated in a model fidelity scale. This is important, as it provides the teams and organizations with a framework that supports them in the identification of concrete improvement areas and makes improving quality of care more feasible and within reach.

Comparable developments around recovery-oriented care took place in the UK (46). An example is the REFOCUS intervention aiming to promote personal recovery of service users (47). It includes recovery-promoting relationships, by offering training for staff on personal values, promoting knowledge, and developing coaching skills. It also focuses on understanding service users' values and treatment preferences, identifying strengths and abilities and supporting personal goals. However, the REFOCUS intervention mainly involves care practice aiming to improve personal recovery of service users, whereas the ART model has a broader aim and also sets standards on organizational and policy level, such as care organization, team structure, and housing facilities. Another established instrument in the UK, similar to the ART model, is the QuIRC developed to assess the quality of long-term mental health facilities (48). When comparing the ART model with the principles of the QuIRC, we see various similarities (48). Important parallels are the focus on a broad definition of recovery, the emphasis on the involvement of service users in decision making and policy development, a safe and homely environment, the cooperation with organizations in the community, and a certain team composition and competencies of the team. However, some differences come to the fore as well. First, in terms of the development process, the origin of the ART model lays within the mental health practice, the model was developed in close collaboration with a large group of stakeholders, and connected to this process, the model fidelity scale was established. The QuIRC was developed based on key principles of rehabilitation described in literature, instead of an underlying care model to implement in practice (26). In addition, whereas the QuiRC mentions the involvement of family, the ART model considers family and significant others as active partners in the triad. This means that they should not only be updated about the status of the treatment, but should actively be involved in decision making on the individual level, and policy development on team and organizational level. Aspects less visible in the ART model, but explicitly addressed in the QuIRC are the attention for sexual health, diets and healthy meals, physical disabilities of service users, and the adaptation of the living environment to these disabilities; these aspects might be relevant for further development of the ART model.

To conclude, the ART model is in line with comparable international developments regarding recovery-oriented care. The ART model is distinctive from other care models and interventions in its extensiveness as a care model for all aspects of care, including recovery-oriented interventions, care organization (in terms of policy as well as more practical organizational issues), and cooperation with significant others and the community. In addition, the ART model has already become widely accepted in Dutch mental health care since the publication of the handbook in 2016. Part of the acceptance of the ART model can be ascribed to the involvement of many stakeholders, thereby incorporated perspectives of mental health professionals, service users, family, and significant others. A large number of organizations throughout the country are in the process of implementing the model into practice, using practical tools the ART handbook provides and the model fidelity scale to support this implementation process. Twenty Dutch mental health organizations participated in research on the validity and reliability of the ART monitor that was conducted between 2017 and 2019. To date, the impact of ART within Dutch care practice is still expanding since more organizations start to implement the model and are also connected to the national ART research. First indications suggest that some service users take steps in their recovery process, even though care workers were initially not convinced this would be possible. However, these effects are in need of further investigation. Therefore, an effectiveness study of the ART model on quality of care, recovery, and autonomy of service users and cooperation in the triad is underway.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

AUTHOR CONTRIBUTIONS

LM, JW, TM, BB, BS, and YV took the lead in developing the ART model. LZ wrote the manuscript. LM, JW, GW, and YV participated in drafting and revising the article. All authors contributed to and agreed upon the final version of the manuscript.

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SYSTEMATIC REVIEW
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Essential Elements That Contribute to the Recovery of Persons With Severe Mental Illness: A Systematic Scoping Study

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Introduction: There is an increasing emphasis on recovery-oriented care in the design and delivery of mental health services. Research has demonstrated that recovery-oriented services are understood differently depending on the stakeholders involved. Variations in interpretations of recovery lead to challenges in creating systematically organized environments that deliver a consistent recovery-oriented approach to care. The existing evidence on recovery-oriented practice is scattered and difficult to apply. Through this systematic scoping study, we aim to identify and map the essential elements that contribute to recovery outcomes for persons living with severe mental illness.

Methods: We used the Arksey & O'Malley framework as our guiding approach. Seven key databases (MEDLINE, PubMed, CINAHL/EBSCO, EMBASE, ProQuest, PsycINFO, and Google Scholar) were searched using index terms and keywords relating to recovery and severe mental illness. To be included, studies had to be peer-reviewed, published after 1988, had persons with severe mental illness as the focal population, and have used recovery in the context of mental health. The search was conducted in August 2018 and last updated in February 2020.

Results: Out of 4,496 sources identified, sixty ($n = 60$) sources were included that met all of the selection criteria. Three major elements of recovery that emerged from the synthesis ($n = 60$) include relationships, sense of meaning, and participation. Some sources ($n = 20$) highlighted specific elements such as hope, resilience, self-efficacy, spirituality, social support, empowerment, race/ethnicity etc. and their association with the processes underpinning recovery.

Discussion: The findings of this study enable mental health professionals to incorporate the identified key elements into strategic interventions to facilitate recovery for clients with severe mental illness, and thereby facilitate recovery-oriented practice. The review also documents important gaps in knowledge related to the elements of recovery and identifies a critical need for future studies to address this issue.

Keywords: recovery, rehabilitation, scoping review, elements, mental health, severe mental illness (SMI), outcome, clinical practice

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INTRODUCTION

The concept of recovery-oriented care has gained prominence as a philosophical underpinning of the design and delivery of mental health services (1, 2). The recovery approach challenges previously held paternalistic beliefs regarding treatment and prognosis, allowing for a more individualized, holistic approach that respects personal definitions of recovery (3). The literature suggests that recovery is both a process and an outcome, with symptom remission as only one of many possible directions a personal experience with mental illness can take (4). Research has demonstrated that recovery-oriented services are understood differently depending on the stakeholders involved (5, 6). Individuals with mental illness often refer to recovery as a personal transformative journey (7, 8), clinicians discuss recovery in terms of measurable outcomes (9, 10), and decision-makers reference recovery as a vision or guiding philosophy (1). These variations in priorities highlight the lack of common emphasis surrounding recovery as an approach to care, which allows for lack of consistency in the delivery.

The recovery journey is often described as facilitated by a collection of qualities, including holistic, non-linear, and strengths-based, among many others (11, 12). Several theoretical models have been developed that outline characteristics identified in the recovery literature. These frameworks are meant to resolve the lack of clarity that existed previously. The current models contain upwards of five (CHIMES) to 10 (Substance Abuse and Mental Health Services Administration, SAMSHA) components, which are further split into related elements, highlighting aspects such as hope, empowerment, and meaning (10, 13). These models, while helpful as theoretical frameworks, present a challenge in their practical implementation by organizations and clinicians due to a gap between what is often a conceptualization (i.e., hope) and pragmatic capabilities. This gap has allowed providers to advertise recovery-oriented services without necessarily describing what such services entail. The term recovery has the potential to be commandeered by various programs in order to relabel traditional approaches to care (3). Variations in interpretations of recovery lead to challenges in creating systematically organized environments that deliver a consistent recovery-oriented approach to care (2, 6).

In the absence of a pragmatic understanding of recovery, the practical applications may be limited based on the attitude and knowledge of the individual service provider (8, 14, 15). The purpose of this scoping study is to identify and map the essential elements that contribute to recovery for individuals living with severe mental illness. In doing so, we endeavor to create a practical framework that will enable mental health professionals to better understand and incorporate these key elements into their strategic efforts to support clients, in an attempt to narrow the current gap in knowledge translation between knowing and doing.

METHODS

We followed Arksey & O'Malley's scoping review strategy to design and conduct this study (16). This strategy consists of five main steps: (a) identifying the research question, (b) identifying relevant studies, (c) selection of critical articles, (d) reviewing and charting the data, and (e) collating and summarizing the results. This strategy allowed us to identify key concepts, types of evidence, and gaps in the research literature by systematically searching and synthesizing existing knowledge to inform mental health care practice. We also incorporated recommendations of Peters and colleagues for systematic scoping review by reporting the operational definition of "population," "concept," and "context" of the review, and providing information on search strategy, inclusion criteria, and data synthesis (17).

Identifying the Research Question

The following research question guided this systematic scoping study: What are the essential elements that contribute to recovery outcomes for individuals living with severe mental illness? For this study, the population was individuals with severe mental illness. Severe mental illness was defined as "a mental, behavioral, or emotional disorder resulting in serious functional impairment, which substantially interferes with or limits one or more major life activities" (18). We defined the concept of recovery as "*… a deeply personal, unique process of changing one's attitudes, values, feelings, goals, skills, and roles. It is a way of living a satisfying, hopeful, and contributing life even with limitations caused by illness*" [11, p. 15]. The spatial and temporal context for this review is studies from across the globe that are related to the recovery of individuals with severe mental illness and were produced from 1988 (one of the first published articles to reference "Recovery" as a concept) (19).

Identifying Relevant Studies

To identify pertinent journal articles, we developed our search strategy in consultation with a health sciences research librarian. We used seven key databases, including MEDLINE, PubMed, CINAHL/EBSCO, EMBASE, ProQuest, PsycINFO, and Google Scholar, to locate the relevant literature. The keywords used to identify relevant studies are presented in **Box 1**. Please note that these keywords varied to some extent depending on the different indexing schemes of respective databases. The search was conducted in August 2018 and last updated in February 2020.

BOX 1 | Search terms.

(severe mental illness OR chronic mental illness OR serious mental illness OR persistent mental illness OR psychosis OR schizophrenia OR bipolar disorder OR depression OR personality disorder OR trauma disorders OR anxiety) AND (recovery OR psychosocial rehabilitation OR psychiatric rehabilitation) AND (theor$ OR framework OR model OR dimension OR paradigm OR concept$ OR frame of reference OR approaches OR oriented services OR oriented interventions OR themes OR processes OR outcomes)

Study Selection

We applied inclusion and exclusion criteria to the studies that emerged in the initial search, as documented in **Table 1**. We

TABLE 1 | Inclusion and exclusion criteria.

Included when:	Excluded when:
• Specified study population: adults with severe mental illness or chronic mental illness or serious mental illness or persistent mental illness or psychosis or schizophrenia or bipolar disorder or depression or personality disorder or trauma disorders or anxiety. Comorbid conditions, in addition to the conditions listed, were acceptable. • Were produced from 1988 (Article by Pat Deegan- The Lived Experience of Rehabilitation was one of the first published articles to reference "Recovery")	• Related to children with severe mental illness. • The article focused solely on clinical (medicine-related) or surgical interventions, dementia or intellectual impairment or developmental disability or learning disability or substance use or substance abuse or addictions or substance-induced psychosis or clinical condition induced delirium
• Were peer-reviewed articles.	• Full text not available in the English language
• Were focussed on aspects of recovery, psychosocial rehabilitation, or psychiatric rehabilitation in the mental health field	• Used recovery in a context other than mental health

followed a two-stage screening process to select studies that matched our objective. The first stage involved reading the titles and abstracts, and the second stage included reading the full-text articles. Two independent reviewers screened the titles and abstracts, and the selected articles were divided within the research team for full-text review. Any discrepancies were resolved during the monthly consultation meetings of the research team. The final list of articles was compiled into an MS–Excel file/spreadsheet for data charting. The information on a number of sources identified, screened, found eligible, and finally included in the study is presented in the PRISMA flowchart (**Figure 1**). The PRISMA 2009 checklist can be found in the **Supplementary Material**.

Data Charting

The descriptors used for data charting included authors, journal title, time and location of the study, study design, study population, sample size, the purpose of the study, key outcomes or results, and any other data relevant to our study objectives. The descriptor "not available" was used if any of the required information was missing from the source. All the authors completed data charting in the spreadsheet.

Data Synthesis and Reporting

After data charting was completed, the research team prepared a descriptive numerical summary and conducted a qualitative thematic analysis to present the key findings of the study. A summary of descriptive findings was collated from the spreadsheet, and each team member coded them independently using Braun and Clarke principles of thematic analysis (21). Later, all team members listed their codes and similar codes were clustered to key themes inductively in two consecutive team meetings. Details on study design, study population, sample size, time and location, and purpose of the study are given in the form of numerical summary, while critical results and outcomes are reported in the way of thematic synthesis. We are reporting this study using the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist (22).

RESULTS

Out of 4,496 sources identified, 601 references were extracted from seven bibliographic databases. Sixty ($n = 60$) sources were finally accepted that met all the selection criteria.

Characteristics of the Records Included in the Study

Of the 60 sources that were included in the final review, the majority were empirical, comprising qualitative studies ($n = 32$), followed by quantitative ($n = 21$), and mixed methods ($n = 3$). The non-empirical records were primarily literature reviews ($n = 4$). The records presenting empirical research covered a broad spectrum of methodologies (e.g., quantitative, qualitative, and mixed), designs (e.g., longitudinal, cross-sectional, randomized controlled trial, systematic reviews, and case study) and data collection strategies (e.g., interviews, focus groups, ethnographic observations, and surveys). **Table 2** provides details on study location, study type, participant population, sample size, and study focus.

Almost all of the sources stemmed from high-income countries. Many studies were conducted in the continent of North America ($n = 25$) [United States of America ($n = 16$) and Canada ($n = 9$)], Europe ($n = 16$), Australia ($n = 7$), and the United Kingdom ($n = 7$) followed by two studies from Israel, one from India, one from South Korea, and one from China. Just under half of the included articles ($n = 27$, 45%) were published before 2010 (1999–2010), while 55% ($n = 33$) were published after 2010 (2011–2019). Forty-seven percent of included studies ($n = 28$) were published within the last 5 years.

Of the total studies, 42% focused broadly on severe mental disorders ($n = 25$). Most did not specifically mention individual diagnoses to protect the privacy of their participants. A number of sources (32%) focused on or had participants diagnosed with schizophrenia or schizophrenia spectrum disorders ($n = 18$), followed by depression ($n = 5$), psychosis ($n = 9$), and bipolar disorders ($n = 5$). Of the 60 studies included, 95% of studies ($n = 57$) included direct perspectives of individuals with severe mental illness, while three studies focused on the caregiver, expert, and staff experiences, respectively.

The majority of studies ($n = 33$, 55%) focused broadly on meaning, elements, or aspects of recovery for individuals with severe mental disorders. Some studies ($n = 20$, 33%) focused on the relevance of specific elements such as hope, resilience, self-efficacy, spirituality, social support, race/ethnicity etc. and their association with the processes underpinning recovery. A

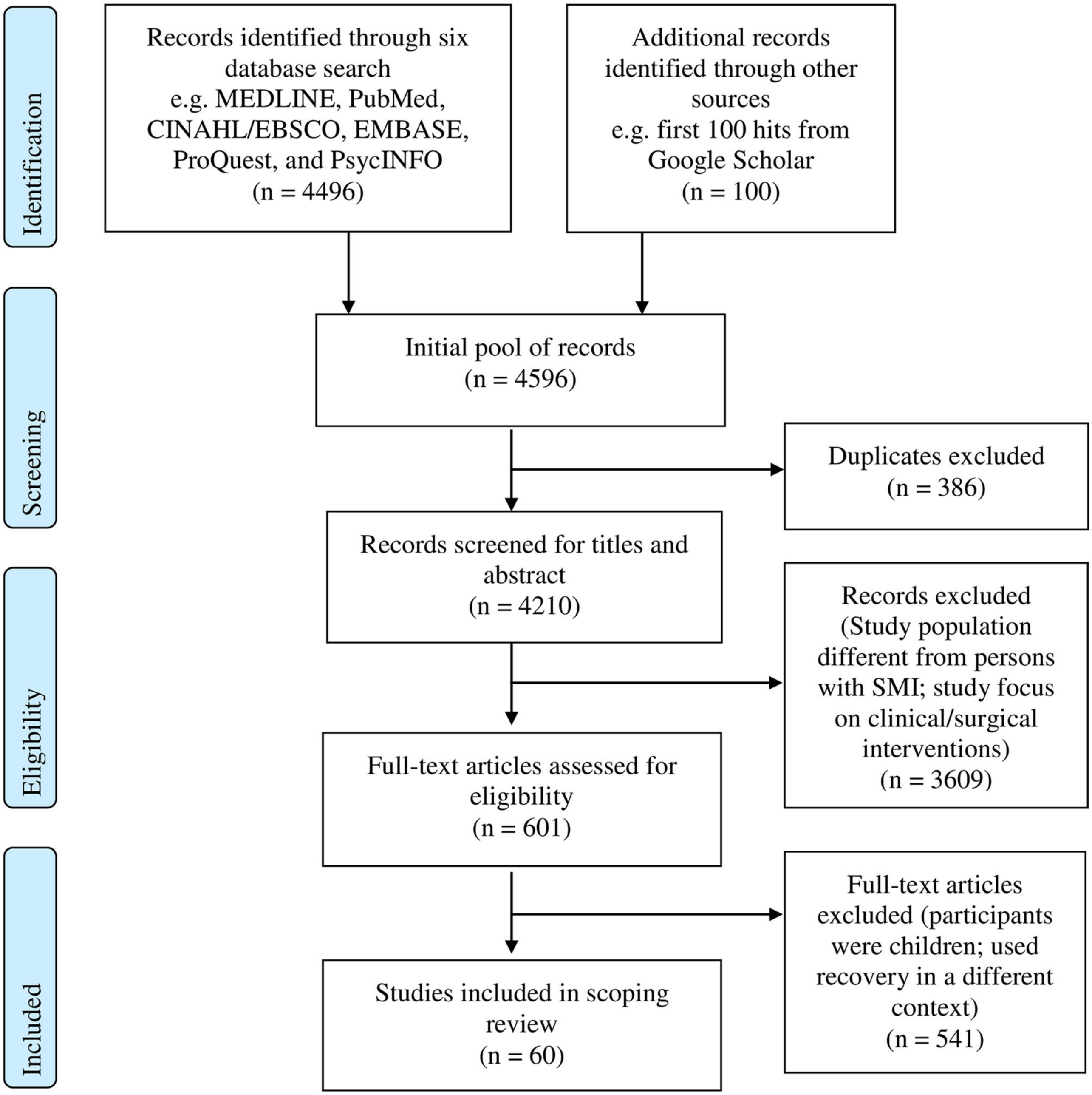

FIGURE 1 | PRISMA flow chart. SMI, Severe mental illness. Source: (20).

few studies ($n = 8$, 13%) examined various aspects of treatment approaches directed toward recovery.

Thematic Analysis/Qualitative Synthesis

Through qualitative analysis of the data (see Methods section), the research team developed consensus on the three main elements contributing to recovery from severe mental illness: relationships, sense of meaning, and participation (**Figure 2**). The research team also reached a consensus on eight sub-elements within these three core elements. Each of the elements and sub-elements is discussed here:

Relationships

A number of studies ($n = 41$, 68%) highlighted the importance of supportive relationships in facilitating recovery from severe mental illness. Our analysis generated three relationship subthemes: therapeutic relationships, relationships with significant others, and relationships with the broader community. Please note that these three

TABLE 2 | Characteristics of records included in the study ($n = 60$).

References	Location of study	Study type	Study population	Sample size	Focus of article
Aldersey and Whitley (23)	Canada	Qualitative Study	Adults with a diagnosis of severe mental illness	54	Perceived barriers and facilitators to recovery related to family
Andresen et al. (24)	Australia	Literature review	Mental health consumers	36 articles	Meaning of recovery through client experience
Anthony (25)	USA	Qualitative study	Individuals who had a self-reported diagnosis of severe mental illness	10	Experiences of helping partnerships that facilitate recovery
Bonfils et al. (26)	USA	Randomized controlled trial	Individuals with Schizophrenia	45	Recovery and how clients' words reflect hope
Bonfils et al. (27)	USA	Quantitative study	People with schizophrenia spectrum disorder, bipolar disorder and major depressive disorder	167	Association between parenthood and recovery
Borg and Kristiansen (28)	Norway	Qualitative study	Persons with severe mental illness	15	Recovery-oriented professionals
Chinman et al. (29)	USA	Qualitative study	Three clients served at the Connecticut Mental Health Center	3	Understanding the most useful aspects of ACT teams for recovery
Connell et al. (30)	Australia	Qualitative study	Young adults (ages 19–24) following the first episode of psychosis	12	The extent to which a single psychotic episode diminishes self
Davidson et al. (31)	USA, Italy, Norway, Sweden	Qualitative study	Individuals who have experienced recovery from psychosis	12	Role of various factors in processes of recovery
Firmin et al. (32)	USA	Mixed method study	Adults diagnosed with schizophrenia-spectrum disorders	46	Helping the behaviors of those diagnosed with SMI
Forchuk et al. (33)	Canada	Qualitative study	Individuals with symptoms of psychosis	10	Changes in perceptions of recovery with time
Giusti et al. (34)	Italy	Quantitative study	Inpatient adults diagnosed with schizophrenia	76	Predictors of recovery
Griffiths et al. (35)	UK	Quantitative study	Adults with diagnoses including depression, schizophrenia, bipolar disorder, personality disorder, and anxiety disorder	181	Examining recovery after a person moves from an inpatient psychiatric setting into a residential program
Gumley and Macbeth (36)	UK	Quantitative study	Individuals with psychosis	29	Development of a narrative-based measure of compassion concerning recovery
Hamm et al. (37)	Australia	Mixed method study	Patients in primary care experiencing depressive symptoms	564	Role of inner resources (primarily resilience) in the recovery of depressive symptoms
Hancock et al. (38)	Australia	Qualitative study	Adults with severe mental illness enrolled in a recovery program	13	Understand early-stage mental health recovery experiences
Hasson-Ohayon et al. (39)	Israel	Quantitative study	Persons with a diagnosis of serious mental illness	107	Association between insights and recovery
Hasson-Ohayon et al. (40)	Israel	Quantitative study	Adults diagnosed with schizophrenia or schizoaffective disorder	80	The connection between having a sense of meaning and recovery
Hoffmann and Kupper (41)	Switzerland	Quantitative study	Individuals with schizophrenia in the vocational rehab program	75	Psychosocial recovery for schizophrenia
Hungerford and Richardson (42)	Australia	Qualitative study	Caregivers	10	Family engagement and recovery
Hyde et al. (43)	Australia	Qualitative study	Patient with mental illness	8	Consumers' lived experience of inpatient care
Jerrell et al. (44)	USA	Quantitative study	Individuals with schizophrenia, depression, bipolar disorder, schizoaffective disorder etc.	459	Meaning and elements of recovery; and psychometric elements to measure recovery
Jorgensen et al. (45)	Denmark	Quantitative study	Individuals with schizophrenia	101	Relationship of subjective elements and objective elements of recovery.
Jose et al. (46)	India	Systematic review	Schizophrenia	25 studies	Consumer perspectives on recovery from Schizophrenia
Kidd et al. (47)	Canada	Qualitative study	Racialized women with severe mental illness	6	The intersection of gender and ethnicity with the recovery from mental illness

(Continued)

TABLE 2 | Continued

References	Location of study	Study type	Study population	Sample size	Focus of article
Kilbride and Pitt (48)	UK	Qualitative study	Persons with psychosis	7	Process of recovery
Kwok (49)	Canada	Qualitative study	Bipolar disorder	1	Limitations of the clinical model of recovery
Lakeman (50)	Ireland	Quantitative study	Experts by experience	31	Recovery focussed competencies
Liberman et al. (51)	USA	Qualitative study	People with schizophrenia	55	Operational definitions of recovery
Liberman and Kopelowicz (52)	USA	Narrative study	People with schizophrenia	Not applicable	Elements of recovery
Markowitz (53)	USA	Quantitative study	Persons with mental illness in consumer-run self-help groups and outpatient settings	610	Examine social-psychological components in the recovery process
Mezzina et al. (54)	Italy	Qualitative study	Persons with psychosis	Not reported	Role of social factors in recovery from psychosis
Mihaljevic et al. (55)	Croatia	Quantitative study	Adults in inpatient or outpatient treatment for a depressive episode	99	Association between depression and spirituality
Murphy (56)	Not reported	Qualitative study	Individuals with serious mental illnesses	8	Meaning of recovery from psychosis
Myers (57)	USA	Qualitative Case study	Persons with schizophrenia	1 organization	Recovery-based mental health care
Nasser and Overholser (58)	USA	Quantitative study	Psychiatric in-patients with major depression	62	Potential benefits of support from family, friends, and spiritual beliefs
O'Keeffe et al. (59)	Ireland	Qualitative study	Individuals with first episode psychotic disorders	20	Experiences of service utilization and suggestions for change to improve recovery
Ouwehand et al. (60)	Netherlands	Qualitative study	Patients with bipolar disorders	10	Interpretation of religious and spiritual experiences during mania, depression and recovery
Park and Sung (61)	South Korea	Quantitative study	Individuals with Schizophrenia	60	Effects on helplessness and recovery of an empowering program for patients with schizophrenia
Ringer et al. (62)	USA	Quantitative study	Patients with schizophrenia	78	Subjective indicators of recovery
Rosa et al. (63)	Spain	Quantitative study	Individuals diagnosed with bipolar disorder	119	Functional recovery in two samples of people with bipolar disorder
Rouse et al. (64)	Canada	Qualitative study	Individuals with severe mental illness and organizational staff	78	Elements of recovery : Mechanisms and outcomes
Rudnick (65)	Canada	Literature review	Individual diagnosed with schizophrenia	Not reported	Philosophical framework on Essentials to recovery
Sapani (66)	UK	Literature review	Mental health staff and consumers	Not reported	Examine recovery and what principles are utilized in practice
Schön (67)	Sweden	Qualitative study	Adults diagnosed with psychosis, bipolar disorder and personality disorder	30	Understanding recovery from gender perspective
Schreiber (68)	Canada	Qualitative study	Women with Depression	70	Impact of depression for women
Sells et al. (69)	USA	Qualitative study	Individuals with severe mental illness	Not reported	Arenas of recovery
Shahar et al. (70)	UK	Quantitative study	People diagnosed with schizophrenia spectrum disorders	105	Role of dependency, self-criticism and efficacy in recovery
Thomas and Salzer (71)	USA	Quantitative study	Adults with serious mental illnesses	46	Correlation of peer-to-peer relationship with recovery-oriented outcomes
Tooth et al. (72)	Australia	Qualitative study	Individuals with schizophrenia	57	A consumer perspective on recovery from schizophrenia
Topor and Denhov (73)	Sweden	Qualitative study	Individuals with severe mental illness	58	Role of others in recovery
Torgalsbøen (74)	Norway	Quantitative study	Individuals with schizophrenia	50	Elements contributing to the recovery
Torgalsbøen and Rund (75)	Norway	Mixed method study	Individuals fully recovered from schizophrenia	6	Course and outcome of schizophrenia.

(Continued)

TABLE 2 | Continued

References	Location of study	Study type	Study population	Sample size	Focus of article
Tsai (76)	USA	Qualitative study	Individual with serious mental illness	1	First-hand experience of recovery
Tse et al. (77)	Hong-Kong	Quantitative study	Adults with bipolar disorder in remission	75	Psychosocial correlates of recovery stag
van Grieken et al. (78)	Netherlands	Qualitative study	Adults who recently recovered from depression	20	People's effort to recovery from depression
Warwick et al. (79)	UK	Qualitative Study	Adults previously diagnosed with bipolar disorder	12	Processes underlying recovery
Whitley (80)	Canada	Qualitative study	Adults living with severe mental illness	47	Relationship between ethnicity, culture, and recovery.
Williams and Collins (81)	Canada	Qualitative Study	Individuals with schizophrenia	15	Subjective experience of schizophrenia and recovery
Wood et al. (82)	UK	Q-methodology (literature review followed by qualitative interviews)	Individuals with psychosis	40	Recovery from psychosis

categories were not mutually exclusive, and each had substantial overlaps.

Therapeutic Relationships

Several studies included in our review ($n = 17$, 27%) reported that relationships with service providers impacted the experience and extent of recovery in individuals with severe mental illness (25, 28, 35, 37, 54, 69, 73, 76, 82). Individuals perceived therapeutic relationships, characterized by human qualities such as an attitude of equality, acceptance, empathy, respect, compassion, connection, collaboration, safety and confidence, as helpful in their recovery from schizophrenia (28, 59, 64, 75, 83). Studies also emphasized the role of the therapeutic relationship in kindling and sustaining hope as one of the major factors contributing to full recovery for persons diagnosed with severe mental illness (32, 75). In one model of recovery, clients considered strong and trusting relationships (between service providers, themselves, and their families) that supported their navigation of the mental health system, as essential to their improved mental health (29). Similarly, participants from another study described relationships with clinicians as more facilitative of recovery than the treatment being offered (67). For men, the perceived expertise of the professional and a sense of reciprocity were most important, while for women, trust, listening, and emotional support were more facilitative of recovery (67).

Relationship With Significant Others (Friends/Family)

Several studies ($n = 10$, 16%) found that reconnecting with family and friends was integral to the process of recovery for individuals with severe mental illness (33, 34, 43, 74). One study described the fostering of relationships, facilitated by opportunities to interact with others, develop social skills, and reduce isolation through building social networks, as a core mechanism of recovery (64). In a study involving individuals with depression, participants identified that remaining socially engaged with friends, family, and colleagues, who were informed of the impact of their experience of depression, was key to obtaining the support needed for recovery (78). Similarly, a few studies identified supportive family members or caregivers, who encouraged and positively reinforced the incremental progress of the individual, and were involved as per the choice of the individual, as a critical factor in long-term recovery outcomes for people with schizophrenia (23, 52). A study comparing support from friends and family found that support from friends or others outside of the family network may facilitate recovery from depression more than support from family, as participants' perceived family members as obligated to provide support (58). Thus, perceptions of support from friends or family may influence the recovery process differently (58). Another study found an association between interpersonal relationships, characterized by secure attachment, and participants' levels of hope and self-esteem, suggesting that secure attachments are related to recovery (62).

Relationship With the Broader Community

The research team identified one's relationship with the broader community as the third type of relationship critical to recovery from mental illness, as reported in 25% of the included studies ($n = 15$) (35, 40, 43, 54, 78, 81). Two studies described recovery as an interactive social journey, involving meaningful, inclusive social relationships, within which individuals exercise rights, encounter opportunities, and receive responses that either support or fail to support their social needs (54, 81). This study described peer support as a bridge toward social opportunities within the wider community and identified the sense of fellowship peer support provides as supportive of recovery (64). Other studies similarly identified peer relationships as key to supporting recovery (61, 72). Many studies described connecting to others, social functioning, and social relationships as important for recovering "coherence," reducing isolation, making meaning of experiences, and instilling hope (35, 58, 62, 82). One study, involving a group rehabilitation program, described a sense of belonging, or security, acceptance, and connection to others that

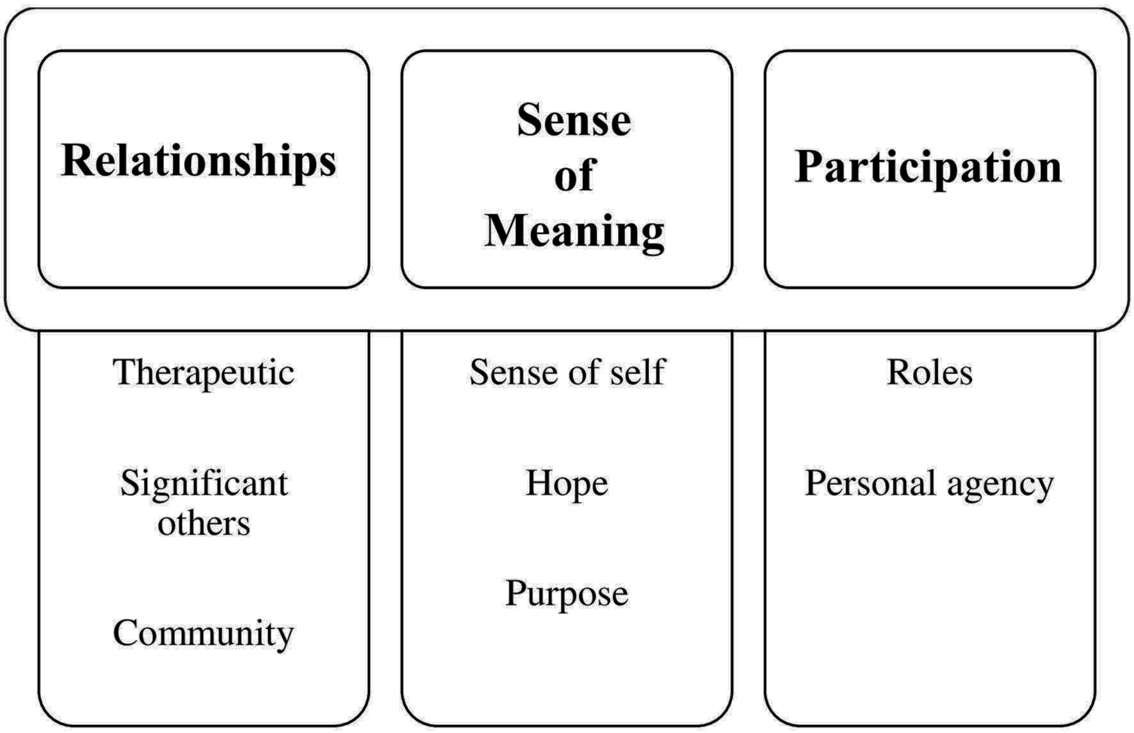

FIGURE 2 | Key themes—elements of recovery.

fosters a feeling that one is a part of a stigma-free community as a mechanism of recovery (64). Another study similarly identified stigma as a factor that impeded recovery through interfering with social inclusion in the community (72).

Sense of Meaning

Majority ($n = 49$, 82%) of the included studies described a sense of meaning as a facilitator of recovery from severe mental illness. During the qualitative synthesis stage, the research team divided a sense of meaning into three key elements: sense of self, hope, and purpose.

Sense of Self

Just under one-third ($n = 18$, 30%) of the included studies identified a "sense of self" as making an important contribution to recovery. However, each of these studies defined and examined "sense of self" differently. For example, one study involving individuals with severe mental illness ($n = 107$), suggested that enhancing a positive, clear, non-stigmatizing sense of self may lead to a positive recovery process (39). In a study that examined the experience of recovery from psychosis, recovery was seen as non-linear, occurring in stages, and encompassing physical, emotional, mental, and spiritual aspects of the person (33). Other studies found that building self-efficacy, self-sufficiency, self-acceptance, and reducing self-stigma was a critical recovery mechanism that involved helping individuals gain skills and feel more capable of, and confident in, acting independently and participating in society (31, 32, 40, 46, 64, 70, 79, 81, 84).

Studies seeking individuals' perspectives on recovery from severe mental illness identified personal agency as a key to recovery (41, 72, 78, 79). Factors described as contributing to personal agency included perceived determination to get better, optimism, taking responsibility to help themselves, and understanding, managing, and accepting their illness (41, 44, 72, 79). Another study described self-organization, an ongoing process of "self-creation and self-repair," as central to recovery in schizophrenia [(56), p. 273]. Participants from another study identified rebuilding the self through self-awareness and reconciling with the past as one of the important components of recovery (77). Other studies identified the acquisition of skills for daily living and self-management as contributing to recovery outcomes (55, 64).

Hope

A number of studies ($n = 21$, 35%) identified hope as a strong determinant of recovery (24, 26, 34, 40, 41, 43, 48, 77). Included studies conceptualized hope in different ways. Many studies described hope in terms of spirituality. Studies described faith as helping to generate and maintain hope in recovery and as providing comfort throughout the process (56, 75). A quantitative study, involving 99 patients with depression, identified higher spirituality as a stronger predictor of recovery (55). This study defined spirituality as a personal quest for a sense of purpose and meaning of life, rather than as religious affiliation. It identified domains of "wholeness and integration," "inner peace," and "hope and optimism" as the strongest contributors to the negative association between spirituality and depression (55). Other authors reported similar findings involving different populations (38, 46, 52, 67, 72, 74). For instance, studies involving a group of individuals diagnosed with psychosis or schizophrenia-spectrum disorders identified hope, along with a sense of self-agency, wellbeing resilience, and strength, as integral components of recovery (26, 30, 32, 38, 46).

Purpose

Several studies ($n = 10$, 17%) identified a "sense of purpose" as an element that contributes to recovery (24, 40, 43). Individuals with a severe mental illness described the "sense of purpose," generated from participating in the running of a clubhouse recovery program and contributing to shared goals, as a mechanism of recovery (64). Another study identified creating a sense of purpose as the most important aspect of recovery (48). This study, along with other studies, suggested that the development of self-esteem, agency, and active participation in life is an empowering process that both creates and is created by a sense of purpose (32, 46, 48, 53, 61). One study described empowerment as a gendered recovery process (67). It found that women described recovery as a process of regaining their "whole" identity, moving from a sense of oneself as the object of treatment to the perception that one is a subject, engaged in, and accepting of, the recovery process [(38), p. 563].

Participation

The research team divided participation into two sub-themes: roles and personal agency. Articles grouped within this theme described participation in meaningful roles within one's family and community (roles) and participation in one's life choices (agency) as critical elements contributing to recovery. Just under half ($n = 25$, 42%) of the included sources identified participation as an important recovery theme, of which 17 studies highlighted roles and eight studies highlighted personal agency.

Roles

A number of studies ($n = 17$, 28%) found certain roles to be associated with recovery from severe mental illness. Several studies described meaningful, helping, or productive roles as positively impacting the recovery journey of patients with severe mental illness (27, 32, 46, 76, 77, 82). Some of these studies explored the different life roles of their participants related to productive work such as employment, parenthood, volunteering, religious practice, or self-care (35, 46, 57, 60, 64, 66, 72, 78, 80). For example, one study found that gaining and maintaining employment was associated with financial stability, increased self-esteem, and empowerment (66). Decreased boredom, associated with employment, was also associated with an increase in meaningful activities, which was, in turn, associated with increased social interaction and feelings of inclusion (66).

A few studies also looked at the interplay of gendered roles, culture, and ethnicity and their influence on recovery (47, 49). A study examining the importance of enabling women to challenge assumptions related to roles, limitations, and rules considered this process as empowering women to make sense of their depression and to construct new lives (68). However, in another study, the authors argued that traditional gender roles advantaged women (67). The authors of this study found that greater acceptance of women as dependent on social supports, such as family, and reduced pressures for women to work and study, actually lessened the burden of role expectations and contributed toward recovery (67). In a qualitative study exploring the relationship between ethnicity, culture, and recovery ($n = 47$), all the ethnic groups identified progress in employment, social engagement, and community participation as facilitators to recovery while identifying stigma, financial constraints, and psychiatric hospitalization as barriers to recovery (80).

Personal Agency

Several studies ($n = 8$, 13%) identified active agency in one's recovery path, cultivated through opportunities to take an active role in treatment decisions and to choose to use services according to one's wants and needs, as a critical element of recovery from severe mental illness (31, 34, 35, 64, 76). One study referred to the personal agency as "self-directed empowerment" in discussions regarding the recovery of study participants with bipolar disorder (77). In a study on self-management in the recovery from depression, participants found that assuming an active and critical attitude toward the illness and service providers and using self-management strategies in their daily life such as goal setting, activity schedules, to-do lists, and distractions contributed to their recovery (78). In another study, participants shared that autonomous action helped them to become independent citizens rather than subjects of a paternalistic mental health care system (57).

DISCUSSION

This systematic scoping review aimed to identify and explore the essential elements of recovery to better guide practical clinical interventions. The authors approached this research through a functional lens with a focus on the practical application of theoretical knowledge to better support evidence-informed delivery of care. Previous research has found the boundary between the questions, "what constitutes recovery and what are the factors that enhance it" are blurry [(85), p. 177]. The themes generated in this scoping review represent an ongoing fusion of recovery as a means and an end, suggesting that recovery can be promoted through enhancing relationships, sense of meaning, and participation, and also be measured through the presence of each of these elements in our lives.

It is noteworthy that most of the literature included qualitative studies conducted with individuals with severe mental illness belonging to North American countries. Within the studies included, schizophrenic disorders were dominantly represented, with only a few studies focusing on depression, which is among the largest single cause of disability worldwide (83). Similarly, only a few studies included the perspectives of informal caregivers/support persons or professionals working with clients with severe mental illness (24, 42). These findings point to the fact that while there has been an increase in the effort to understand recovery from client perspectives, there remains a need to incorporate the diversity in perspectives and sociodemographic needs of those living with a broader spectrum of severe mental illness and those offering support.

The research team acknowledges that recovery is a deeply personal and unique journey for each individual, which implies that each person may have their own definition of what recovery entails for them [(12), p. 1250]. Despite the personal nature of recovery, previous research has identified several elements commonly cited in the literature as influential to recovery. Our findings on recovery compliment and simplify recovery components discussed in this research, including those described in a recent systematic review specific to recovery and mental illness (2). Our research team grouped common elements found in the literature into three pillars: relationships, sense of self, and participation. The significance of each pillar and its respective components allow for infinite variation in the recovery journey while providing clinicians with a practical approach to supporting those individuals. These pillars and elements do not represent an exhaustive list but are consistent themes throughout the literature and can offer clinicians guidance in translating recovery theory into practice.

Keeping the three pillars in the forefront of the clinical practice, while allowing the client to define their specific recovery journey, may provide clinicians with a pragmatic approach to better facilitate client recovery. This research team also feels that the simplistic approach of the three pillars (relationships, participation, and sense of self) to this complex topic will enable dynamic discussions on this issue with clients, support members and also with policymakers. Demonstrating a clear need to create an environmental shift through policy to better support personal recovery through the utilization of pragmatic relatable terms may help to move the recovery model forward regardless of objective outcome measures.

The nature of recovery is unique and often ambiguous, which presents an ongoing challenge to clinicians on how to best facilitate/support the recovery process. System-level policies and funding models emphasize measurable outcomes, but the personal recovery journey does not always lend itself to measurable change. This sanctions the traditional paternalistic approach in which clinicians and family members are seeking symptom remission despite what the recovery literature suggests that the client is not necessarily focused on remission. The traditional approach is symptom remission through medication in order to permit participation, engage in relationships and deepen one's sense of self. Perhaps if the focus is weighted more heavily on the pillars of recovery, symptom reduction would be the outcome. To challenge this traditional approach would also require environmental/system-level changes to allow for appropriate supports to be available without the necessity of traditional outcome measures.

Underemphasized, in the included articles, was the role that environmental interventions could play in recovery. This predominant focus on person-level elements has likewise been noted in a recent systematic review and could be explained, in part, by accepted definitions of recovery that do not explicitly reference the environment as a site of change (2, 7, 11, 19). Despite the tendency in clinical practice to direct service toward the individual, a growing body of research shows that the environment is often more immediately amenable to change than the person (86–90). The WHO's Commission on the Social Determinants of Mental Health supports the role of the environment in promoting recovery, arguing that mental health is shaped "to a great extent by the social, economic, and physical environments in which people live" [(91), p. 8]. Many models, such as the WHO International Classification of Functioning, Disability and Health (ICF), the Person-Environment-Occupation (PEO), the Canadian Model of Occupational Performance and Engagement (CMOP-E), and Ecology of Human Performance, also recognize the environment as a valid and consequential site for recovery-oriented intervention (92). Though treating the environment as an agent of change is becoming more common in policy and public health initiatives seeking to create recovery opportunities for clients, such as Housing First and Individual Placement and Support (93, 94), access to these services is often limited (3). This scoping review reinforces that essential elements of recovery must be identified through a broader lens that considers the role of micro, meso, and macro layers of the environment in effecting change and achieving optimal recovery outcomes (95).

Future Research

Through the examined literature, it has become clear that the majority of research exploring recovery-oriented practice has been completed using a client-centered approach (5, 96). The paradigm of client-centered mental health care is becoming more widely used and accepted amongst clinicians and researchers (50, 97). Future research using qualitative and quantitative methods must be employed to improve our understanding of recovery from perspectives of family, caregivers, and clinicians. The role of environmental and social factors must also be more carefully considered in future research to facilitate its integration into the design of recovery-oriented interventions. Through further research and continued consideration of the many elements of recovery, clinicians will be better able to engage in meaningful and beneficial recovery-oriented practice (1). Furthermore, critical research into the concept of recovery itself may reinforce the need for substantive restructuring of systems that claim to promote recovery, expanding the focus from the individual to consider cooperative, collective, and systems-level approaches to recovery [(98), p. 145, (99)].

Limitations

As our search strategy was limited to articles in English, we did not consider articles written in other languages. We also limited the selection of articles to electronic databases and peer-reviewed journal articles available at Queen's University Health Science Library. It is possible that the strategy and inclusion criteria may have limited the number of studies found to be appropriate for the review. We attempted to be comprehensive in our search by employing several strategies: (1) including articles from 1988 (first reference of recovery concept); (2) conducting searches in Google and the six most relevant electronic databases for peer-reviewed articles on recovery and mental health; and (3) consulting a health science librarian and incorporating her input on keywords and search strategy. We also acknowledge that our research team's composition of occupational therapists providing mental health rehabilitation care may have influenced our analysis. Although the team includes one group of stakeholders (occupational therapists seeking to implement recovery-oriented interventions), we could not consult with other key stakeholders (service users and community partners) to validate themes generated, and so did not fully include the sixth stage of scoping review methodology recommended by Levac et al. (100). Engaging clients, family members, caregivers, other mental health professionals or researchers in reviewing this paper and the identified components would have been advantageous. Seeking out explicit feedback through focus groups could identify new ideas or gaps in the paper that could guide future research.

CONCLUSIONS

This scoping review documents important knowledge translation gaps in the literature on recovery elements and identifies a critical need for future studies to address this issue. Our review identified relationships, sense of meaning, and participation as the three major pillars key to recovery for persons with severe mental illness. This review revealed a number of gaps, which may inform future research: (1) lack of standardized elements for conceptualizing recovery for persons with severe mental illness; (2) need to incorporate diversity in perspectives and socio-demographic needs of those with severe mental illness; (3) lack of emphasis on the role of the environment in influencing the process and outcome of recovery. Further research and continued emphasis on the application of the core elements of recovery will facilitate clinicians' engagement in meaningful and effective recovery-oriented practice.

DATA AVAILABILITY STATEMENT

All datasets generated for this study are included in the article/**Supplementary Material**.

AUTHOR CONTRIBUTIONS

AJ and KC contributed to the conception and design of the study. AJ and SG reviewed the title and abstracts of all the articles found during the initial search. All authors were involved equally in screening the articles using inclusion and exclusion criteria, extracting the information for data charting, qualitative data synthesis, and writing the first draft of the manuscript. SG prepared the numerical summary and tables. PC, TS, SG, KC, and AJ edited the final manuscript for submission. All authors read and approved the submitted version. All authors contributed to the article and approved the submitted version.

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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.2020.586230/full#supplementary-material

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Diary of a Mental Health Peer Worker: Findings From a Diary Study Into the Role of Peer Work in a Clinical Mental Health Setting

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Introduction: The importance of peer support workers in mental health care delivery has been extensively advocated for in mental health policy frameworks. However, there has been limited research examining the implementation of paid peer workers in clinical settings. This study explores the experience of paid peer support workers integrated within a clinically-operated community-based residential rehabilitation service for people diagnosed with a mental health disorder experiencing challenges living independently in the community.

Methods: A general inductive approach was taken in the analysis of diaries completed by a newly employed peer workforce. These diaries focussed on what they viewed as significant interactions in fulfilling their role. Composite vignettes were generated to illustrate key themes.

Findings: Thirty-six diaries were provided; these reported unplanned and spontaneously occurring interactions. Peer workers emphasized the importance of connecting with people while they were engaging in everyday activities as an opportunity for personal growth of the residents. The diaries also focussed on the peer workers' ability to connect and establish trust by sharing similar experiences with residents or family members. Peer workers also believed that they brought a different perspective than clinical staff and were able to refocus attention from clinical diagnoses and symptoms to other aspects of the resident's lives.

Discussion: Peer support workers described their work as flexible, responsive, and adaptable to the resident's needs. They believed that their roles brought a different lens to interactions on the unit and fostered a more inclusive and personal way of working for the team.

Conclusion: To ensure that peer workers can engage authentically with residents and family members, it is critical that the role and principles of peer work are valued and understood by all.

Keywords: peer work, community care unit, qualitative, mental health, rehabilitation

INTRODUCTION

Peer support workers are an important and expanding component of the mental health workforce. Peer support workers are people who are employed in government and non-government services, peer operated services and clinical settings on the basis of their lived experiences with mental health distress (1, 2). Peer support work differs from traditional mental health roles in the emphasis on using one's lived experience of mental health issues and recovery to support other's experiencing similar concerns (3, 4). Important aspects of peer support worker roles can include eliciting and promoting the strengths of consumers; supporting self-determination; and advocating to reduce discrimination, leading to improved mental health (5).

The employment of peer workers reflects wider policy reform that recognizes recovery as foundational to mental health service delivery (6). Peer roles exemplify the possibility of recovery for people experiencing mental health distress (3, 7). Understanding recovery for people affected by mental health challenges requires a holistic approach with emphasis on principles such as hope, autonomy, informed choice, social connection, and the strengths of the individual (8, 9).

Between 2012 and 2015 Community Care Units (CCUs), were introduced at the Metro South Addiction and Mental Health services in Queensland, Australia. CCUs were established in Australia in the 1990s as an alternative to long term hospitalization and institutionalization (10). Core features of the CCU model include cluster housing in a community setting combined with the onsite availability of mental health professionals. The MSAMHS CCUs emphasize rehabilitation, working with the residents based on their goals, priorities, and preferences. Foci of care are living skills development (e.g., budgeting, cooking, and cleaning) and community integration (e.g., interpersonal effectiveness, social problem solving, and citizenship) (11). Therapeutic interventions available on site include cognitive behavior therapy, cognitive remediation, and social cognition and interaction training (12).

The peer workforce in two CCU's was envisioned to be a distinct speciality. The role did not encompass clinical care but focussed on using lived experience to help engage residents with a focus on relationship and community inclusion (13). It was envisioned that the peer workforce, under supervision from senior peer workers, would iteratively co-design their roles over time. This was an attempt to mitigate the power imbalance between the mental health service employer and employee and to try to avoid distorting the unique value of the peer workforce by the "contrived and constrained world that is mental health services" (14).

An "integrated staffing model" was adopted in two CCUs. Peer support workers (PSWs) comprised the majority of roles within the multi-disciplinary team (15). A goal of the integrated staffing model was to integrate peer support into a multidisciplinary team to enhance recovery-oriented practice. Several studies provide evidence of the effectiveness of peer work in producing improved outcomes for people accessing mental health services, including facilitating engagement, promoting hope, increasing self-management, reduced hospitalizations, increased satisfaction with services (16–20). Peer support workers also experience improved self-esteem, confidence, employability, and recovery (21–23). The role is not without challenges, including role confusion and lack of role credibility. Difficulties defining and maintaining peer roles can be complicated within clinical settings where tension between recovery and the medical model may be more pronounced (23–26).

While there is now a growing body of research into peer support work (20) there is still limited information on what makes the roles effective from the perspective of the peer support workers (27). To gain a deeper understanding of how peer support workers developed and conceptualized their roles at these early stages, the CCU peer support workers were asked to document and reflect on what they considered to be significant interactions. In this article, we report on the qualitative analysis of these diaries.

METHODOLOGY

Data Collection Methods

Personal reflections, if documented in proximity to significant events, can be tools to capture the participant's thoughts and feelings of events as they happened (28). While written data is often considered less rich compared to face-to-face interviewing, it has been noted that written answers are often more focussed, condensed, and self-reflective when compared to oral accounts (29). In some ways, written accounts also produce data which can be easier to analyse as people who are interviewed can easily lose their train of thought, be unprepared for certain questions, or be interrupted (30). Furthermore, written responses allow for contemporaneous data collection and descriptions of events viewed by the participants as most significant, without imposing the filter of an interviewer.

To capture early experiences of the newly formed peer workforce, peer support workers were provided with a template to document and reflect on what they considered to be significant interactions. The template was developed by the research team and was intended to be a prompt for the peer support worker to write about their experiences. The questions were open ended and included references to positive and or negative experiences. Peer support workers were invited to write about experiences that they considered important. The questions on this template asked peer workers to: (1) provide a brief description of the interaction; (2) describe what they believed had been helpful (or not) in that interaction; and (3) why they believed that this interaction was significant. Peer support workers were asked to record these interactions in ways that would not allow the resident, or the peer support worker involved to be identified. The diaries were collected over a period of 5 months. It was up to discretion of the peer support worker to fill in the diaries. They were invited to share these diaries anonymously with the research team at the end of the data collection period. A total of 36 diaries were shared for this project. Ethical approval for the analysis of these transcripts for the purposes of this project was received from the relevant ethics committee.

TABLE 1 | Frequency of themes and subthemes identified.

Themes and Subthemes	*n* (%)
Time and space	
Using everyday experiences as opportunities for growth	9 (25)
Learning new skills	6 (18)
Connecting and sharing experiences	
Trust to have hard discussions	17 (47)
Sharing similar experiences	16 (44)
Being understood	9 (25)
Not alone	7 (19)
Giving hope	6 (17)
Seeing potential	2 (6)
Peer perspective	
Importance of non-clinical interventions	14 (39)
Inclusion	3 (8)
bridge between clinical and lived experience	2 (6)
Enforcing clinical priorities	1 (3)

Data Analysis

A general inductive approach was used to analyse the data. This approach establishes clear links between the research objectives and the summary findings derived from the raw data which then allows the development of a model or theory about the underlying structure of experiences as evidenced in the raw data (31). The data was analyzed in two stages. Stage one involved initial coding of the diaries; all diaries were read, and individual codes were developed. These codes were initially very broad. The codes were then regrouped into themes. The initial coding framework and themes were developed by MW and HR and refined by the research team. This refined coding framework was then re-applied to the full dataset. The diaries were read by MW, HR, CE, KM, and GV. HR identifies as a consumer researcher. The data was managed in ATLAS TI. As there were only a small number of peer workers and residents in the CCUs and to ensure people were not identifiable, themes and diaries were combined into composite cases and case vignettes. Diary entries that are used as examples in this article are based on these composite cases and vignettes, and names given are pseudonyms.

RESULTS

A total of 36 diaries were provided; 31 reported on interactions with residents and five reported on interactions with carers. In all the diaries, peer support workers predominantly used everyday language to describe various interactions with residents. All diaries reported on unplanned interactions that occurred spontaneously. Three themes were identified, namely: (1) Having time and space to engage with residents; (2) Connecting and sharing similar experiences; and, (3) Providing a peer perspective. **Table 1** provides an overview of the overarching and subthemes as well as the frequency these occurred.

Having Time and Space to Connect With Residents

This theme was divided into using everyday experiences as opportunities for growth and learning new skills. A quarter of the diaries described the importance of being able to spend time with people and engage around everyday experiences as opportunities for growth. These activities were generally unscheduled and opportunistic and, at face value, without rehabilitative purpose. Most of these interactions occurred when the peer support workers were with residents in their independent living units. Examples of times the peer support workers connected with residents while engaging in other activities included: "learning to crochet," "playing pool," "learning to play an instrument," and "learning social skills." In these interactions, peer support workers offered support and encouragement when things didn't go according to plan, as well as, reassurance that feelings of frustration and disappointment were common experiences. The peer support workers believed that residents' abilities to be persistent as well as learning to deal with frustration were important outcomes of these interactions. Other diaries highlighted that participants viewed their support as enabling residents to engage in every day social activities that would ordinarily make them uncomfortable. These interactions were described as allowing residents to develop new coping and social skills as well as becoming more adaptable.

Case Vignette: Sarah

Jane, the peer support worker, worked with Sarah to feel less anxious being around people. Sarah had always wanted to learn an instrument but was reluctant to attend the music group. Over a few weeks, Jane spent a lot of time with Sarah to help her attend the group. With a lot of encouragement and Jane's presence, Sarah attended the group. While Sarah, did not want to participate in the group, she enjoyed it. Jane checked in with her afterwards and focussed on her strengths and the positives of her progress. Over the weeks, she was able to attend the group and participate.

> "*Sarah was very reluctant to attend stating that she "couldn't possibly go as this is just not for me.". She came to the group and was quick to state that she wasn't willing to participate but would be happy to watch. I followed up with her to congratulate her on being able to stay throughout the group. Sarah's self-confidence improved as she proved to herself that she was able to attend…*"

Connecting and Sharing Similar Experiences

Over half the diaries described strategies peer support workers used to connect and establish the trust needed to have difficult discussions. This was most often achieved by sharing with residents (or family members) that they had similar experiences and how they had dealt with these. Peer support workers believed that by sharing that they had similar experiences, a safe space was created for residents to talk about sensitive topics. This allowed residents to talk openly about their struggles and to have meaningful discussions about topics of importance to them. Peer support workers described that, as a result, the residents' shame was lessened because they felt less judged. These sensitive topics included how depression had impacted their lives, fear of being tempted back into using drugs, dealing with family conflict, losing faith, and suicidal thinking. Peer support workers viewed these conversations as different to those residents would have with clinical staff members, in that sharing common experiences showed residents that they were not alone with their challenges; that there are people that understand what they are going through. Peer workers believed that this sharing of experiences was a key strength of their role that allowed them implicitly to share hope that things would improve for residents.

Case Vignette: John

John had been experiencing increased anxiety and feeling low. Katelyn, the peer support worker went to see him in his unit to have a chat. He had been experiencing some tension with his family. He and Katelyn spoke about how difficult it can be to manage difficult family members, and Katelyn shared some of her experiences. During the chat, he spoke about his anxiety and wanted some medication to help him deal with the symptoms. Katelyn mentioned some of her own coping strategies with him and provided him with a CDs with music and mediations as well as a CD player to try these out. As a result, he was able to manage his anxiety without taking more medication.

> "*I called in to see John in his unit. He told me that he wasn't traveling so well and asked if I would like to have a coffee and chat. We sat and had coffee which helped to normalize our interaction. We were in his unit and he was the host. We engaged in a conversation about his family members. I supported him by listening to his concerns and shared some of my experience. I spoke about what I try to do in situations like this. We talked a lot about coping strategies and John revealed that he was having a great deal of trouble sleeping, averaging only 4 h per night due to stress and anxiety. He was waking up feeling worried and this was compounding an already difficult situation. John felt heard and understood and felt comfortable to chat openly about what depression has meant in the past and the consequences of when it is present in his life. Being a Peer Worker and having the scope both professionally and personally to share my story in a manner that was helpful allowed John to gain and share insight into his own mental health difficulties. I believe that being able to be open and honest about mental illness and really understanding the symptoms and struggles from a lived perspective lets the person know that they are not alone.*"

Case Vignette: George

George left the unit and was asked by Jeremy what had been the most helpful during his stay.

> *I asked what had been helpful for his recovery at the CCU and he said the Peer Workers as he had not met people with mental health difficulties who work and manage their illness. He said the Peers understood him and were able to help as they knew what he meant when going through the bad times.*

Provision of the Peer Perspective

The diaries also documented how peer support workers brought a different perspective to clinical staff in the way that they worked. Many of the diaries emphasized the importance of focussing on aspects of people's lives other than clinical diagnoses and symptoms. These included hobbies, cooking, appreciating music or poetry or being able to participate in group activities. These aspects were described as being as important to a person's recovery as were medications and clinical interventions. In their roles, peer support workers believed they were able to shift the focus from a clinical perspective to a lived experience perspective, emphasizing self-management, person directed care, and belief in the person's inherent capacity to overcome adversity. This meant however that, at times, they were at odds with the clinical team and needed to advocate for the wishes of the person to take priority. Peer support workers also felt that they brought a different lens on what may have been seen by clinical staff as symptoms or negative behavior.

Case Vignette: Joshua

Many of the clinical staff had been concerned about Joshua's behaviors and they were concerned that he was not working on his recovery.

> "*I wasn't comfortable with the idea that Joshua wasn't still focused on his recovery and felt that there was a lack of trust being afforded to him. I was able to get some time alone to talk with Josh and I was finally able to encourage him to come up to the shops with me, which was one of his recovery goals and a seriously anxiety provoking activity for him. In supporting him to do this I felt like I was able to have a considerable breakthrough in what was going on for him because I was able to identify several similar coping mechanisms that we both shared.*"

The peer support workers also described how their roles encouraged inclusion of residents in the CCU. Various diary entries described situations where peer support workers invited residents to participate in activities which in the past were undertaken solely by staff members. These activities included putting up decorations at the CCU, preparing food for staff, or jointly participating in celebrations. Including the residents in these activities appeared to change the dynamics in the CCU and had positive impacts on the residents and staff.

Case Vignette: Jack

Fred and Oscar (peer support workers) were preparing for a staff party as there were three birthdays that week. While they were preparing Jack arrived. They asked him if he wanted to help decorate the CCU. While they were decorating, they shared memories of birthdays when they were younger. Once the decorations were done the peer support workers suggested to the staff that the residents join them.

> "*Including Jack in a shared activity normalized things for him. This helped make him to feel like he belonged. Participating in the activity also gave him a sense of purpose. A fun relaxed atmosphere was created that allowed Jack to feel comfortable enough to share his childhood memories, and gave him a feeling of safety, acceptance, and self-worth.*"
>
> "*This celebration was the first time that many of the residents had gathered with staff for a social event. People chatted, shared stories, played games, and enjoyed themselves. It was wonderful*

> *to observe people (residents/staff) working together with the preparation, the celebration, and the clean-up.*"

At other times, it was challenging for peer support workers to uphold a peer perspective. This was notable in times when resident safety or well-being was considered by clinical staff to be at risk. In one diary entry, the peer support worker was asked to enforce clinical priorities to ensure the person's safety. The peer support worker in this instance described losing the trust of the resident, but the peer support worker reconciled this, stating that "it was more important for the treatment team to maintain the connection."

DISCUSSION

This project showcases how peer support workers operationalize their work in a public mental health service and the types of interactions they consider significant in their own words. This study provides important insights into how peer support workers conceptualize their work within an integrated staffing model. Peer support workers strongly emphasize the importance of connecting with people while they are engaging in everyday activities. These interactions were facilitated by the availability of time and a shared space. Connecting with residents through shared engagement in everyday activities was viewed as providing authentic opportunities to support residents deal with their experiences and fears. These interactions were viewed as building relationships and trust. Additionally, the peer support workers viewed self-disclosure of their lived experience as important to establishing trust, as well as reducing shame and isolation. The peer support workers emphasis on shared engagement in everyday experiences aligns with the importance of personal recovery concepts. Personal growth and living a good life may be viewed differently to measures of clinical effectiveness/emphasis on symptom reduction (32). It is likely that the parallel processes of having clinical and peer processes in a service will provide more rounded interventions.

Peer support workers viewed their role as distinct from the clinical staff and believed that their lived experience lens facilitated learning and brought inclusiveness to the CCU environment. The diaries often focused on their role as advocates and change agents within the team. Peer support workers described their roles as reciprocal in building equitable relationships with the residents. Based on these diaries, it is not possible to know if this was experienced in the same way by the residents or staff. However, previous work evaluating the CCUs has suggested that residents as well as staff view the integrated staffing model positively and describe peer support workers as "bridging the gap" between residents and clinical staff by facilitating improved interactions and communication. The peer support workers also played a role in 'putting things in perspective' by normalizing through sharing lived experience (11).

This study highlights the specialist skillset peer support workers bring to the role. The diaries suggest that to be able to work effectively within a community-based rehabilitation setting, it is critical to maintain a lived/living experience perspective. To be able to share one's own experiences in a purposeful and meaningful way requires an ability to draw on these experiences with emotional understanding, empathy, self-awareness, and self-reflection (33). For peer support workers to be able to undertake this important work it is essential that they are provided with necessary support within the organization.

Supervision guidelines have been developed for non-clinical settings, but there is still relatively little information on the types of supervision support needed by PSWs within a clinical setting (24). The diaries however suggest that to be able to work effectively within a community-based rehabilitation setting, it is critical to maintain the lived/living experience aspect of the roles. This can be achieved by regular peer supervision around their roles. In the HHS where this study was undertaken, the peer support workers, in addition to being supervised by their team leaders, also report to the Director of Social Inclusion and receive supervision from the lived experience workforce. This structure is intended to mitigate against some of the issues raised in the literature to date of perceived power imbalance of peers with clinicians, of aligning too closely with clinicians and losing their peer identity. Results from this study indicate that supervision is needed to guide the peer workers to not only maintain a lived experience focus, but also to work within the scope and the boundaries of their role. For the role of a peer support worker to be effective, it is important that this role is equally valued and understood by the team and the organization at large. Consequently, implementing peer roles within clinical settings necessitates a whole of workplace approach with a focus on organizational culture and supervision in effectively integrating peer workers within the service (20).

LIMITATIONS

The diaries were written from the perspective of peer support workers and it is not possible to determine if residents experienced these interactions in the way that they were described. It is also important to note that peer support workers work within a community-based residential rehabilitation setting and that the challenges faced are likely to be very different to peer workers in a more acute and or shorter-term clinical environments. One of the major drawbacks of using a diary approach has been that the research team was not able to ask people to elaborate on different points and to clarify confusing statements. Peer support workers also emphasized the more positive aspect of their work. At the time when the data was collected, peer support workers were employed on a contract basis and the uncertainty about the stability of employment could have led to the peer support workers to emphasize the more positive aspects of their work. Since that time, however, the positions are now permanent. Despite these limitations, however, the insights gained from these diaries have provided valuable insights into how peer support workers conceptualize their practice and provided peer support workers with the opportunity to capture the experiences when they occurred.

CONCLUSIONS

The findings of this study reinforce the value and unique contributions peer support workers can make, not only to the recovery journey of residents but also to the clinical team. Peer support workers described their work as flexible, responsive, and adaptable to the resident's needs. By sharing their experiences peer support workers were able to bring a different lens to situations and work inclusively with people. To ensure that peer workers can continue to provide this support it is critical that the peer support workers are supported through professional supervision and that the role and principles of peer work are understood, and peer workers embedded within the organization. This supervision could be enhanced by using reflective diaries which are an effective way for peer support workers to capture their own understanding and share the uniqueness and effectiveness of their work.

DATA AVAILABILITY STATEMENT

The datasets presented in this article are leave this in available because the data is confidential.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Metro South Health Ethics Committee.

AUTHOR CONTRIBUTIONS

MW and HR: design. GV, FD, and KM: implementation. MW, HR, GV, KM, SP, CE, and FD: data analysis and write up. All authors contributed to the article and approved the submitted version.

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Improved Rehabilitation Outcomes for Persons With and Without Problematic Substance Use After 2 Years With Assertive Community Treatment—A Prospective Study of Patients With Severe Mental Illness in 12 Norwegian ACT Teams

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Background: Persons with severe mental illness often face difficulties in accessing and receiving adequate services enabling them to live independently. Many have co-occurring substance use problems that increase the risk of adverse outcomes. Community-based service models have been implemented around the world, including assertive community treatment (ACT), but the knowledge of rehabilitation outcomes in different subgroups is limited. We aimed to explore rehabilitation outcomes among patients suffering severe mental illness with and without substance use problems who had received ACT services for at least 2 years. Additionally, we compared differences in changes between the two groups.

Methods: A total of 142 patients who received services for 2 years from the first 12 Norwegian ACT teams were included. Eighty-four (59%) had problematic substance use, while 58 (41%) did not. Data regarding housing, activity, symptoms, functioning, and subjective quality of life were collected upon enrollment into ACT and at 2 years of follow-up. Clinician-rated scales and self-report questionnaires were used. Changes within the two groups and differences in change between the groups were assessed using generalized linear mixed models.

Results: Both groups were more likely to have good housing, higher level of functioning, and less anxiety and depressive symptoms after 2 years. The odds of good housing among participants with problematic substance use increased only after adjusting for age and gender. Participants with problematic substance use had less severe symptoms, particularly negative and manic symptoms, while participants without problematic substance use reported improved satisfaction with life in general. Neither group experienced a change in having a meaningful daily activity, positive symptoms, practical and social functioning, or subjective quality of life. The reduction of manic symptoms in the substance use group was the only difference between the groups.

Conclusion: After 2 years, patients with and without problematic substance use experienced improvements in several important domains. Furthermore, the improvements were similar in both groups for most outcomes. This may suggest that ACT has a place in the continued effort toward integrated and comprehensive community services empowering patients with severe mental illness to achieve and sustain an independent life, including marginalized groups with severe substance use.

Keywords: severe mental illness, co-occurring substance use, assertive community treatment, housing, activity, psychiatric symptom, functioning, quality of life

INTRODUCTION

Persons with severe and persistent mental illness often struggle with having their needs met by the service system, and health care services often face difficulties in reaching, engaging, and providing services that enable them to live their lives independently in the community. Co-occurring substance use disorders are frequent in this population (1–5), and they increase the risk of adverse outcomes, including relapse or worsening of psychiatric symptoms (6–8), impaired functioning (5, 6), housing instability (9), and lower quality of life (7, 8). Over the past decades, many countries have implemented integrated models of mental health care to improve services for persons with severe mental illness and complex needs (10), including co-occurring substance use problems.

The overarching goal of mental health rehabilitation services for persons with severe and complex mental health conditions is to provide high-quality services that promote recovery and that are based on the patients' needs, wishes, and active participation (11, 12). Appropriate interventions that target a range of factors on an individual level and are provided in the community are needed to improve rehabilitation outcomes and to promote recovery for this group (13). Although the shift from institution-based and fragmented services to integrated, community-based services started decades ago, the services are still insufficient, leading both the World Health Organization (WHO) (14) and the United Nations (UN) (15) to recently emphasize the continuous need to "invest in psychosocial services that are integrated into primary care and community services to empower users and respect their autonomy" (15). A fragmented service system and traditional office-based mental health care, even when localized in the community, may present obstacles to delivering comprehensive and coordinated services, as was the situation in Norway in the early 2000s (16).

One multidisciplinary, team-based, and intensive service delivery program with a strong focus on providing services to improve their patients' abilities to achieve and sustain an independent life in the community is the assertive community treatment (ACT) model (17). ACT teams target persons with severe mental illness, including persons with co-occurring substance use disorders (18, 19), who have complex needs and difficulties in engaging with standard care. These teams use multiple strategies to reach and keep in contact with their patients. High-fidelity teams provide psychosocial and outreach services that are based on the patients' wishes and needs, and the services are evidence-based, individually tailored, and recovery-oriented (20). The implementation of ACT teams in the Norwegian health care system started in 2007 and was included in a white paper in 2009 (21). A main aim was to integrate different health and welfare services to improve treatment for persons with severe mental illness in need of comprehensive and long-term care (16), including persons with co-occurring substance use problems.

Integrated multiple interventions have been found superior over single interventions in improving outcomes for persons with schizophrenia (13). Among persons with co-occurring substance use disorders, they have shown to improve drop out of services, symptom severity, substance use, and housing conditions (22). High-fidelity ACT teams seem to be somewhat better in improving substance use problems and reducing high use of inpatient care than low-fidelity teams, but ACT has not been shown to significantly improve other outcomes over non-intensive or standard care (22). The lack of effect may partly be explained by the heterogeneity of the included studies (19, 22, 23), or that there are too many organizational similarities between the control services and the experimental (ACT) services (23, 24). However, the included studies did not compare outcomes between different subgroups. A recent study comparing outcomes between persons with co-occurring substance dependence, co-occurring substance abuse, or no substance use found that all groups experienced improved outcomes (25). Nevertheless, patients with co-occurring dependence showed less improvements in psychiatric symptoms, level of functioning, and quality of life than patients with substance abuse or patients without substance use problems (25). Further studies are needed to increase our knowledge of rehabilitation outcomes among different subgroups of patients with severe mental illness who receive integrated and community-based services such as ACT, including those with co-occurring substance use disorders.

In the current study, we aimed to explore if outcomes associated with rehabilitation changed for patients both with and without problematic substance use after 2 years with ACT. The outcomes we included were housing situation, meaningful daily activity, severity of psychiatric symptoms, level of functioning, and subjective quality of life.

Our research questions were as follows:

1. Do patients with and without problematic substance use experience changes in rehabilitation outcomes after 2 years of ACT follow-up compared to the situation upon enrollment into the teams?
2. Are any changes in rehabilitation outcomes different for patients with problematic substance use compared to patients without problematic substance use?

METHODS

Design

This study is part of the research-based evaluation of ACT teams in Norway. It has a prospective cohort design and includes data from patients upon their enrollment into ACT and after 2 years of follow-up.

Setting

From 2009 until 2011, 12 ACT teams were established throughout Norway in both rural and urban areas. Details regarding the setting and differences between the teams, including fidelity to the ACT model, have been published earlier, but relevant information is repeated here: Fidelity was measured using the Tool for Assertive Community Treatment fidelity scale (TMACT) (26). The mean fidelity scores at 12 months ranged from 2.7 to 3.7, indicating low to moderate fidelity to the ACT model. At 30 months, the scores ranged from 3.1 to 4.1, indicating moderate to high fidelity. Substance abuse specialist was present in 11 teams at 12 and 30 months' fidelity evaluation. The mean fidelity scores on the five subscales relating to substance abuse specialist and Integrated Dual Disorder Treatment (IDDT) showed moderate to high fidelity. However, the scores on the different items showed large variations between teams (scores ranged 1–5, indicating none to full implementation) (27, 28).

Recruitment and Participants

The recruitment process and the characteristics of the participants, including the classification of problematic substance use, have been described in detail elsewhere (28). However, a brief description is provided: The ACT teams included 338 patients during their first year of operation, and 178 (53%) gave written informed consent to participate in our study. After 2 years of follow-up, 16 of the 178 patients were discharged from the teams, five patients had died, and for 12 participants, no data were shared with the research group despite written informed consent. This left a total of 142 (42%) who had received ACT services for at least 2 years and provided the research group with data from both enrollment and after 2 years of follow-up. Compared to the nonparticipants ($n = 196$, 58%), fewer participants had problematic substance use and they had less severe symptoms and better functioning. There were no differences in age, gender, diagnosis of severe mental illness, or people being subject to involuntary outpatient treatment between participants and nonparticipants (28).

Characteristics of the participants have been presented in Norwegian earlier (27), but a short summary is included here. Upon enrollment into the teams, the mean age of the participants was 40 years [standard deviation (SD) 8.7] and the majority was male ($n = 94$, 67%), of Norwegian origin ($n = 114$, 84%), unmarried ($n = 106$, 75%), and more than half was living alone ($n = 86$, 61%). Seventeen percent ($n = 33$) were either living in institutions or homeless. Almost all participants had a severe mental illness according to the criteria of the International Statistical Classification of Diseases and Related Health Problems (ICD), 10th revision (29), where schizophrenia-spectrum disorders were the most common (F20–29 $n = 115$, 87%) and a few participants had bipolar disorder (F31) ($n = 9$, 7%). Approximately one third was under involuntary outpatient treatment ($n = 51$, 36%). Of the 142 participants, 84 (59%) were classified as having problematic substance use upon enrollment into the ACT teams, while 58 (41%) were not. Further details regarding the classification and characteristics of the two groups have been published in the previously mentioned paper (28), but the categorization and the main differences between the groups are repeated here. Classification of problematic substance use was based on the participants' self-report of alcohol and substance use [the Alcohol Use Disorder Identification Test (AUDIT) and the Drug Use Disorder Identification Test (DUDIT) scales; for more information, see the following paragraph–Measures]. A total of 72 participants (51%) scored above cutoff on one or both scales. For participants who scored below cutoff or who had not completed the AUDIT or the DUDIT, we included the clinician-rated scores on the Alcohol Use Scale (AUS) and the Drug Use Scale (DUS) (for more information, see the following paragraph–Measures). When the score was 3 or higher on one or both scales, the participants were assigned to the "problematic substance use" group (28).

The participants with problematic substance use were more likely to be of Norwegian origin than the participants without problematic substance use; they had a lower level of education; they were more often subject to involuntary outpatient treatment; they had more severe psychiatric symptoms, particularly manic symptoms; and they had a lower level of everyday functioning. There were no differences between the groups regarding gender, age, employment status, living situation, or level of global functioning (GAF-F) upon enrollment. After 2 years of follow-up by ACT, six (7%) of the 84 participants who were classified as having problematic substance use upon enrollment into ACT no longer meet the criteria. We also found that four (7%) of the 58 participants who did not meet the criteria upon enrollment were classified as having problematic substance use 2 years after.

Measures

Clinician-Rated Instruments

Sociodemographic data were collected by the teams using a registration form on their life situation and health that included questions regarding the patients' housing situation and occupational/educational activities. The ACT teams categorized the participants' housing situation as "Very poor" = 0, "Poor"

= 1, “Neither poor nor good” = 2, “Good” = 3, or “Very good” = 4 based on their knowledge and observations. Due to few participants in some categories, we dichotomized the variable into “Poor” (including 0, 1, and 2) and “Good” (including 3 and 4) for the analyses.

The ACT teams also assessed the patients’ activity situation, including competitive work, supported or sheltered work, studying, unemployment, admitted or incarcerated, or other activities during the last 4 weeks before enrollment and during the last 4 weeks before the 2-year assessment. We dichotomized the variable into “Meaningful daily activity–Yes/No,” where “Yes” included competitive work, sheltered/supported work, and studying, while “No” included unemployment, admissions in institution, or incarceration. This was done due to a very low number of participants in several categories.

Psychiatric symptoms were assessed by the ACT teams using the Brief Psychiatric Rating Scale–Expanded version (BPRS-E) (30). This is a 24-item rating scale, and each item is given a score from 1 (not present) to 7 (extremely severe). The 24 items give four symptom-dimensions, including positive symptoms (grandiosity, suspiciousness, hallucinations, unusual thought content, bizarre behavior, disorientation, and conceptual disorganization), negative symptoms (blunted affect, emotional withdrawal, and motor retardation), agitation mania (tension, uncooperativeness, excitement, distractibility, motor hyperactivity, and mannerism and posturing), and anxiety and depressive symptoms (anxiety, depression, suicidality, and guilt) (31). The reliability of the BPRS in our study was found to be moderate for the BPRS total score [intraclass correlation coefficient (ICC) 0.54]. It was also moderate for the symptom-dimensions positive symptoms (ICC 0.71) and agitation mania (ICC 0.72), while it was poor for negative symptoms (ICC 0.44) and good for anxiety and depressive symptoms (ICC 0.78) (27).

The level of functioning was assessed using the Global Assessment of Functioning (GAF) Scale (32) and the revised version of the Practical and Social Functioning (PSF) scale (33). We used the function scale from the split version of the GAF (GAF-F) (34, 35), where the level of functioning (GAF-F) and the severity of symptoms (GAF-S) are scored separately. The GAF-F scale ranges from 0 to 100, and higher scores indicate better functioning. The PSF revised is a 32-item clinician-rated questionnaire giving eight subscales. Each item is given the score 0 (not able to perform), 1 (partly able to perform), or 2 (fully able to perform). Each subscale comprises four items, with scores ranging from 0 to 8. The PSF mean score is based on the scores on these eight subscales and ranges from 0 to 8. Each subscale is a separate factor with good internal consistency (Cronbach’s alpha between 0.735 and 0.903) and acceptable face validity (Personal communication, Ruud, 2014).

The clinicians assessed the participants’ problems related to substance use with the AUS (36) and the DUS (37). Both scales are rated on a 5-point scale from 1 (abstinent) to 5 (dependence with institutionalization).

Self-Report Questionnaires

The participants also reported their use of alcohol and other substances with the AUDIT (38) and the DUDIT (39). Both questionnaires assess problematic use. The AUDIT comprises 10 items with a total score ranging from 0 to 40. The DUDIT comprises 11 items, and the total score ranges from 0 to 44. Higher scores indicate more severe problems on both questionnaires.

Quality of life was assessed using the Manchester Short Assessment of Quality of Life (MANSA) (40). The MANSA is a self-report questionnaire comprising 11 life domains and one overall question regarding “General life satisfaction.” Each of these 12 items are given a score from 1 (couldn’t be worse) to 7 (couldn’t be better), and the MANSA mean score ranges from 1.0 to 7.0.

Data Collection

Sociodemographic and clinical data were collected upon enrollment into the ACT teams and after 2 years of follow-up. Baseline data were collected from December 2009 to February 2012, while 2 years of follow-up data were collected from December 2011 to February 2014. Onset of data collection depended on when the team was established and when the participants enrolled.

Data regarding the participants’ life situation and health, psychiatric diagnosis and substance use (AUS and DUS), severity of symptoms (BPRS-E), and level of functioning (GAF-F, PSF) were obtained using clinician-rated instruments. The ACT team members completed the forms based on information from observations, interviews with participants, interviews with relatives and professionals from other services, and from electronic medical records. Information regarding the frequency and the severity of substance use (AUDIT and DUDIT) and the participants’ subjective quality of life (MANSA) was obtained from self-report questionnaires that the participants completed alone or together with an ACT team member.

Statistical Analyses

Sociodemographic and clinical characteristics upon enrollment and after 2 years of follow-up were described as frequencies and percentages for dichotomous and categorical variables and as means and standard deviations (SD) for continuous variables.

Generalized linear mixed models were used to assess changes in outcomes within the two groups (with and without problematic substance use) and differences in changes between the two groups for dichotomous variables. Linear mixed models were estimated to assess changes in outcomes within the groups and differences in changes between the two groups for continuous variables. The models contained fixed effects for the two time points (enrollment vs. follow-up), for substance use status (Y/N), and for the interaction between these two. We included random intercepts for teams to correctly adjust the estimates for possible within-team correlations. We present the results for dichotomous variables as within- and between-group odds ratios (ORs) with 95% confidence interval (CI) and *p*-values. The results for continuous variables are presented as mean within-group changes and between-group differences in change with corresponding 95% CI and *p*-values. All models were further adjusted for age and gender.

As reported in the Recruitment and Participants section, six (7%) of the 84 participants who were classified as having problematic substance use upon enrollment into ACT no longer meet the criteria after 2 years of follow-up, and four (7%) of the 58 participants who did not meet the criteria upon enrollment were classified as having problematic substance use 2 years after. To test if our results were influenced by their status, we performed sensitivity analyses by excluding these 10 participants and reestimating the models above after.

Missing values for the PSF scale ($n = 14$, 0.3% of cases upon enrollment and $n = 10$, 0.2% of cases at 2 years of follow-up), the MANSA ($n = 12$, 0.5% of cases upon enrollment and $n = 49$, 2.2% at 2 years of follow-up), and the BPRS scale ($n = 0$ cases upon enrollment, $n = 6$, 0.2% at 2 years of follow-up) were imputed by generating the empirical distribution for each item and drawing a random number from that distribution to replace the missing value. The process was repeated until all missing values were imputed. The GAF-F scores were close to normally distributed, and missing values ($n = 4$, 2.8% of cases upon enrollment and $n = 1$, 0.7% of cases at 2 years of follow-up) were therefore imputed by drawing a random number from the corresponding normal distribution.

Missing values on demographic variables were not imputed.

The statistical analyses were performed by Statistical Package for the Social Sciences (SPSS) version 25 and SAS software version 9.4. All tests were two-sided, and the results with *p*-values below 0.05 were considered statistically significant. No adjustment for multiple testing was implemented.

Ethics

This study is a part of the national research-based evaluation of ACT teams in Norway, which has been approved by the Regional Committee for Medical and Health Research Ethics, region South East (ID: 2010/1196a), and by the Data Protection Officer at Innlandet Hospital Trust, Norway.

RESULTS

Results from the descriptive analyses of the rehabilitation outcomes among participants with and without problematic substance use are reported in **Table 1**. Results from the regression analyses regarding changes in outcomes within each group and the difference in change between the groups are presented in this section. A short summary of the results from the sensitivity analyses is also provided.

TABLE 1 | Characteristics upon enrollment and at 2 years of follow-up.

	Upon enrollment		**At 2 years of follow-up**	
Good housing situation	***N***	**%**	***N***	**%**
Substance use group	41	50.0	53	64.6
Non-substance use group	35	62.5	45	80.4
Meaningful daily activity				
Substance use group	7	8.3	10	11.9
Non-substance use group	8	14.0	12	21.1
BPRS mean score*	**Mean**	**SD**	**Mean**	**SD**
Substance use group	*2.60*	*0.86*	2.38	0.81
Non-substance use group	*2.24*	*0.66*	2.09	0.69
BPRS positive symptoms*				
Substance use group	*2.65*	*1.34*	2.57	1.31
Non-substance use group	*2.23*	*1.14*	2.14	1.12
BPRS negative symptoms*				
Substance use group	*2.43*	*1.14*	2.07	0.96
Non-substance use group	*2.59*	*1.18*	2.34	0.99
BPRS agitation mania*				
Substance use group	*2.42*	*1.19*	2.07	0.96
Non-substance use group	*1.78*	*0.77*	1.78	0.78
BPRS anxiety/depressive symptoms*				
Substance use group	*2.77*	*0.95*	2.43	0.98
Non-substance use group	*2.63*	*1.10*	2.33	1.05
GAF-Function*				
Substance use group	*38.9*	*8.1*	42.6	10.3
Non-substance use group	*40.8*	*8.6*	44.7	12.4
PSF score*				
Substance use group	*4.05*	*1.50*	4.32	1.51
Non-substance use group	*4.63*	*1.62*	4.70	1.24
MANSA mean score				
Substance use group	4.27	1.09	4.37	0.90
Non-substance use group	4.48	0.90	4.60	0.84
MANSA life in general				
Substance use group	4.15	1.72	4.32	1.33
Non-substance use group	4.10	1.55	4.51	1.39

**Data from enrollment (in italic) have been published in a previous paper (28).*
BPRS scores range from 1 to 7, with higher scores indicating more severe symptoms.
PSF scores range from 0 to 8, with higher scores indicating better functioning.
MANSA scores range from 1 to 7, with higher scores indicating more satisfaction.
BPRS, Brief Psychiatric Rating Scale; GAF, Global Assessment of Functioning Scale; MANSA, Manchester Short Assessment of Quality of Life; PSF, Practical and Social Functioning.

Housing Situation

The general linear mixed models showed that the odds of having a good housing situation increased significantly for participants with problematic substance use only when adjusting for age and gender (**Table 2**). For participants without problematic substance use, the odds increased both in the unadjusted and the adjusted model (**Table 2**).

When comparing the change between the two groups, we found that the participants without problematic substance use did not have a significantly greater increase in odds of having a good housing situation compared to the group with problematic substance use (**Table 3**). Both the unadjusted and the adjusted models showed the same result.

Meaningful Daily Activity

We found that the odds of having a meaningful daily activity after 2 years with ACT did not change significantly within the groups (**Table 2**), and there was no significant difference in change between the groups (**Table 3**) in either of the models (unadjusted and adjusted).

TABLE 2 | Within-group changes from ACT enrollment to 2 years of follow-up—Dichotomous variables.

	Unadjusted analysis			Adjusted analysis*		
	OR	**95% CI**	***P*-value**	**OR**	**95% CI**	***p* value**
Good housing situation						
Non-substance use group	2.52	1.07–5.94	**0.035**	2.63	1.10–6.28	**0.030**
Substance use group	1.78	0.95–3.32	0.073	1.92	1.01–3.65	**0.047**
Meaningful daily activity						
Non-substance use group	1.52	0.56–4.15	0.414	1.62	0.54–4.88	0.395
Substance use group	1.52	0.53–4.32	0.433	1.34	0.46–3.91	0.589

**Adjusted for age and gender. The bold values highlight significant p-values (below 0.05).*

TABLE 3 | Between-group changes from enrollment to 2 years of follow-up—Dichotomous variables.

Dichotomous variables	**Unadjusted analysis**			**Adjusted analysis***		
	OR	**95% CI**	**p value**	**OR**	**95% CI**	**p value**
Good housing situation	1.49	0.49–4.10	0.515	1.37	0.47–4.04	0.567
Meaningful daily activity	1.00	0.24–4.26	0.999	1.20	0.26–5.60	0.812

**Adjusted for age and gender.*

Psychiatric Symptoms (Brief Psychiatric Rating Scale–Expanded Version Scale)

Both the unadjusted and the adjusted model showed that the participants with problematic substance use had less severe symptoms (BPRS-E mean score), in particular less negative, manic, and anxiety and depressive symptoms (BPRS-E subscales) after 2 years with ACT (**Table 4**). Participants without problematic substance use experienced a significant reduction of anxiety and depressive symptoms (BPRS-E subscale) after 2 years with ACT in both models (**Table 4**). Neither group experienced a change in their level of positive symptoms.

When comparing the two groups, all analyses showed that the reduction of manic symptoms was significantly greater among participants with problematic substance use than among participants without problematic substance use (**Table 5**). Changes in other symptoms were not significantly different between the two groups.

Level of Functioning (Global Assessment of Functioning Scale–Function and Practical and Social Functioning)

The global level of functioning (GAF-F) increased in both groups, while the level of everyday practical and social functioning (PSF) did not change significantly in either group (**Table 4**). Adjusting for age and gender (**Table 4**) showed the same results.

Both the unadjusted and the adjusted models showed that the changes in the global level of functioning (GAF-F) and everyday practical and social functioning (PSF) were not significantly different between the two groups (**Table 5**).

Subjective Quality of Life (Manchester Short Assessment of Quality of Life)

There was no change in satisfaction with life in general or the MANSA mean score among participants with problematic substance use (**Table 4**) in both the unadjusted and the adjusted model. Participants without problematic substance use reported higher satisfaction with life in general (MANSA life in general; **Table 4**) after 2 years, while the MANSA mean score did not change significantly. The results remained the same after adjusting for age and gender.

When comparing the two groups, we found that the change in satisfaction with life in general was not significantly different among participants with compared to participants without problematic substance use (**Table 5**).

Summary of the Sensitivity Analyses

In the Recruitment and Participants section, we reported that the status of problematic substance use changed for 10 of the 142 participants. We explored if this change of status influenced the main results and performed unadjusted and adjusted sensitivity analyses where these 10 participants were excluded.

In contrast to the main analyses, the sensitivity analyses showed that the odds of having a good housing situation was not higher after 2 years with ACT for participants with problematic substance use after adjusting for age and gender (OR 1.90, 95% CI 0.98–3.36, $p = 0.059$). We also found that participants without problematic substance use experienced a significant reduction of negative symptoms but only in the unadjusted analyses (BPRS negative symptoms 0.34, 95% CI 0.03–0.65, $p = 0.033$). All other results remained unchanged in the sensitivity analyses.

DISCUSSION

The main purpose of this study was to explore if patients with and without problematic substance use experienced improvements in outcomes important for achieving and sustaining a meaningful and independent life in the community after 2 years of follow-up by ACT teams. Secondly, we aimed to explore if any changes in the outcomes were different between the two groups.

Our study showed that the odds of having a good living situation were higher at 2 years of follow-up than upon enrollment into ACT for both groups, although it was only significant when adjusting for age and gender among participants with problematic substance use. Further studies should be undertaken to explore the significance of age and gender on living situation among persons with severe mental illness and problematic substance use.

Both groups experienced a reduction of anxiety and depressive symptoms, while only participants with problematic substance use had less severe overall symptoms (BPRS-E mean score)

TABLE 4 | Within-group changes from enrollment to 2 years of follow-up—Continuous variables.

	Unadjusted analysis			Adjusted analysis**		
BPRS mean score	**Mean difference***	**95% CI**	***P*-value**	**Mean difference***	**95% CI**	***p*-value**
Non-substance use group	0.14	−0.06 to 0.34	0.165	0.12	−0.08 to 0.32	0.251
Substance use group	0.23	0.06 to 0.40	**0.007**	0.20	0.03 to 0.37	**0.020**
BPRS positive symptoms						
Non-substance use group	0.07	−0.26 to 0.40	0.665	0.06	−0.27 to 0.40	0.708
Substance use group	0.09	−0.18 to 0.37	0.509	0.04	−0.24 to 0.31	0.784
BPRS negative symptoms						
Non-substance use group	0.30	0.00 to 0.60	0.051	0.25	−0.06 to 0.56	0.111
Substance use group	0.32	0.07 to 0.58	**0.011**	0.30	0.05 to 0.56	**0.019**
BPRS agitation mania						
Non-substance use group	−0.01	−0.26 to 0.23	0.908	−0.09	−0.34 to 0.15	0.451
Substance use group	0.35	0.15 to 0.56	**0.001**	0.33	0.13 to 0.54	**0.001**
BPRS anxiety/depressive symptoms						
Non-substance use group	0.30	0.03 to 0.556	**0.031**	0.31	0.04 to 0.58	**0.028**
Substance use group	0.35	0.12 to 0.57	**0.002**	0.32	0.09 to 0.54	**0.005**
GAF – Function						
Non-substance use group	−3.14	−5.56 to 0.64	**0.015**	−2.75	−5.30 to 0.20	**0.036**
Substance use group	−2.76	−4.86 to 0.66	**0.010**	−2.61	−4.73 to 0.49	**0.016**
PSF score						
Non-substance use group	−0.08	−0.46 to 0.30	0.682	−0.03	−0.42 to 0.34	0.893
Substance use group	−0.23	−0.55 to 0.09	0.164	−0.21	−0.54 to 0.12	0.221
MANSA mean score						
Non-substance use group	−0.16	−0.41 to 0.09	0.206	−0.17	−0.43 to 0.09	0.203
Substance use group	−0.07	−0.29 to 0.16	0.570	−0.07	−0.31 to 0.16	0.541
MANSA life in general						
Non-substance use group	−0.51	−0.93 to 0.09	**0.020**	−0.54	−0.98 to 0.10	**0.018**
Substance use group	−0.07	−0.46 to 0.32	0.719	−0.09	−0.49 to 0.31	0.671

**Positive mean difference indicated a reduction in scores, while negative mean difference indicated an increase in scores.*

***Adjusted for age and gender.*

BPRS, Brief Psychiatric Rating Scale; GAF, Global Assessment of Functioning Scale; MANSA, Manchester Short Assessment of Quality of Life; PSF, Practical and Social Functioning. The bold values highlight significant p-values (below 0.05).

and negative and manic symptoms (BPRS-E subscales) at 2 years of follow-up. The level of positive symptoms did not change for either group. The global level of functioning increased for both groups, but neither group experienced improved everyday practical and social functioning. Participants without problematic substance use reported a higher level of satisfaction with life in general at 2 years of follow-up, while participants with problematic substance use did not report significantly higher satisfaction. Neither group had significantly higher odds of having a meaningful daily activity after 2 years of follow-up by the teams.

Our results show that the only significant difference in change was the greater reduction of manic symptoms among participants with problematic substance use compared to participants without problematic substance use. The significantly greater reduction could partly be explained by the higher level of these symptoms among participants with problematic substance use upon enrollment. Participants without problematic substance use problems had little manic symptoms at both time points. An earlier report from this study showed that the participants reported higher satisfaction with their housing situation after 2 years of follow-up. They were also more satisfied with their employment status (having or not having competitive work) but less satisfied with their physical health after 2 years with ACT. We observed no changes in satisfaction with their mental health (27). It is important to emphasize that neither group experienced a deterioration of any outcomes in this study. This is particularly of interest because the participants with problematic substance use had ongoing and severe substance use problems and fewer involuntary and total inpatient days during ACT follow-up (28).

We expected that participants with problematic substance use would experience less favorable changes than participants without problematic substance use because of the ongoing and severe substance use (28), in line with the study by Ruppelt et al. (25). They found that patients without substance dependence experienced greater improvements in symptoms, level of functioning, and quality of life than patients with substance dependence (25). An interesting point is that their study included and secured IDDT to all participants with

TABLE 5 | Between-group changes from enrollment to 2 years of follow-up—Continuous variables.

Continuous variables	**Unadjusted analysis**			**Adjusted analysis****		
	Mean difference*	**95% CI**	***p*-value**	**Mean difference***	**95% CI**	***p*-value**
BPRS mean score	0.09	−0.18 to 0.35	0.511	0.08	−0.18 to 0.35	0.550
BPRS positive symptoms	0.02	−0.41 to 0.45	0.931	−0.03	−0.46 to 0.41	0.910
BPRS negative symptoms	0.02	−0.37 to 0.42	0.915	0.05	−0.35 to 0.44	0.801
BPRS agitation mania	0.37	0.04 to 0.69	**0.030**	0.43	0.11 to 0.75	**0.010**
BPRS anxiety/depressive symptoms	0.05	−0.30 to 0.40	0.787	0.01	−0.35 to 0.37	0.952
GAF-Function score	0.38	−2.92 to 3.69	0.821	0.14	−3.22 to 3.50	0.935
PSF score	−0.15	−0.65 to 0.36	0.568	−0.18	−0.70 to 0.34	0.503
MANSA mean score	0.09	−0.25 to 0.43	0.589	0.10	−0.26 to 0.45	0.596
MANSA life in general	0.44	−0.15 to 1.02	0.144	0.46	−0.15 to 1.06	0.143

**Positive mean difference indicated a reduction in scores, while negative mean difference indicated an increase in scores.*

***Adjusted for age and gender.*

BPRS, Brief Psychiatric Rating Scale; GAF, Global Assessment of Functioning Scale; MANSA, Manchester Short Assessment of Quality of Life; PSF, Practical and Social Functioning. The bold values highlight significant p-values (below 0.05).

substance use disorders during the follow-up period. We found that most but not all patients in need of IDDT received such treatment from the teams in our study (fidelity scores 3.0 at 12 months and 4.0 at 36 months, indicating that 60–89% of the patients in need of IDDT also receive it from the team). Additionally, we found that the availability of a substance use specialist was moderate to high (mean fidelity scores on the related items ranged 3.7–3.8) (41), but there were large variations between the teams (28), as described in *Setting*. Although some of the elements of IDDT were only moderately implemented in the ACT teams in this study, participants with problematic substance use experienced improvements similar to participants without problematic substance use.

However, the lack of differences in changes between the groups in our study is in line with a recent multisite randomized controlled trial by Urbanoski et al. (42). They investigated differences in mental health symptoms, community functioning, and quality of life among patients with and without co-occurring substance use disorder receiving Housing First in ACT or intensive case management compared to patients receiving treatment as usual (42). As in our study, the level of substance use remained high during the study period (43), but both patients with and without substance use problems experienced improvements, and the difference was not greater among patients without substance use problems (42).

A service delivery framework, such as the ACT model, is not by itself sufficient or independent of the rest of the service system. The teams need to collaborate closely with other service providers and agencies. For example, the ACT model emphasizes the importance of rehabilitation services to improve patients' possibilities for an independent living in the community, including systematically providing services to support patients' education and employment, such as the model for Supported Employment & Education (20, 44). In our study, we found that the odds of having a meaningful daily activity did not increase for our participants after 2 years with ACT follow-up. One possible explanation may be the organization of health and welfare services in Norway. Social services typically provide financial, vocational, and educational support, while mental health care traditionally focuses on symptom severity and level of functioning and treatment targeting these. Any collaboration between these services occurs on a random basis, and this fragmentation could be an obstacle for the ACT teams to provide vocational and educational services. Additionally, a model that primarily is based on the person's desire to work as the only eligibility criterion is rather new in the Norwegian care system. Such new models might be more difficult to implement, particularly in the start-up phase, as suggested by Odden et al. (41). Another possible explanation may also be that the teams were in their start-up phase during the first part of the study and had a stronger focus on crisis management and everyday coping and less focus on long-term perspective of the treatment, such as education/employment and illness management. This hypothesis may be supported by the lower level of fidelity on the items for vocational service and illness management at 12 and 36 months of operation [EP1 mean scores (SD) 3.0 ± 1.3–4.0 ± 1.0, EP2 mean scores 3.3 ± 1.6–3.6 ± 1.6, EP3 mean scores 1.0 ± 0.0–1.1 ± 0.3, EP5 mean scores 2.3 ± 0.7–2.5 ± 0.9] (41). However, for services to adapt to a more recovery-oriented approach, it is important that these aspects also get attention and focus during treatment and follow-up. It is an important political and administrative task to make sure that employment, education, and illness management is being brought to the attention of the mental health care providers.

Although we cannot exclude the possibility that the changes in part is caused by regression to the mean, it may also suggest that the ACT model can provide an important framework for delivering evidence-based psychosocial services in the community in line with the recommendations from clinical personnel and researchers (11, 45–47), the WHO (14), and the UN (15). Patients with severe mental illness and complex and comprehensive needs often receive inadequate rehabilitation- and recovery-oriented services and have difficulties in achieving and sustaining an independent life in the community (11, 45, 47).

STRENGTHS AND LIMITATIONS

The strength of our study is the inclusion of all the 12 first ACT teams that were established in Norway, and the geographical representation of both urban and rural areas. However, the observational and exploratory design does not allow us to draw causative conclusions. We also did not have a control group. Due to the multiple outcome variables used in our analyses, we increase the risk for false-positive findings. However, as this field is still in need of an increased knowledge regarding rehabilitation for persons with severe mental illness, we have chosen to present our findings as they are, but they should be interpreted with caution. We also must emphasize the possibilities of our study being underpowered as some of the results showed close to a significant change in some outcome after 2 years with ACT. Furthermore, we recruited only 42% of all patients who were enrolled into the ACT teams during their first year. There were more nonparticipants than participants with co-occurring substance use problems, and the participants had less severe symptoms and higher level of functioning than the nonparticipants (28). Therefore, we cannot exclude the possibility that the improvements experienced by our sample could be biased by an underrepresentation of a population with more severe problems. Additionally, this study has a prospective pre–post design with data collection at two time points (enrollment and 24 months), providing information regarding the participants' situation at these two time points. A more frequent data collection time (e.g., every 6 months) would have provided the opportunity to explore fluctuations over time.

By dichotomizing the outcome variables Housing Situation and Meaningful Daily Activity, we reduce the variance, but some categories had small numbers (<5) of participants; hence, the dichotomization was performed to avoid possible type II-errors. Finally, the clinical-reported data were collected by the ACT team members, thus many persons were involved in the data collection and the assessments were not blinded. This could have influenced the reliability of some of the scores.

CONCLUSION

Our study shows that not only participants without problematic substance use experience improvements in several areas relevant for rehabilitation after 2 years of ACT services. Also, participants with problematic substance use experienced significant improvements in several areas, and the improvements were similar in both groups. It is important to remember that the ACT population typically is a marginalized group that does not receive adequate and appropriate treatment, particularly those with co-occurring substance use. Our results support the understanding that ACT has a place in the continued effort toward adequate, integrated, and comprehensive community services that provide evidence-based interventions aiming to empower and to help patients with severe mental illness to achieve and to sustain an independent life. And most importantly, this includes persons with severe substance use problems.

DATA AVAILABILITY STATEMENT

The written consent from the participants does not allow for distribution of the data file to others than the research group that conducted the study. Other researchers that want access to the data may contact the principal investigator (AL), who will answer whether the requested data may be made available in a form that does not violate the written consent from the participants.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the Regional Committee for Medical and Health Research Ethics, region South East. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

TR and AL designed the national evaluation of ACT teams in Norway with significant support from SO, HS, KH, and HC. The research questions were formulated by AL, HC, and JSB. Literature search was performed by HC. Statistical analyses were conducted and interpreted by JSB. HC with substantial support from AL. HC wrote the manuscript, which was revised by AL, TR, JSB, KH, SO, and HS. All authors contributed to the article and approved the submitted version.

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SYSTEMATIC REVIEW
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The Effectiveness of Mental Health Rehabilitation Services: A Systematic Review and Narrative Synthesis

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Introduction: Mental health rehabilitation services provide essential support to people with complex and longer term mental health problems. They include inpatient services and community teams providing clinical input to people living in supported accommodation services. This systematic review included international studies evaluating the effectiveness of inpatient and community rehabilitation services.

Methods: We searched six online databases for quantitative studies evaluating mental health rehabilitation services that reported on one or both of two outcomes: move-on to a more independent setting (i.e. discharge from an inpatient unit to the community or from a higher to lower level of supported accommodation); inpatient service use. The search was further expanded by screening references and citations of included studies. Heterogeneity between studies was too great to allow meta-analysis and therefore a narrative synthesis was carried out.

Results: We included a total of 65 studies, grouped as: contemporary mental health rehabilitation services ($n = 34$); services for homeless people with severe mental health problems ($n = 13$); deinstitutionalization programmes ($n = 18$). The strongest evidence was for services for homeless people. Access to inpatient rehabilitation services was associated with a reduction in acute inpatient service use post discharge. Fewer than one half of people moved on from higher to lower levels of supported accommodation within expected timeframes.

Conclusions: Inpatient and community rehabilitation services may reduce the need for inpatient service use over the long term but more high quality research of contemporary rehabilitation services with comparison groups is required.

Review registration: This review was prospectively registered on PROSPERO (ID: CRD42019133579).

Keywords: mental health, rehabilitation, services, effectiveness, systematic review

INTRODUCTION

Most people who develop psychosis recover, but around 20% have more complex problems that require input from mental health rehabilitation services (1). The majority of this group have a diagnosis of schizophrenia, have been in contact with mental health services for many years and have had multiple acute psychiatric admissions (2).

The National Institute for Health and Care Excellence (NICE) recently published guidance on the rehabilitation of adults with complex psychosis (3). People with complex psychosis have symptoms that are persistent over a longer period and are resistant to usual treatments, they experience difficulties managing everyday activities and are likely to have additional mental and physical health comorbidities that complicate their recovery. The guideline recommends that specialist rehabilitation services should be provided for this group that includes inpatient rehabilitation and community rehabilitation teams providing specialist clinical input to people living in supported accommodation. These components should be organized into a rehabilitation care pathway and work together to support people to achieve their optimal level of independence.

Most research in this field has evaluated individual service components rather than the whole pathway. This includes two national programmes conducted in England. The REAL project (Rehabilitation Effectiveness for Activities for Life) focused on inpatient rehabilitation services and included a large cohort study. At 12-month follow-up, the majority of patients had been successfully discharged (55%) or were ready for discharge but awaiting a vacancy in supported accommodation (14%). The median length of admission in the rehabilitation unit was 16 months (4). The QuEST (Quality and Effectiveness of Supported Tenancies for people with mental health problems) project included a large cohort study that investigated outcomes for a nationally representative sample of people using mental health supported accommodation services. Over 30 months, 38% progressed from higher to lower supported settings (5). One rare example of a study investigating more than one component of the rehabilitation pathway was conducted by Killaspy and Zis [6]. This was a retrospective case note review of 141 patients of either local inpatient rehabilitation services or supported accommodation services in one NHS Trust. Over a 5-year period, they found 17 (12%) died and, of the remaining 124, 50 (40%) progressed along the rehabilitation pathway successfully (i.e., discharged from the inpatient rehabilitation unit to supported accommodation or moved from higher to lower supported accommodation services), 33 (26%) remained in supported accommodation providing the same level of support, while 41 (33%) moved "backwards" in the pathway (i.e., were admitted to hospital or moved to more supported accommodation) and only 10% of the cohort achieved fully independent living (6). Another study using the national Danish case register investigated people who moved to a registered supported accommodation service (7). They did not report move-on to more independent settings, but they did report inpatient service use and found that it reduced after the move to supported accommodation. They also found a diagnosis of schizophrenia was the strongest predictor of moving to a supported accommodation service. In summary, these findings suggest that most people using rehabilitation services stabilize and progress toward more independent settings, but a substantial proportion require longer term support.

There have been no systematic reviews of studies evaluating all components of the mental health rehabilitation pathway, but a recent review investigated the effectiveness of mental health supported accommodation (8). It categorized the included studies into three types: those evaluating deinstitutionalization programmes (studies examining the outcomes for people discharged from long term hospital admission to specialist community services); studies evaluating services for homeless people with severe mental health problems; and studies of services for people with complex longer term mental health problems who were not homeless. The strongest evidence was for services designed for the homeless population, most of which evaluated the "Housing First" approach. Unlike other supported accommodation systems, where people progress from higher to lower supported settings after demonstrating adequate ability in independent living skills (the "train and place" approach), Housing First provides people with a permanent tenancy straight away, alongside intensive, flexible support from a visiting community team.

This systematic review aimed to evaluate the international quantitative evidence for the effectiveness of mental health rehabilitation services, including hospital-based inpatient rehabilitation units, community-based rehabilitation units, community rehabilitation teams and supported accommodation services. We did not aim to review the evidence for specific psychosocial interventions that may be delivered by these services since many of these already have an established evidence base and are not necessarily delivered by rehabilitation services exclusively. Rather, we were interested in evidence for the effectiveness of the complex intervention known as mental health rehabilitation.

METHODS

Inclusion Criteria

This review included quantitative studies in the English language that reported on at least one of two important outcomes: (1) inpatient service use, and (2) move-on from the rehabilitation service to another setting. We selected these two outcomes as they are objective measures of the effectiveness of the rehabilitation pathway and have been used in previous studies of these services (4–6). The inclusion and exclusion criteria were designed using the PICOS framework (9).

Population

We included studies of adults with a diagnosis of a severe mental health problem, including schizophrenia, schizoaffective disorder, and bipolar disorder. We focused on these diagnostic groups as the vast majority of users of mental health rehabilitation services have one of these as a primary diagnosis (3). We excluded studies that focused on participants with first episode psychosis (as they were unlikely to be at the stage in their illness where they had developed long term problems requiring rehabilitation), organic psychosis, substance induced psychosis, dementia, personality disorder, depression or anxiety.

We included studies where more than 49% of participants had one of the included diagnoses, and where the mean age of the sample was between 18 and 65.

Intervention

The term "rehabilitation" has been used to describe a wide range of services and interventions in mental health. For the purpose of this review we considered a mental health rehabilitation service to be one that provided longer term care (at least 6 months) to individuals with longer term and complex mental health problems, was staffed by a multidisciplinary team (three or more disciplines), and used a biopsychosocial and person-centered approach that aimed to enable the person to gain skills for independent living and community integration. Our definition included hospital and community based rehabilitation units, community rehabilitation teams and supported accommodation services, as these include the components of a local rehabilitation pathway as recommended by NICE (3). We excluded studies that solely evaluated community services delivering assertive community treatment or intensive case management on the basis that these approaches tend to focus on people living in independent rather than staffed/supported accommodation and these models of care have been extensively evaluated (10).

Comparison

We did not use any inclusion or exclusion criteria relating to the type of comparison carried out in the study.

Outcomes

We included studies which reported on inpatient service use and/or move-on to other settings. Move-on included discharge from the rehabilitation unit to the community or from a supported accommodation service to different accommodation. Where available, we extracted the setting (type of accommodation) the individual was discharged to or moved on to.

Study Design

All quantitative studies were eligible, including prospective and retrospective observational studies, quasi-experimental studies and randomized controlled trials (RCTs) published since 1 January 2000. This date was selected to ensure a focus on studies investigating contemporary mental health rehabilitation services. Qualitative studies and case studies were excluded.

Search Strategy

We searched six online databases: CINAHL Plus, EMBASE, MEDLINE, PsycINFO, The Cochrane Library and Web of Science, using subject terms and free text searches relevant to the review population (e.g., "severe mental illness", "psychosis", "schizophrenia"), intervention (e.g., "rehabilitation" and "supported accommodation") and outcomes (e.g., "admission", "readmission", "move-on", "discharge"). The search strategy was developed by CDL and finalized after review by HK and LM. The searches were carried out on 14 June 2019 and the results exported to EndNote (version 19.2) for de-deduplication. The searches were updated on 9 July 2020.

The titles and abstracts of all studies were screened in parallel. The full texts of studies included after this stage were then screened for final inclusion. The screening was carried out by CDL and 10% of articles at both the title/abstract and full text stages were independently screened by PM. Discrepancies were discussed, and any that could not be resolved were adjudicated by HK. Forward and backward citation searches were carried out on all studies included after the full text screening. The full search strategy is available as a **Supplementary Material**.

Data Extraction

A data extraction form was used to collate data from all the included studies. We extracted meta data and other relevant details, including the year the study was published, the country where it was carried out, study design and sample selection method. We also recorded the study setting and categorized it as: (1) inpatient rehabilitation unit; (2) community rehabilitation unit; (3) community rehabilitation team; (4) supported accommodation service. We extracted data relevant to the review outcomes, including the size of the sample, the follow-up period, the number with completed follow-up, psychiatric hospitalizations and move-on to other settings. Where reported or where it could be derived, the ratio and percent of participants with a specific outcome (e.g., the proportion of participants who moved to a more independent setting or who had a hospitalization during the follow-up period) was recorded.

Quality Assessment

We used Kmet's standardized quality assessment criteria to assess all the included studies (11). We selected this tool because it can be used with quantitative studies using various study designs. It includes 14 criteria for RCTs and 11 criteria for non-RCTs, each being scored as meeting the criterion fully (2), partially (1) or not at all (0). The scores for each item are summed, divided by the total possible score and multiplied by 100 to produce a linear score out of 100. Two researchers, the lead author (CDL) and a PhD student (SL), independently assessed a randomly selected 10% of included studies, compared and discussed their ratings and differences before independently assessing a second set of studies, again a randomly selected 10%. The agreement rate on the second set was 91% (89/98 ratings). The remaining 80% of included studies were then assessed by CDL.

Data Synthesis

Being discharged from an inpatient rehabilitation service to the community or, for people in community supported accommodation services, moving from higher to lower levels of supported accommodation, are markers of successful rehabilitation. However, remaining at the same level of supported accommodation is an indicator of stability and can also be regarded as a positive outcome, albeit a less positive one than a move to a lower level of supported accommodation. We therefore planned to conduct meta-analyses on the following three outcomes:

1. Positive move-on (number of people who moved to a more independent setting during the follow-up period as a proportion of the total number followed-up).

2. Maintained community placement (number of people during the follow-up period who either stayed at the same community placement, moved to a setting with a similar level of support, or moved to a more independent setting, as a proportion of the total number followed-up).
3. Hospitalization (number of people who were hospitalized during follow-up as a proportion of the total number followed-up).

Most of the included studies were observational in design and reported the review outcomes as frequencies and/or proportions. To pool these proportions we used the "metaprop_one" command in Stata 14 (12), with a random-effect model. However, heterogeneity, calculated using the I^2-test (13), was high (i.e., $> 50\%$) (14), and so it was not possible to pool results, as the diversity of the results from the included studies would result in a meta-analysis estimate between those of the actual study estimates and would not give an accurate summary of results. We examined the studies by length of follow-up, to see whether this was a source of heterogeneity, but high levels of heterogeneity persisted. There are several other possible explanations for this heterogeneity, including variation between the studies in quality score, study design, and the different healthcare systems operating in the countries where included studies were conducted. We therefore proceeded by carrying out a narrative synthesis following the guidelines by Popay et al. (15).

First, we carried out a preliminary synthesis of the included studies focussing on the type of service studied and the remit of the service. Next, we explored consistencies in the results between studies, with consideration of the study design, country, sample size, follow-up period and quality assessment score (greater emphasis was placed on larger, higher quality studies). Finally, we reviewed the robustness of the synthesis by checking the main findings and the strength of these findings.

Review Registration

This review was prospectively registered on PROSPERO (ID: CRD42019133579).

RESULTS

The initial database searches returned a total of 13,685 studies after de-duplication. Following screening of titles and abstracts, 13,028 studies were excluded. The full texts of the remaining 657 studies were screened, of which a further 612 were excluded, almost half (292) because they did not adequately describe the service or intervention, or because it was not a rehabilitation service. The number of studies included from the initial database searches was therefore 45. An additional four studies were included following the updated database search in July 2020, and 15 further studies were included following screening of reference lists and citations of the 49 included studies, producing a final total of 64 included studies. **Figure 1** shows the number of studies at each stage.

The studies were conducted in 14 different countries: 24 in Europe (eleven UK, four Italy, three Netherlands, three Denmark, and one each in Ireland, Spain and Sweden), 19 in the United States (US), seven in Australia, five in Japan, four in Canada, three in Israel and one each in Singapore and Turkey. The vast majority were observational in design (24 prospective and 25 retrospective) and the remainder were randomized controlled trials (15). The mean quality score was 78.4 (SD 16.1). The lowest score was 40.9 and the highest was 100 (scored by 11 studies).

In regards to settings, 20 studies evaluated inpatient rehabilitation services (11 hospital based and nine community based), eight studies investigated community rehabilitation teams, 35 studies investigated supported accommodation services (one of which also investigated inpatient rehabilitation units and community rehabilitation units), and one study investigated outcomes for people who had used a rehabilitation service without specifying the setting.

The included studies could be broadly categorized as evaluating services with one of three remits. The first category, and largest in terms of the number of studies included with more than half the total (16), comprised studies investigating contemporary rehabilitation services. These were services designed for people with complex and longer term mental health problems with the specific aim of supporting them to live in more independent settings. The second category were studies investigating services for people who were homeless and had a severe mental health problem. There were 13 of these studies, all of which were conducted in the US or Canada. The last category accounted for 18 of the included studies and focused on deinstitutionalization programmes or services designed to provide a less institutional setting for patients discharged from long stay hospitals. These studies were mainly published prior to 2010. **Supplementary Table 1** shows details of all the included studies, including the category as just described, country, setting, study design, review outcomes and quality score.

Studies of Contemporary Mental Health Rehabilitation Services

This group of studies was the most varied in regards to setting and findings. Of the 33 studies in this category, two investigated community rehabilitation units, six investigated inpatient rehabilitation units, nine investigated community rehabilitation teams, 15 investigated supported accommodation services and one study did not specify the type of rehabilitation service investigated. Twenty-seven of the 33 studies were conducted as observational studies and were based in countries with different healthcare systems (eight US, seven UK, three Denmark, three Italy, two Australia, two Israel, one each in Canada, Ireland, Japan, Netherlands, Singapore, Spain, Sweden and Turkey). The mean Kmet quality score was 82.5 with eight studies scoring 100. **Supplementary Table 1** provides more details regarding these studies, including a brief description of the aim of the study and relevant outcomes for our review.

The most consistent positive outcome was an improvement in inpatient service use for patients after they had an inpatient rehabilitation admission. Bunyan et al. (16), a study with a high quality score (100), compared hospital days 1-year before admission and 1-year after discharge for 501 patients from

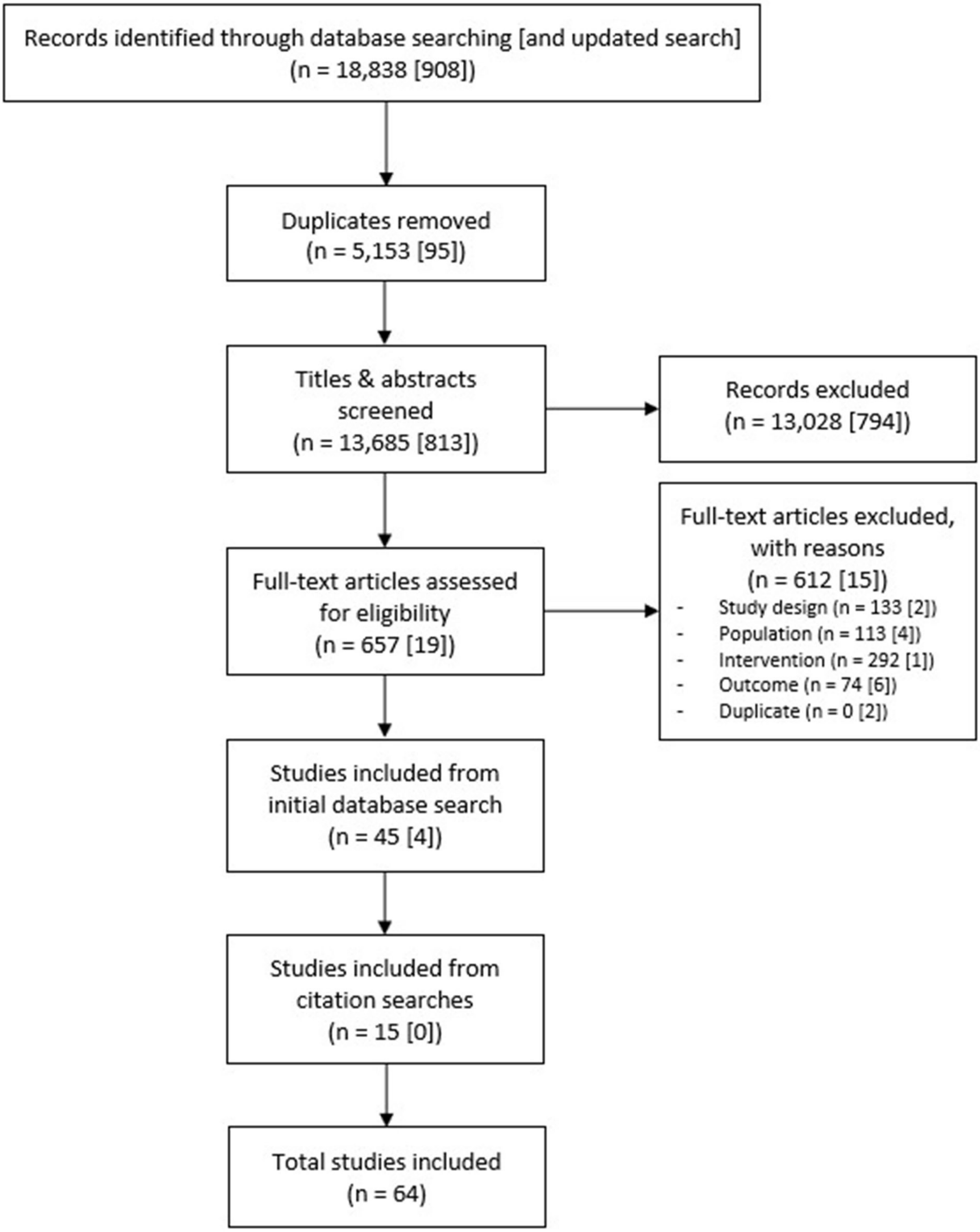

FIGURE 1 | PRISMA flow diagram.

five community based rehabilitation units in Australia. The mean hospital days reduced from 101.54 (SD 113.01) before the rehabilitation admission to 70.39 (SD 118.33) afterwards. Similar findings were reported by Bunyan et al. (16) investigating a hospital based inpatient rehabilitation unit in London (16), and studies evaluating a Canadian inpatient rehabilitation unit (17) and a US rehabilitation programme (18).

A few studies reported length of inpatient rehabilitation admission before successful discharge, but the findings were inconsistent. Killaspy et al. (4) conducted a large, high quality (quality score: 95.5) cohort study involving 50 rehabilitation units across England and 339 patients, and found that most (55%) had been discharged without subsequent readmission or community placement breakdown at 12-month follow-up. Three smaller studies (n = 43, two inpatient units in England; n = 50, one inpatient unit in Ireland; n = 20, one inpatient unit in England) with lower quality scores (81.8, 83.3, and 59.1), reported variable rates of successful discharge: 88% at 12-month follow-up (17), 38% at 5-year follow-up (18) and 60% at 6.5-year follow-up (19).

Studies evaluating supported accommodation have reported good outcomes in terms of reduced inpatient service use. Nordentoft et al. (7) (quality score: 95.5) used the Danish national health register to investigate inpatient days for people before and after a move to supported accommodation and found a large reduction (mean 167 days in the year prior to move vs. 27 days in the year after). However, the authors were critical of the quality of care provided in supported accommodation and described these services as the "new asylums in the community" (p. 1251), with poorly defined treatment, variable staffing levels and a similar cost per day to long-stay hospitals. However, this study did not formally assess the quality of care of these services. Concerns about the content of care in supported accommodation services were also made by Anderson et al. (19) (quality score: 77.3), who found only half the residents in their sample received interventions other than medication. This was however one of the older studies published (2001) and may not be representative of current services or of services beyond the studied sample. Four other studies also reported reduced inpatient service use after a move to a supported accommodation service (quality scores: 63.6, 68.2, 72.7, 95.5) (20–23).

Cohort studies of users of mental health supported accommodation have shown that move-on to lower levels of support is somewhat limited, with the majority of residents requiring extended periods of support. Killaspy et al. (5) (quality score: 100) carried out a national cohort study in England involving 87 supported accommodation services and 619 clients. Over a 2–5 year follow-up period, fewer than half moved-on to more independent settings, despite most services having a remit to support people to move-on within 2 years. This rate differed according to the three main types of supported accommodation. Residential care provided the most intensive level of support with 24-hours staffing and daily necessities such as meals and medication catered for and here, 10% (15/146) of clients moved on. Supported housing services, with staff on-site up to 24 hours a day, had a stronger emphasis on enabling clients to gain skills for independent living and around one third (96/244) of clients moved on. Floating outreach services provided less intensive, visiting support to clients living in their own independent tenancies. Staff visited weekly on average to provide practical assistance with managing the tenancy and mental health support. Around two-thirds (132/196) of floating outreach clients moved-on over the 30 months. After taking account of differences in clinical characteristics of clients of the three types of supported accommodation, the adjusted odds ratio for move-on from floating outreach compared to residential care was 7.96 (95% CI 2.92–21.69) and 2.74 (95% CI 1.01–7.41) when compared to supported housing.

Limited move-on from supported accommodation was also found in studies based in Italy (quality scores: 100, 81.8, 86.8) (24–26), the state of Philadelphia in the US (quality scores: 85.0, 63.6) (27, 28) and in a single low quality study in Spain (quality score: 54.5) (29). However, despite limited "forward" moves toward greater independence, de Mooij et al. (30) (quality score: 100) found 78% of their sample of 262 people with severe mental illness changed address at least once over a 6-year period and 26% had changed address four or more times.

Four studies investigated predictors of successful move-on from inpatient rehabilitation units and/or supported accommodation. A large, high quality Israeli study (n = 2,842, quality score: 100) found higher self-reported quality of life amongst patients of inpatient rehabilitation services was associated with lower rates of re-hospitalization (31). Killaspy et al. found that the degree to which inpatient rehabilitation services (quality score: 100) (4) and supported accommodation services (quality score: 100) (5) adopted a recovery orientation was associated with successful discharge/move-on. They also found the promotion of people's human rights to be associated with successful move-on from supported accommodation services (5). Shorter hospitalizations prior to the period of inpatient rehabilitation have also been found to predict successful discharge (32) (quality score: 77.3).

Results of studies evaluating community rehabilitation teams (33–39) were mixed. Most investigated the effectiveness of a particular rehabilitation programme taking place in the community: Illness Management and Recovery (IMR) (35, 37, 39, 40). The IMR programme primarily comprises psychoeducation and promotion of personal recovery delivered via weekly group sessions over the course of 9 months. None of these studies found the intervention to be associated with a reduction in inpatient service use. A high quality (quality score: 100) RCT involving 198 participants comparing IMR with TAU also found no difference at 12-month follow-up in terms of functioning, symptoms or emergency room visits (37).

Four other studies we identified also investigated community rehabilitation teams, two of which were published recently (34, 36) but differed considerably in quality scores (59.1 and 100). The high quality study reviewed health records to investigate 4-year outcomes for 193 patients of an inner-city team in the UK that supported people living in 24-hour supported accommodation (34). The authors found that fewer than one-in-four (n = 45, 23.3%) clients moved on to more independent accommodation. The lower quality study investigated the outcomes of a case management model based on rehabilitation principles in Turkey. They found that for 30 patients, their psychiatric hospital admission rate reduced from a mean of 1.33 (SD 1.06) over a 2-year period before case management, to 0.23 (SD 0.56) over the same length of time during case management.

A very small ($n = 8$) and low quality study (quality score: 57.7) conducted in Israel examined the effectiveness of cognitive behavioral therapy (CBT) for people with a diagnosis of schizophrenia participating in a day treatment programme based on psychiatric rehabilitation principles, by randomizing them to CBT (day treatment plus CBT) or TAU (day treatment only). They found no difference in the number of hospital admissions between groups (33). A much larger study ($n = 370$) (quality score: 80.8) also conducted in Israel investigated the effectiveness of clinical case management for "revolving door patients," which included providing training of skills necessary for daily living tasks, but failed to show it to be effective in reducing hospital admissions when compared to TAU (41).

Only one study included more than two components of the rehabilitation pathway, and was briefly described in the Background section. Killaspy and Zis (6) (quality score: 95.5) used retrospective case note review to investigate the outcomes of 141 patients of three inpatient rehabilitation units, two community rehabilitation units and four supported accommodation services, all located in two inner city London boroughs. Over 5 years, 40% of those with complete follow-up (50/124) had progressed along the rehabilitation pathway, 27% (33/124) had maintained their placement and 38% (41/124) had a "backwards" move.

Studies of Services for Homeless People With Severe Mental Health Problems

This group of studies recruited participants that were either homeless or at risk of homelessness. The mean Kmet quality score was 83.8 with three studies scoring 100. The majority (8/13) of these studies were RCTs and all but one evaluated models of supported accommodation. The exception was a study investigating a long-term compulsory inpatient unit based in the Netherlands specifically for people who were homeless and had a treatment resistant severe mental health problem and a substance misuse problem (42). All the other studies in this category were conducted in the US or Canada and most (10/13) investigated either the "Housing First" (43–49) or "Full Service Partnership" (50–52) programme. **Supplementary Table 1** provides more details regarding these studies.

The Full Service Partnership model is very similar to the Housing First approach, and Gilmer et al. describes it as a Housing First program that does "whatever it takes to improve residential stability and mental health outcomes" (p.646) (50). Gilmer et al. (quality score: 100) (52) found that Full Service Partnership programmes with higher fidelity to the Housing First model were more effective in reducing the number of days spent homeless. Low fidelity programmes resulted in a mean reduction of 34 days per year spent homeless (95% CI−55 to −13) whereas high fidelity programmes had a mean reduction of 87 days (95% CI−109 to −64).

All the Housing First (43–49) and Full Service Partnership studies (50–52) reported the approach to be effective at reducing homelessness/improving housing stability. The strongest evidence was reported by Aubry et al. (quality score: 100) (44). They carried out a multi-center RCT in Canada, allocating 950 participants to Housing First or TAU (access to all the locally available housing services, except for Housing First) and tracked their housing status and health outcomes over 2 years. At the final 2-year follow-up, 74% (95% CI = 69 to 78%) of Housing First clients were in stable housing compared to only 41% (95% CI = 35 to 46%) of those receiving TAU. Housing First clients were also housed quicker and rated their accommodation as better quality.

The two studies in this category that did not investigate Housing First or Full Service Partnership programmes also found that the model being evaluated had a positive impact on housing stability. Lipton et al. (53) (quality score: 85.0) studied the effectiveness of supportive housing in New York City. They defined the term "supportive housing" to describe all housing services with integrated support for people with a severe mental illness. At 2-year and 5-year follow-up, 64% and 50% of their 2,937 participants, respectively, were in stable housing. The other study compared a non-integrated model of care (housing and mental health support provided by two separate agencies) with an integrated approach (where the two components were provided by the same agency) and found participants randomized to the integrated approach at 18-month follow-up had spent more days in stable housing (quality score: 80.8) (54).

The one study in this category which did not evaluate a model of supported accommodation investigated a long-term compulsory inpatient ward based in the Netherlands, "Sustainable residence (SuRe)," reported the numbers of different types of discharge from the service over a 4-year period (quality score: 86.4) (42). Most of the discharges were to a less restrictive setting, including voluntary psychiatric wards and supported housing (69/165, 42%), but a minority were transferred to a more supported setting (16/165, 16%).

Studies of Deinstitutionalization Programmes

The overall findings of the 18 included deinstitutionalization studies was that the process of closing the large institutions and discharging long stay patients to specialist community services was successful. All except one of the studies were observational; one study randomly allocated patients to continued hospitalization or to a group home (55). They were conducted in a number of different countries (five Australia, four Japan, four UK, two US, and one each in Israel, Italy and Netherlands), and had lengthy follow-ups but were generally of low quality (mean quality score: 67.1, none of the studies scored 100). Only three studies followed patients for less than 2 years post-discharge (56–58). **Supplementary Table 1** provides more details regarding these studies.

Most patients were clinically stable in the community (58–64) with improvement in positive symptoms of psychosis (55, 61, 65), social functioning (55, 58, 65), and challenging behaviors (60) at final follow-up. One study reported greater improvements in social functioning and clinical symptoms in patients who were more severely unwell at recruitment (66). Importantly, patients were also more satisfied with their living arrangement in the community when compared to hospital (61, 67). Following their initial discharge to the community, a substantial proportion of patients subsequently moved to more independent settings with less than 24-hour staff supervision (60, 68–70). However, conversely, Chopra et al.'s small study of 18 people reported patients were less satisfied with their accommodation following the subsequent move, and were often still living in "restrictive" settings and unhappy about making recurrent moves (67). Two studies found older patients were less likely to do as well (57, 58). This may partly be explained or conflated with the finding that a longer stay in hospital is associated with unfavorable outcomes (71) and the fact that older patients of the institutions were more likely to have more severe, longer term mental health problems than younger patients.

Trieman et al. (64) tracked the "difficult to place" patients who were the last to be discharged from a North London asylum. At 5-year follow-up they had similarly positive outcomes to those who had been discharged earlier, including clinical stability and a reduction in challenging behavior. Many had moved on from their initial community placement to a more independent setting. Similar findings were reported by two smaller studies in the US (56, 72).

DISCUSSION

The 64 included studies were too heterogeneous for meta-analysis, therefore a narrative synthesis was carried out. Heterogeneity was mainly due to the broad concept of mental health rehabilitation in research but there were also differences between studies regarding the country where they were based and the health care systems which operate in these countries. To facilitate the narrative synthesis, we categorized studies based on the broad remit of the service or intervention which the study evaluated.

The Contemporary Rehabilitation Studies

The most consistent positive finding was reduced inpatient service use after an inpatient rehabilitation admission (16, 17) or move to a supported accommodation service (7, 20–23) compared to the period before the admission/stay. However, these studies were mostly observational and only one (evaluating supported accommodation) included a comparison group (7). The findings should therefore be interpreted with caution. Given that randomized controlled trials are likely to be unfeasible (73), further studies with valid comparison groups are needed to control for possible confounders at the patient and service level.

Several studies found that people were unable to move on from supported housing within the expected timeframes (5, 24–28). This suggests that these timeframes require review and that services should be commissioned to be able to provide more flexible and individually tailored support, with the understanding that an individual may continue to require the current level of support in the longer term. This finding may also suggest that there is a lack of appropriate accommodation for people to move on to but further research measuring readiness for move-on as well as actual move-on are needed to confirm this as an explanation. The provision of more, appropriately resourced, floating outreach or Housing First services could help to address this by providing permanent accommodation for people leaving supported housing. Furthermore, the visiting support provided to people in their own homes through the floating outreach approach can be tailored according to fluctuations in the individual's needs and, if resourced appropriately, can provide an alternative to the stepped supported housing pathway that necessitates recurrent moves for people as they progress in their recovery. However, it is essential that when targeted at people with longer term and complex mental health needs, such models are combined with specialist clinical input from a community rehabilitation team able to offer intensive case management or assertive community treatment (44). It is also important that service planners acknowledge that some individuals have such high support needs that even an augmented floating outreach approach such as this will not provide adequate support. In addition, some individuals prefer to live in congregate settings with staff on-site rather than individual tenancies. A variety of supported accommodation models will therefore be required within a local area, based on the needs of the local population, as recommended by the recent NICE guideline on rehabilitation for adults with complex psychosis (3).

The recent NICE guideline recommends that local rehabilitation services should include community rehabilitation teams (3). We found few studies evaluating this model of care but consistent amongst them was the finding that the use of the Illness Management and Recovery programme did not reduce the need for inpatient services (35, 37, 39, 40). Only one study investigated the effectiveness of community rehabilitation teams with regard to supporting clients to achieve successful move on to more independent accommodation (34). Further high quality research is needed to investigate the effectiveness of these services. Other outcomes may also need to be considered given the limited number of moves to more independent settings.

Services for Homeless People With Severe Mental Health Problems

Most of the studies of the homeless population were trials of the Housing First model conducted in North America and they all reported positive outcomes with regard to housing stability (43–52). A recent systematic review and meta-analysis supported this finding but found less clear evidence for other outcomes including mental health symptoms, substance misuse and employment (74). Indeed, the largest trial included in our review found no difference between groups in days hospitalized, number of emergency department visits, arrests or mental health symptoms, when compared to TAU (44). There is strong evidence Housing First does address homelessness amongst people with severe mental health problems, but further research is required on other outcomes and on other populations. If found effective for non-homeless people with complex longer term mental health problems, then it should be considered as a component in the mental health rehabilitation pathway.

The Deinstitutionalized Population Studies

The deinstitutionalization studies, in the main, reported positive outcomes. Most individuals were successfully discharged from long stay hospitals to community settings without any clinical deterioration (58–65). There were however a substantial minority who required high levels of community support long term (64, 70, 71). This is in keeping with the findings from the recent cohort studies included in our "contemporary rehabilitation" group of studies that showed a relatively low rate of move-on to more independent settings and that people with higher levels of complex needs are likely to require long term supported accommodation. The success of the deinstitutionalization of mental health care is well-established, and critics who claimed that the closure of long term hospitals led to homelessness and imprisonment of people with mental health problems (75, 76) have been disproven by high quality cohort studies (77).

Strengths and Limitations

The main strength of this systematic review is its comprehensiveness. Six online databases were searched, which returned 13,685 articles after deduplication in the original search and 813 in the updated search. This was supplemented by forward and backward citation searches of included studies. Screening and quality assessments were corroborated by a second researcher and the review was prospectively registered. Its main limitation was that the included studies covered a broad range of rehabilitation services from a number of different countries with different healthcare systems, and were, unfortunately, too heterogeneous for meta-analysis.

The term "rehabilitation" has been used in mental health to describe a range of different approaches, and depending on how the intervention has been described, it was not always possible to distinguish a mental health rehabilitation service from a general mental health service. We may therefore have excluded studies that could be relevant for our target population. Future research in this field would benefit from providing a clear description of the content of the complex intervention known as mental health rehabilitation that is being evaluated, alongside a detailed description of the people it targets. Although our review included a range of approaches to mental health rehabilitation, our outcomes were chosen as relevant markers of success across services. Nevertheless, additional outcomes beyond the scope of this review are likely to be important and useful for future research, such as improvement in functioning, and quality of life.

Our review aimed to review the quantitative evidence for mental health rehabilitation services and as such, we excluded qualitative research. We have now established that the current quantitative evidence in this field does not lend itself to meta-analyses, at least on our selected outcomes, and further reviews should therefore consider inclusion of relevant qualitative studies that may provide important contextual and experiential evidence. Finally, we did not include gray literature, trial registers or non-English language studies and therefore relevant studies from these sources would not have been identified.

CONCLUSIONS

The field of mental health rehabilitation research is heterogenous and lacking in some areas. There is reasonable evidence to suggest that inpatient rehabilitation and supported accommodation can reduce inpatient service use for people with more complex and longer term mental health problems, but people do not move on from supported accommodation at the expected rate. The strength of these findings is limited to observational studies that for the main part do not use comparison groups. There is a lack of studies which consider the whole rehabilitation pathway. There is quite strong evidence for the Housing First model in reducing homelessness but its effectiveness in regard to other outcomes and when targeting people with complex mental health problems who are not homeless remains unclear.

DATA AVAILABILITY STATEMENT

The full search for each database is included in the **Supplementary Materials**. Please contact the authors for details of the articles rejected at each stage of screening. All other original contributions provided by this study are included in the article/**Supplementary Material**.

AUTHOR CONTRIBUTIONS

CD-L, HK, and LM conceived and designed the review. CD-L drafted the protocol and search strategy, which was reviewed and revised by HK, LM, and PM. CD-L screened the search returns and 10% were independently screened by PM at both the title/abstract stage and full text stage. Quality assessment of included studies were conducted by CD-L and 20% were independently assessed by SL (see Acknowledgments). CD-L drafted the article, which was reviewed and revised by all authors. All authors approved the final version of the 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.2020.607933/full#supplementary-material

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CASE REPORT
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Case Report: Successful Implementation of Integrative Cognitive Remediation for Early Psychosis

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Many individuals demonstrate functionally relevant impairment in neurocognition as well as social cognition early on in the course of their psychotic disorder. There is robust evidence supporting cognitive remediation as an effective treatment of cognitive dysfunction in schizophrenia. Increasingly it is accepted that earlier treatment is associated with better outcome and that it is important to systematically assess and treat cognitive dysfunction before the cognitive and functional disabilities are fully realized. However, the clinical availability of these interventions remains sparse. As we move forward with implementing evidence-based interventions into multi-component treatment for early psychosis, it is important to reflect on experience as well as evidence. This case report aims to describe the implementation of an integrative cognitive remediation program in coordinated specialty care (CSC) for early psychosis in Iceland and investigate whether the intervention is sustainable in a CSC setting. Data on the number of patients treated, facilitators trained, groups conducted, and funding was used to assess the sustainability. The results show that since initial implementation in 2016, the intervention has been routinely available as part of standard care, with over 100 patients having received the treatment. The report discusses key factors in the successful implementation of the program.

Keywords: schizophrenia, functional outcome, social cognition and interaction training, compensatory cognitive training, rehabilitation

INTRODUCTION

Psychotic disorders are severe mental disorders that usually emerge in early adulthood, disrupting educational and employment opportunities which can result in a high rate of disability pensions (1). Neuro- and social-cognitive deficits are hallmark traits of psychotic disorders and have strong and consistent functional associations (2–6). Cognitive remediation (CR) is an evidence-based treatment for these cognitive impairments (7–9), and clinical practice guidelines published in countries around the world now recommend CR (10–12). However, clinical availability of CR remains sparse, resulting in an unsatisfactory gap between science and clinical practice (13).

It is generally accepted that earlier treatment of psychotic disorders is associated with better outcomes (14, 15). Therefore, the aim of early intervention in psychosis (EIP) services has been to minimize and shorten the severity of the first psychotic episode and facilitate recovery through early detection and intervention during the first 3–5 years following onset (16). The recommended setup for these EIP services is a multi-element program, known as Coordinated Specialty Care (CSC) that offers a range of evidence-based treatments (17). CSC programs differ from standard care in that a multidisciplinary team of mental health professionals provides evidence-based treatments that are tailored to the needs of each patient in a coordinated, integrated fashion instead of referring patients to different health care providers for each service. Evidence shows that synergistic pairing of psychosocial interventions and CR enhances the functional benefits of the intervention (8), making CSC programs especially attractive for implementation of CR. However, methods to assess and treat cognitive dysfunction are not a systematic part of CSC programs in countries around the world. Implementation research on CR is a relatively new field, but prior research indicates that CR can be successfully implemented in large-scale, geographically diverse, and publicly funded clinical settings (18). Although implementation models have been developed, investigations are needed into whether these models facilitate the implementation of CR in diverse settings. Describing different experiences with implementing CR is thus important.

In this report, we examine whether an integrated neuro- and social-cognitive remediation (ICR) program is sustainable in a CSC setting. More specifically, we sought to detail the implementation process and identify key factors contributing to successful implementation of ICR into the EIP service. We will delve into the case's implications for future service development and provide tips for success.

METHODS

The implementation process started in 2016. **Figure 1** shows the timeline for implementation process. We describe the design and implementation in the five stages of CR implementation previously described and applied in other settings (19). To identify the key factors affecting the implementation of ICR, we administered a web-based survey to one consulting psychiatrist and three clinical directors directing the EIP service during the implementation process. They were asked to rate the importance of factors regarding the inner setting, adaptability, and relative effectiveness on a 5-point Likert-scale, with 1 = not important, 2 = slightly important, 3 = neutral, 4 = important, and 5 = very important. They also had the opportunity to comment on each question to further elaborate their answer. The procedures were deemed to be exempt from ethical review by the Landspitali—The National University Hospital's (LUH) ethical board.

Setting and Population

The EIP service is part of LUH and is the only EIP service in Iceland. It is centralized in Reykjavik and serves the whole country, which has a population of around 367.000, with the majority (227.000) living in Reykjavik metropolitan area. The target population is individuals between 18-30 years old, experiencing their first episode of psychosis and are within five years of symptom onset. The service is intended for individuals whose acute psychotic symptoms have remitted or been stabilized, as well as those who continue to experience severe symptoms related to their first episode. Before being accepted into service, an ICD-10 diagnostic criteria for schizophrenia, schizotypal and delusional disorders (World Health Organization, 2008) is determined by an intake team of psychiatrists and other specialists in clinical adult psychology. Demographics as well as cognitive, clinical and functional outcomes of the patient population in service at the EIP have been described previously (5). The service is free of charge, with an inpatient (7 beds) and an outpatient service treating around 110 patients at any one time. It bases its care on a CSC program with a staff of 40 and of which 12 are case managers providing cognitive-behavioral case management. Upon entry, each patient receives care from a case manager, a supportive counselor, a psychiatrist, and a multidisciplinary team. All patients receive an individually based treatment including one or more of the following treatment components: family support, medication, psychoeducation, exercise, individual placement and support, and/or cognitive behavioral therapy for psychosis. No cognitive training was available prior to the implementation.

Programmatic Elements

ICR was based on the following three cognitive remediation approaches: Neuropsychological Educational Approach to Remediation (NEAR) (20), Compensatory Cognitive Training (CCT) (21), and Social Cognition and Interaction Training (SCIT) (22). ICR program components have been described elsewhere (9), but are summarized in **Table 1**.

Implementation of ICR

Stage 1: Exploration

A timeline for the implementation process is provided in **Figure 1**. At the exploration stage, research evidence supporting the need for CR in early psychosis was examined and presented by author OGV to the staff. A randomized controlled trial was designed to investigate the immediate and long-term efficacy of the intervention and feasibility. A CR program was selected, and an informal cost-analysis was conducted. The program had to meet the cognitive needs of the patients and be feasible for the EIP service. Instead of using the existing neuro- and social-cognitive interventions, we decided that integrating NEAR, CCT, and SCIT would be the best fit and contain several key elements facilitating sustainability. The intervention is group-based and relatively short (12 weeks), which may be more economically feasible than an individual-based approach or a longer treatment. Other treatment programs at the EIP service are run twice per year, in spring and fall, and ICR would fit well into that scheduling. It was also important that the computerized training would be

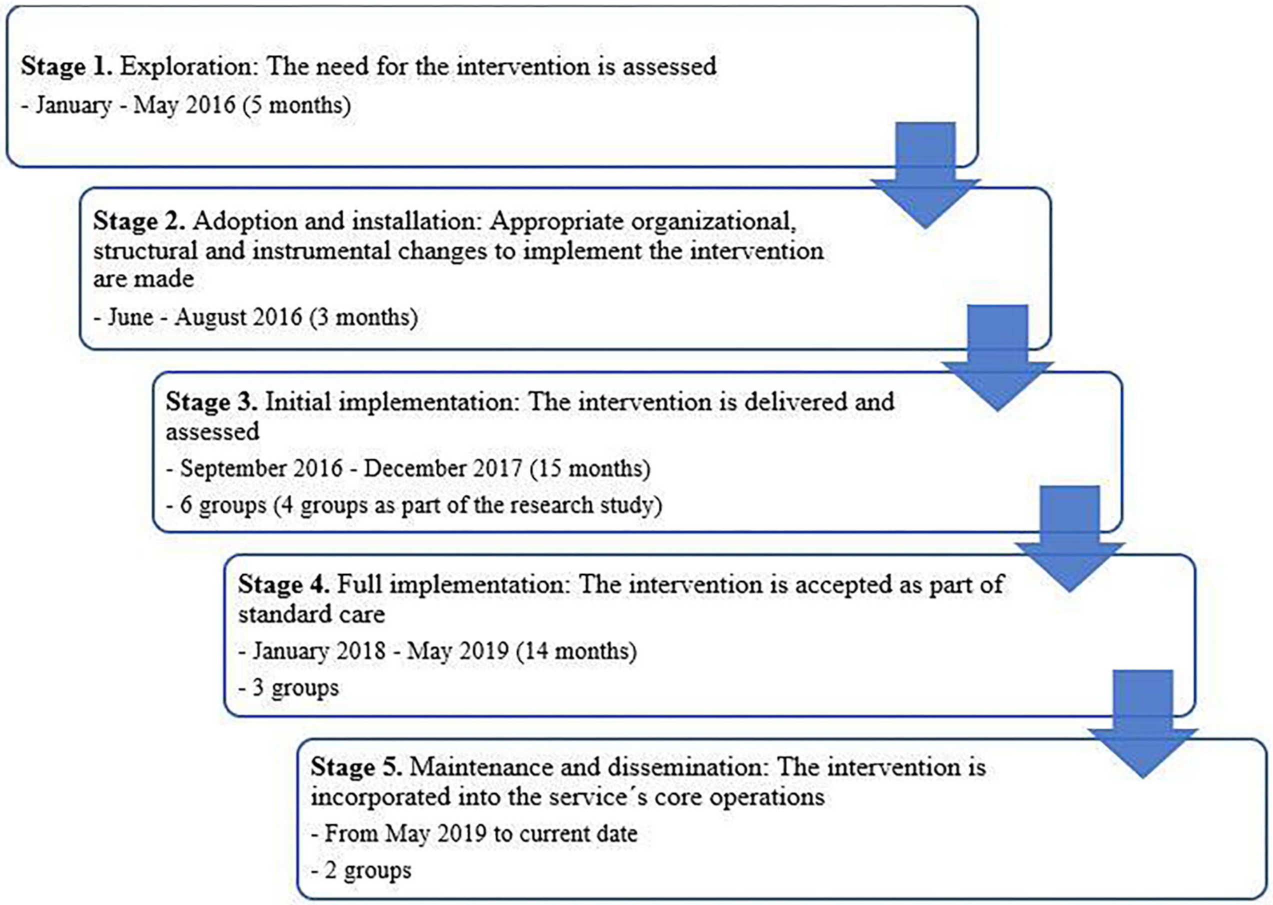

FIGURE 1 | Timeline for the five stage of the implementation process.

conducted on iPads to reduce the start-up cost and space required for training, as well as to allow the group to be mobile, i.e., be conducted in different rooms at the clinic.

Cost estimates included labor and non-labor expenses. The intervention and training for the intervention would be undertaken as part of the facilitators' general role in the service, with therapy time guaranteed and case weighting altered to facilitate staff capacity to undertake this work. Non-labor costs included the cost for acquiring intervention-related material (iPads, access to computer programs, calendars and treatment manuals). Ten iPads were donated by a charitable organization, but the EIP service covered all other start-up costs and provided space and staff for the intervention.

Stage 2: Adoption and Installation

An implementation team was formed and OGV was identified as the implementation leader who would translate the material, coordinate assessments, and provide the intervention as part of her clinical work. The ICR team met twice a month and included two psychologists, three occupational therapists, two supportive counselors, and four master's or bachelor level psychology students. Training was provided by OGV, who had received training by authors DLR and EWT. In addition to reading the treatment manuals, facilitators were required to complete a 2-days course covering relevant topics and three online CR training courses provided by Columbia University (www.teachrecovery.com). To ensure fast and easy referrals, one of the ICR facilitators attended the weekly team meetings prior to implementation. At these team meetings, the treatment team, with the support of the ICR facilitator, would review the need of each patient within the team for ICR.

Stage 3: Initial Implementation

In the initial implementation stage, adjustments were made to the intervention based on the results from the research study and feedback from facilitators, the staff members that served as practice partners for participants during the research study, and participants. Results from the research study suggested ICR-associated improvements in verbal memory (Logical memory I; $p = 0.018$, $N^2 = 0.13$), cognitive flexibility (Trails B; $p = 0.004$, $N^2 = 0.19$), working memory (digit span working memory span; $p = 0.014$, $N^2 = 0.13$), theory of mind (Hinting Task; $p = 0.035$, $N^2 = 0.10$), and attributional style (Ambiguous Intentions Hostility Questionnaire; $p = 0.025$, $N^2 = 0.13$), but not for social

TABLE 1 | ICR program components.

Components	SCIT, CCT, and NEAR
Frequency	Twice a week
Duration	12 weeks
Intensity	120 min
Mode of delivery	SCIT group-session, 15 min CCT strategy training, 45 min NEAR computer training
Group format	Closed group
Materials	iPads and access to at least two computer programs, a whiteboard, calendars, posters, video vignettes and a device to project them, speakers to play the audio portion of video vignettes, the SCIT PowerPoint slideshows and a computer and LCD projector from which to project them
Homework	Meeting with a practice partner, a staff member at the EIP service, once a week to complete exercises related to the ICR material
Staff	A leading facilitator and a co-facilitator

SCIT, Social Cognition and Interaction Training; CCT, Compensatory Cognitive Training; NEAR, Neuropsychological Educational Approach to Remediation.

functioning or clinical symptoms. However, at 12-months follow-up, there were significant improvements on most neuro- and social-cognitive domains as well as in employment outcomes (9, 23). ICR was well received by participants, with 77.6% attendance rates. Most participants (93%) regarded the length of each session (2 h) as appropriate, and 79% thought that the length of the intervention (12 weeks) was appropriate. We, therefore, decided to make no changes to the length or intensity of the intervention. SCIT was rated by participants as the most useful approach (44.2%), followed by the NEAR approach (37.8%) and CCT strategies (18%). These results reinforced our belief that an integrated neuro- and social-cognitive program would better fit the complex needs of an early psychosis population than a neuro- or social-cognitive approach alone. Only 33% thought that exercises with a practice partner were helpful, and 43% would have preferred to have no practice partner exercises at all. However, we decided to keep them as part of ICR, as other research has established the importance of transfer techniques in enhancing generalization to everyday life (24).

ICR facilitators participated in two focus group sessions, at mid-treatment and after treatment. They were asked open questions with general prompts regarding experience with computer programs, session content, the intervention delivery, as well as the time and practicality of the intervention. The facilitators reported a lack of understanding of the purpose of each computer game and how to link material from each approach (SCIT, CCT, and the computer games) to the participant's goals. The training program was modified to include more training and reading material on this subject. Facilitators mentioned that some participants were tired after about 30 min of computer games and did not want to train any longer. We decided to discuss this issue with group members and reached a consensus that staying for 45 min was optimal, but participants would try to notice when they were getting tired and then take breaks more often. Furthermore, facilitators would reinforce the use of CCT strategies for attention/vigilance in these situations.

TABLE 2 | Maintenance and sustainability outcomes of ICR.

Outcome	Total
Groups conducted	11
Patients treated	109
Facilitators trained	8

Practice partners were staff members and participated in one focus group session after treatment. The average completion rate for the practice partner exercises during the research study was 63%. The practice partners reported forgetting to meet with participants. We therefore added to the ICR protocol a weekly e-mail reminder to practice partners, that also included information on the content of each session. The practice partners also thought it was difficult to help participants complete exercises where they needed to come up with their own examples. More concrete examples were therefore added to the practice partner manual.

Stage 4: Full Implementation

Following the initial implementation, ICR was accepted as part of expected care at the EIP service. We presented the rationale for fully implementing ICR at the EIP service to clinical directors and staff at the EIP service, as well as the chief managers of the psychiatric departments at LUH. Other advantages of implementing the intervention were also presented. These included routine access to cognitive assessments and the staff's learning and applying the ICR strategies in their work with patients. The maintenance of the intervention was also discussed, including such topics as therapists' training, training for trainers, funding, and fidelity checks.

RESULTS

Maintenance and Sustainability of ICR

Since the first ICR groups were conducted in 2016, ICR has been running twice a year since the fall of 2016. Sustainability outcomes are shown in **Table 2**. Ongoing organizational and financial support from LUH was secured. The EIP service would continue to provide program facilitators to deliver ICR as part of their clinical work and space to run the groups. LUH would cover all other costs, including purchasing iPads and access to online computer programs.

Key Factors Affecting the Implementation of ICR According to Clinical Directors

The results from the survey are shown in **Figure 2**. On average, the most important factors were staff attitude toward implementation and the patient's needs (cognitive dysfunction in the patient population). The factors scoring lowest were conducting the intervention on-site and positive feedback from patients.

The directors also commented further on some of their answers. One clinical director thought that educating the staff on the rationale behind the intervention prior to the

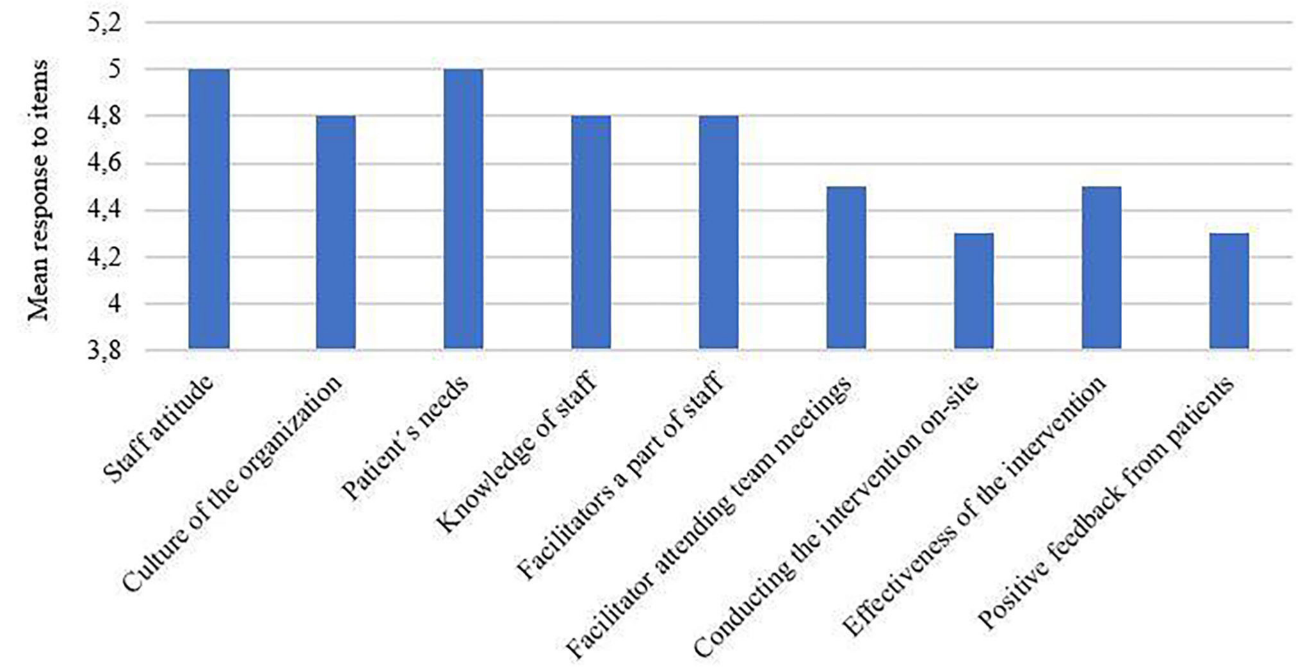

FIGURE 2 | Clinical director's mean response to factors affecting the implementation process.

initial implementation helped facilitate a positive attitude toward the implementation. This was important to the successful implementation because "staff members were more willing and engaged in helping clients with attendance and motivation." Regarding perceived effectiveness, one clinical director commented: "It was important that the intervention included different approaches and could potentially benefit most, if not all, patients, whether it was by improving their cognition or social skills.... It was great to see how the patients gained more confidence in their cognitive and social abilities during and after the intervention." The clinical directors generally thought that having EIP staff that attended team meetings as facilitators was important because "they were able to quickly inform the patient's team if attendance was dropping, as well as how the patient was performing in the intervention." Conducting the intervention on-site was not rated as highly important by all clinical directors. One thought that conducting the intervention on-site was highly important because "it provided for a safe and familiar environment for the patients," whereas another clinical director did not find this as important as long as the ICR facilitator attended team meetings to "give feedback to the patient's treatment team."

DISCUSSION

This paper describes the implementation of ICR into a multicomponent EIP service in Iceland. ICR has become an integral sustainable component of the EIP service, with over 100 patients treated since 2016. The full implementation process took 37 months. Although this timeline is consistent with the 2- to 4-years project plan required for most such implementation projects (25), it is quite long. The implementation process could be shortened by ensuring funding and educating staff earlier in the process. In addition, by not conducting a research study, the implementation process could be shortened significantly. However, the advantages of doing a research study while implementing the treatment would be lost. Also, this would not be optimal when implementing novel treatments such as ICR.

Perhaps the most profound lesson is the importance of developing a positive attitude among clinical directors and staff toward implementation of new treatments such as ICR. Staff attitudes toward evidence-based practices have been found to be a common barrier to implementation. We took several steps throughout the implementation process to get the whole staff "on board" and to enhance their enthusiasm about the intervention. OGV held several lectures at different stages of the implementation process to educate the staff on cognitive dysfunction in the patient population, potential benefits of the intervention, the staff role in the implementation process, results from the research study, as well as feedback from patients.

Incorporating the intervention into the EIP service by including staff as facilitators and practice partners and to conduct the intervention on-site may also be important factors. Being involved in the intervention empowered them with more strategies they could apply with and teach their patients. Generalizing the strategies used in ICR may be of value. For example, there was a general need at the EIP clinic to educate both the staff and the patients on effective compensatory strategies to help patients with cognitive dysfunction with treatment adherence. It may be interesting to investigate whether the staff at the EIP service is more positive and open to new treatments that further enhance the service than staff at other psychiatric units at LUH. A flexible, open-minded attitude may be a requirement for clinical directors and staff at the multi-component and highly individualized CSC, making this setting optimal for implementation of evidence-based treatments. It may be that conducting a research study as part of the implementation process may have aided in the successful implementation of ICR, as has been demonstrated previously (18).

Lessons Learned and Tips for Success

- Educate clinical directors and staff on the rationale for the intervention prior to implementation.
- Decide on an acceptable timeline for implementation and adjust the process accordingly.
- Conduct an on-site research study on the acceptability and effectiveness of the intervention as part of the implementation process.
- The EIP service should invest in ICR by allowing a staff member to serve as ICR team leader and oversee the referral process, training of therapists, and conducting the treatment.
- An ICR facilitator should attend team meetings at the EIP service to help identify patients that could benefit from ICR and give feedback on how participants are performing.
- Choose a program that fits the EIP service regarding length and cost. Allow for modifications of the intervention so that it is user-friendly and interoperable with the EIP service.

Limitations

This report describes the implementation process in a particular service setting and the results may therefore not generalize to other services. These results are particularly relevant to EIP services using a CSC model. Although cognitive remediation is often promoted as cost saving in the long run, a formal cost-effectiveness analysis was not conducted.

CONCLUSION

The underlying premise of this study was that access to ICR should be available routinely to all patients diagnosed with first episode psychosis in Iceland. The successful implementation and integration of ICR into the only EIP service in the country gives hope that this goal may be realized. As we move forward with implementing ICR into CSC programs, it is important to reflect on experience as well as evidence. As EIP services work to provide evidence-based and individualized care to improve the functional outcomes of their patients, they should consider implementing and integrating CR and social-cognitive training into their standard care. Further evaluation of the ICR program and dissemination to other clinics is an important next step for informing the potential systematic integration of ICR in other settings and for other patient groups.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

AUTHOR CONTRIBUTIONS

OV was involved in the study design and writing the manuscript. BM, ET, and DR were involved in the study design and editing the manuscript. ES and BG were involved in editing the manuscript. All authors contributed to the article and approved the final manuscript.

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IPS in Supported Housing: Fidelity and Employment Outcomes Over a 4 Year Period

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Background: People with severe mental illness have difficulties finding and maintaining competitive employment. This is particularly so for those living in supported housing who, by definition, have significant day-to-day support needs: in the Netherlands only 3 to 5% of people with serious mental health problems who live in supported housing are competitively employed. To support these people in finding and maintaining competitive employment, Individual Placement, and Support (IPS) was introduced within supported housing services in the Netherlands in 2015. As this is the first country that broadly implemented IPS in supported housing settings, this paper will focus on the first results regarding feasibility and effects on employment in clients of IPS in this sector.

Methods: We investigated the feasibility and employment outcomes of delivering IPS in supported housing services using fidelity assessments and quarterly employment outcomes on IPS program level within eight supported housing organizations, and compared these with 21 mental health treatment organizations in the Netherlands over a 4 year period. We investigated possible reasons for our findings and their implications through qualitative evaluations of the IPS fidelity assessors' notes and additional focus groups with IPS specialists and coordinators from supported housing services and fidelity assessors.

Results: The overall fidelity scores indicated reasonable implementation of the IPS model within both supported housing services and mental health services. However, there were differences between services with regard to specific fidelity items; mental health treatment organizations scored higher for team integration, whereas supported housing services scored higher for rapid job search and caseload size, diversity of jobs, and employers. Our qualitative data suggested that the difference in team integration between the two sectors was due to differences in their organizational and financial structures, as well as in the specific needs of their clients. Conversely, supported housing services had better connections with employers which facilitated more rapid job searching and greater diversity in employment opportunities. The average total client

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employment rate did not significantly differ; and was 25.8% per quarter in supported housing services and 29.6% in mental health treatment services.

Conclusion: Implementing IPS in supported housing settings is both feasible and effective.

Keywords: employment, IPS, supported housing, severe mental illness, fidelity

INTRODUCTION

People with severe mental illness face particular difficulties with meaningful social participation; research suggests that factors such as hospitalization, time spent in therapy, stigma and a lack of relevant skills, experiences, and educational opportunities, may limit the capacity and opportunity of individuals with severe mental illness to participate in valued social activities (1–3). This situation is worse for people with serious mental health problems living in supported housing services, who, by definition, have higher support needs with regard to activities of daily living and interpersonal skills and are at greater risk of social exclusion (1, 4–7). Employment is a key factor in the social recovery of persons with mental health problems; being in competitive employment can have numerous advantages for clients, beyond financial independence, such as improved mental health, self-esteem, personal recovery, and quality of life (8, 9). However, employment rates are lower amongst persons with severe mental illness compared to the general population. National surveys in the Netherlands have found that only 10–17% of clients with severe mental illness under the care of mental health services were competitively employed, with no indication that this situation is improving over time (10–12). For clients living in supported housing, the employment rate is even lower; despite there being no differences with clients from mental health treatment services in financial disincentives for working in terms of any impact on the individual's welfare benefits, only 3–5% of this group are reported to be competitively employed (5). These data highlight the need for broader implementation of vocational rehabilitation and supported employment services within the Netherlands, specifically targeting people with severe mental illness living in supported housing settings.

Individual Placement and Support (IPS) is a specific model of supported employment, developed to assist people with mental health problems find and maintain competitive employment (13). The model involves embedding a specific employment specialist within a community mental health team, and follows eight basic principles: the goal of competitive employment for clients; zero exclusion, and eligibility based on client choice; attention to client preferences; rapid job search; integration of employment services and mental health treatment; personalized welfare benefits counseling; targeted job development; and individualized, long-term support. IPS has been implemented in many parts of the world, across North America, Europe, Asia, and Australia, and its effectiveness has been extensively investigated (14). Numerous systematic reviews and meta-analyses have demonstrated the superiority of IPS over traditional vocational services, across multiple employment outcomes [see (15–19)]. In the Netherlands, a 30-month randomized controlled trial demonstrated the positive effects of IPS, with the intervention leading to greater improvements in employment outcomes for people with severe mental illness, when compared to other vocational services (9). Until recently, IPS had primarily been implemented within mental health treatment settings in the Netherlands; since 2015, however, it has also been implemented in supported housing services. Offering IPS in this setting extends the accessibility of evidence based vocational services, and complements existing vocational services already provided by supported housing staff.

In the current study, we examined IPS model fidelity and employment outcomes in supported housing services and mental health treatment services. Additional qualitative investigations were conducted to assist interpretation of the findings. The main research questions were: 1. How is IPS implemented in supported housing services, compared to mental health treatment services? 2. How are differences in the implementation of IPS between supported housing and mental health treatment services explained? 3. What are the employment outcomes in supported housing services?

METHODS

Context

In the Netherlands, most clients (72.5%) of supported housing services receive floating outreach (ambulatory support), where support is provided in the service users own home (5). The remaining services offer accommodation-based support, typically organized as grouped apartments, with or without a shared living room and kitchen, and staff support available up to 24 h a day on-site (20, 21). In terms of the Simple Taxonomy for Supported Accommodation, these reflect Type 4 (individual accommodation, low/moderate support and no staff on-site), Type 2 and Type 3 services (congregate setting, high to moderate support, strong emphasis on move-on) (7). All service types have a strong emphasis on recovery and rehabilitation. Supported housing services provide support of varying intensity, addressing a range of service user needs including practical assistance with medication management, personal care, cooking, cleaning, and financial administration, and rehabilitative support to gain the skills and confidence to manage these tasks and to achieve personal goals in social and vocational domains (22, 23). Supported housing service users in the Netherlands are predominately male (65%), with a mean age between 44 and 50 years; approximately half have a primary diagnosis of a psychotic disorder (5, 22). Most supported housing clients (81%) receive additional treatment from mental health treatment services and, before moving to supported housing, most had either been hospitalized (36%) or living independently (43%) (22, 24). Any client with severe mental illness living in supported housing or receiving care from a mental health treatment organization who wishes to seek competitive work, is eligible for IPS.

Sample

In the Netherlands, IPS outcome data and fidelity assessments have been collected nationally since 2016. IPS fidelity assessments are conducted by nine trained fidelity assessors, unaffiliated with the assessed IPS program, or organization. Program fidelity is assessed every 2 years and employment outcome data are collected every 3 months by the local IPS coordinator. The data are sent to the data coordinator of Phrenos Center of Expertise (LdW), who completes a quality check of accuracy, and consistency with the outcome reporting manual, before processing the data. For the current study, we analyzed data collected up to the end of 2019, including outcome and fidelity data from eight IPS programs within supported housing services, and 21 IPS programs within mental health treatment organizations.

Measurements and Data Collection

Fidelity

During a full-day visit at the IPS program, two fidelity assessors conduct fidelity assessments according to the procedure described by Becker et al. (25). Data are collected from five different sources: interviews with IPS specialists, staff members, clients, family members and directors, observations of team meetings and vocational unit meetings, and review of program documents and client records. After the completion of the visit, assessors independently complete a 25-item fidelity rating scale (see below). Any rating discrepancies are discussed to achieve consensus ratings. Qualitative remarks are added for each item, when relevant, and programs receive a report with recommendations to help them improve quality.

IPS fidelity is assessed using the 25-item IPS fidelity scale (25). Each item is rated on a 5-point scale, ranging from 1 (no implementation) to 5 (full implementation), with intermediate numbers representing progressively greater degrees of implementation (25). The total score of the IPS fidelity scale is generated by summing all item scores, producing a total score ranging from 25 to 125 points. The scale developers defined benchmarks to assess descriptive labels regarding IPS fidelity (26). IPS programs scoring between 74 and 99 are considered to have 'fair' fidelity, programs scoring between 100 and 114 have "good" fidelity and programs scoring between 115 and 125 have "exemplary" fidelity. IPS programs scoring below 74 are considered to provide "no IPS," indicating that IPS was not implemented in accordance with the model (25). The IPS-25 scale has good internal consistency ($\alpha = 0.88$) and moderate predictive validity ($r = 0.34$) (26). Previous reports indicate that fidelity scores are positively associated with employment outcomes, and that improvement in fidelity scores predict improvement of program-level employment outcomes over time (26, 27). Therefore, fidelity assessment is a crucial element for quality improvement of IPS services.

Program Characteristics and Employment Outcomes

Data relating to program characteristics and employment outcomes are collected using a Dutch translation of the IPS Quarterly Employment Reporting Form (28). The form is administered quarterly and allows for the collection of the following data: the number of clients that received IPS, the number of clients that were competitively employed; the number of clients that left IPS services, and; the number and full-time equivalent of all employment specialists working in the IPS program. Employment rates are considered to be the main program outcomes, and are calculated by dividing the total number of clients competitively employed during the quarter by the total number of clients on the IPS workers' caseload over the same time frame. The total caseload is a dynamic cohort with clients leaving and joining the program at variable times. In order to achieve consistency in the reporting and interpretation of each variable on the Employment Reporting Form, definitions are provided in a manual for use by all IPS programs.

Data Management

Each IPS program initiated IPS fidelity reviews, and submitted outcome data, at different time points between 2016 and 2019; programs were also at varying stages of implementation. Therefore, we used the first outcome report and fidelity assessment of each IPS program as the baseline measurement for our longitudinal analysis of each outcome. As each IPS program commenced at a different date, the time span of the data available per program differed; very few programs were in operation for the entire 4 year period. As such, we were only able to collate an overview of program characteristics and employment outcomes over the first 3 years from the start of implementation of IPS.

Focus Groups

As described above, fidelity assessors are able to provide comments on each item of the IPS fidelity scale. We used thematic analysis to analyze these comments, with the intention of providing a more complete understanding of the context and reasoning that led to the fidelity scores. We also organized a focus group with IPS assessor trainers and employment specialists involved in IPS coordination within the eight supported housing services. In this focus group, we discussed the validity of our findings from the thematic analysis, and explored participants' experiences and challenges with IPS implementation in supported housing services, with particular emphasis on fidelity items that differed between the sectors. The focus group was co-facilitated by DR and LW, with one co-facilitator taking notes. The focus group was audio recorded.

Ethical Approval

As per national legislation and standards, including the Medical Research Involving Human Subjects Act, and the Netherlands Code of Conduct for Research Integrity, ethical approval was not required for this study. The research relied on secondary analyses of national available data; focus group participants provided informed consent to participate.

Data-Analysis

Quantitative Data Analysis

Program Characteristics and Employment Outcomes

We performed descriptive analyses of program characteristics (i.e., the number of clients receiving IPS, the number of clients newly enrolled in IPS, the number of clients that ended IPS services and the number and full-time equivalent of all employment specialists in the IPS programs), and employment outcomes in the first 3 years after the start of implementation of IPS, for supported housing and mental health services separately. Differences between supported housing and mental health services for each year were analyzed using a one-way analysis of variance (ANOVA). We controlled for the assumptions of homoscedasticity and normality of residuals.

Fidelity

We also conducted descriptive analyses on all individual fidelity item scores and the total score for supported housing and mental health services separately. As explained above, we used the first fidelity assessment for all IPS programs, for reasons of comparability. We analyzed differences between supported housing and mental health services using a one-way analysis of variance (ANOVA); the alpha level was set at 0.10 due to the small number of supported housing services (8) vs. mental health services (21). Stevens (29) suggests that when small group sizes are involved it is necessary to adjust the alpha level to compensate and set a cut-off of 0.10 or 0.15 rather than the traditional 0.05.

Qualitative Data-Analysis

Fidelity Assessors' Notes

To understand more about the implementation of IPS in supported housing settings, and why aspects of the IPS approach may have differed from its implementation in mental health treatment organizations, we used thematic analysis (30) to analyze the remarks fidelity assessors made to substantiate their scores. Two researchers (LG, DR, & LW) independently read all assessor comments from the fidelity score forms, with a focus on items where fidelity scores differed between the two sectors. They labeled all factors explaining the fidelity scores as either a facilitator or barrier, according to the content of the assessors' notes. They also compared the assessor notes for each IPS service with the official fidelity criteria. The inter-rater reliability (κ) of the results was calculated and discrepancies were discussed to achieve consensus.

Focus Group

Two trained IPS fidelity assessors, and seven employment specialists involved in IPS coordination in six supported housing organizations, participated in the focus groups. Focus group data were analyzed by reviewing the notes relating to each fidelity item, and by listening and re-listening to the focus group recording to ensure the participant comments were written down and interpreted correctly. Thematic analysis was used to analyze the data (30). The co-facilitator (LW) performed an interrater check. Any identified discrepancies were discussed and double checked using the audio recording, until consensus was reached.

RESULTS

Quantitative Data-Analysis

Program Characteristics

IPS programs provided by supported housing services employed fewer IPS specialists, had fewer new enrollments and smaller caseloads, compared with mental health services (**Table 1**). For example, by the third year of the programs, IPS programs in mental health treatment organizations employed 10 IPS specialists (on average), who worked with an average 156 clients; in comparison, IPS programs in supported housing services employed 5.5 IPS specialists (on average), who worked with an average of 43 clients. This equates to an average caseload 15.6 vs. 7.8 per IPS specialist respectively.

Employment Outcomes

The quarterly employment rate for IPS programs in supported housing services was, on average, 25.8% of the total caseload and in the mental health treatment organizations this was 29.6%. There were no significant differences in employment rates between supported housing and mental health services in the first ($F = 3.41$; $df = 1$; $p = 0.07$), second ($F = 0.63$; $df = 1$; $p = 0.43$), and third year ($F = 1.20$; $df = 1$; $p = 0.28$) after the start of IPS (**Figure 1**).

Fidelity Assessment

The average IPS fidelity score in supported housing was 94.63, indicating "fair" implementation; this was not significantly different from the average score of mental health service provided IPS programs (M = 94.63; SD = 9.36 vs. M = 90.43; SD = 11.25; $F = 1.23$; $p = 0.28$; **Table 2**).

However, there were differences in some individual fidelity item scores. Mental health treatment organizations scored significantly higher on Items 1 and 2 of the organization section: "*Integration through team assignment*" and "*Integration through frequent team contact*," and Item 14 of the services section: "*Assertive engagement and outreach by integrated treatment team*." On the other hand, IPS fidelity was higher in supported housing services for Item 1 of the staffing section: "*Caseload*," and items 4, 8, and 9 of the services section: "*Rapid search for competitive job*," "*Diversity of job types*," and "*Diversity of employers.*" See attachment for the total IPS-25 scale, including explanation for each item.

Qualitative Data-Analysis

Below, we present possible explanations for the differences in individual fidelity score item, derived from thematic analyses of the IPS fidelity assessors' notes (see **Table 3**) and focus group data. In addition, results from the focus groups are presented here to explain, expand upon, and/or give context to the audit data. We calculated inter-rater reliability by coding the themes that were rated equally by both assessors with "1" and themes

TABLE 1 | Program characteristics over time[a].

Year	Quarter	Number of clients within the IPS program				Number of newly enrolled clients*				Number of clients that ended IPS services				Number of IPS specialists employed in each IPS program			
		Supported housing		Mental health		Supported housing		Mental health		Supported housing		Mental health		Supported housing		Mental health	
		M (SD)	N	M (SD)	N	M (SD)	N	M (SD)	N	M (SD)	N	M (SD)	N	M (SD)	N	M (SD)	N
Year 1	1	30.22 (17.91)	9	89.55 (69.04)	20					3.00 (2.67)	8	8.23 (8.67)	13	4.75 (1.67)	8	8.50 (4.93)	12
	2	33.78 (21.19)	9	97.25 (60.20)	20	8.75 (8.63)	8	17.85 (16.52)	13	3.50 (4.04)	8	12.29 (15.68)	14	4.38 (1.92)	8	9.21 (4.21)	14
	3	39.56 (23.03)	9	100.42 (57.49)	19	7.38 (7.37)	8	13.29 (16.28)	14	2.38 (2.45)	8	11.67 (16.34)	15	4.75 (1.39)	8	8.38 (4.40)	16
	4	54.50 (27.33)	8	100.37 (63.68)	19	10.43 (9.93)	7	27.40 (27.59)	15	2.57 (2.70)	7	13.38 (16.26)	16	5.00 (2.52)	7	8.25 (4.64)	16
Mean total year 1		39.09 (23.32)	9	96.81 (61.73)	20	8.78 (8.33)	8	19.74 (21.46)	15	4.71 (1.81)	8	8.57 (4.47)	16	2.87 (2.92)	8	11.52 (14.51)	16

Mean differences (ANOVA) between supported housing and mental health in year 1

F	df	p	F	df	p	F	df	p	F	df	p
28.64	1	0.001	5.51	1	0.02	10.72	1	0.001	21.52	1	0.01

Year	Quarter	Number of clients within the IPS program				Number of newly enrolled clients*				Number of clients that ended IPS services				Number of IPS specialists employed in each IPS program			
		Supported housing		Mental health		Supported housing		Mental health		Supported housing		Mental health		Supported housing		Mental health	
		M (SD)	N	M (SD)	N	M (SD)	N	M (SD)	N	M (SD)	N	M (SD)	N	M (SD)	N	M (SD)	N
Year 2	1	56.71 (35.80)	7	101.17 (68.59)	18	3.50 (5.36)	6	26.19 (36.46)	16	2.80 (3.11)	5	14.76 (18.89)	17	4.43 (2.51)	7	7.88 (4.96)	17
	2	57.57 (49.04)	7	115.33 (81.11)	18	11.86 (15.57)	7	30.76 (35.64)	17	4.20 (4.27)	5	15.88 (17.33)	17	5.29 (2.93)	7	9.06 (5.66)	17
	3	44.00 (33.63)	6	127.44 (91.29)	18	5.83 (6.52)	6	29.12 (29.73)	17	4.50 (5.65)	6	16.35 (17.17)	17	4.83 (2.79)	6	9.88 (5.32)	16
	4	47.67 (21.83)	3	144.78 (91.28)	18	13.33 (11.93)	3	30.33 (31.12)	15	6.33 (5.69)	3	18.88 (22.62)	16	7.67 (5.51)	3	11.33 (5.72)	15
Mean total year 2		52.48 (36.64)	7	122.18 (83.38)	18	8.14 (10.77)	7	29.11 (32.64)	17	4.26 (4.47)	6	16.43 (18.69)	17	5.22 (3.10)	7	9.48 (5.43)	17

Mean differences (ANOVA) between supported housing and mental health in year 2

F	df	p	F	df	p	F	df	p	F	df	p
15.06	1	0.000	8.70	1	0.004	7.87	1	0.006	12.62	1	0.001

Year	Quarter	Number of clients within the IPS program				Number of newly enrolled clients*				Number of clients that ended IPS services				Number of IPS specialists employed in each IPS program			
		Supported housing		Mental health		Supported housing		Mental health		Supported housing		Mental health		Supported housing		Mental health	
		M (SD)	N	M (SD)	N	M (SD)	N	M (SD)	N	M (SD)	N	M (SD)	N	M (SD)	N	M (SD)	N
Year 3	1	43.67 (20.60)	3	143.88 (83.88)	16	0.33 (.58)	3	25.86 (33.91)	14	5.67 (6.03)	3	15.87 (17.94)	15	6.67 (5.51)	3	9.87 (6.30)	15
	2	43.00 (20.07)	3	150.33 (87.09)	15	5.67 (1.15)	3	21.86 (24.02)	14	6.00 (1.73)	3	19.13 (15.67)	15	7.00 (6.08)	3	10.31 (5.68)	13
	3	42.50 (38.89)	2	152.33 (91.51)	15	7.50 (10.61)	2	23.73 (30.87)	15	4.50 (3.54)	2	18.67 (17.09)	15	3.50 (.71)	2	9.93 (5.90)	15
	4	44.00 (42.43)	2	179.00 (110.36)	14	3.50 (4.95)	2	40.21 (38.65)	14	2.00 (1.41)	2	21.00 (14.60)	14	3.50 (.71)	2	10.64 (5.75)	14
Mean total year 3		43.30 (23.50)	3	155.80 (91.49)	16	4.00 (4.88)	3	47.84 (32.23)	15	4.80 (3.58)	3	18.63 (16.08)	15	5.50 (4.25)	3	10.18 (5.77)	15

Mean differences (ANOVA) between supported housing and mental health in year 3

F	df	p	F	df	p	F	df	p	F	df	p
14.67	1	0.000	5.39	1	0.023	7.24	1	0.009	5.96	1	0.017

[a] *M and SD are the means and standard deviations of the descriptives of IPS programs. N is the number of IPS programs of which data was available.*

* *Newly enrolled people could not be calculated for the first quarter after implementation because calculations are based on previous quarters and therefore not applicable for the first quarter after start of implementation.*

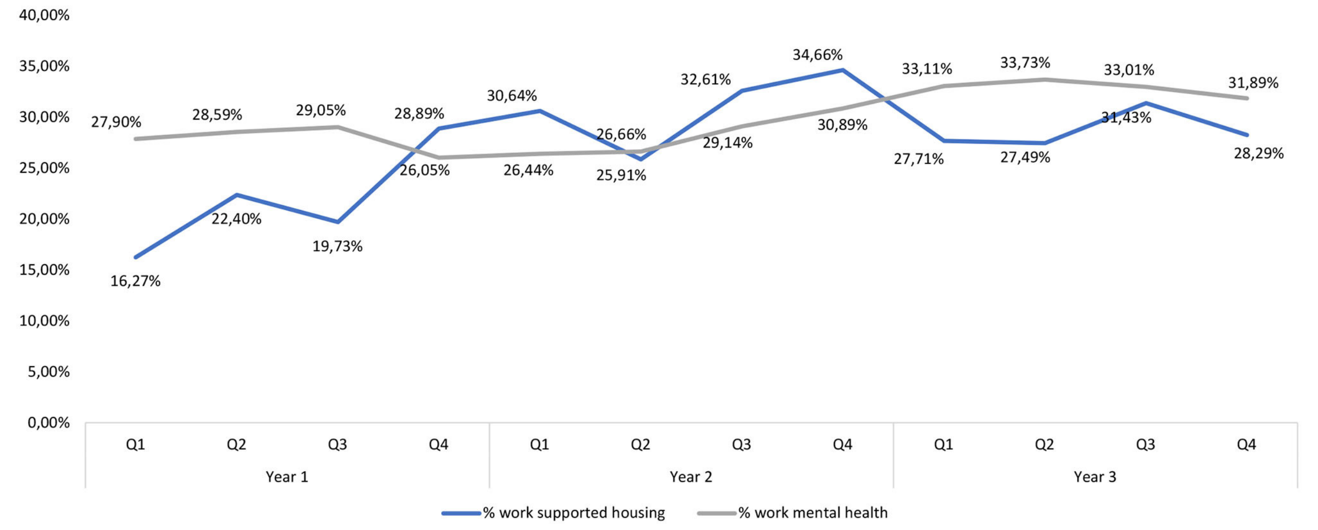

FIGURE 1 | Employment rate as percentage of the total caseload of IPS programs in mental health and supported housing.

that needed consensus with "0"; this coding system allowed us to calculate inter-rater reliability. The inter-rater reliability of the analysis of the assessors notes between the assessors was moderate ($\kappa = 0.56$).

Higher Fidelity IPS Items in Mental Health Services

Integration Through Team Assignment

We compared the average score and assessors' notes for the item "*Integration through team assignment*" for the IPS programs in mental health and the IPS programs in supported housing. The score on this item is based on the number of teams that one IPS specialist is assigned to (on average) and the percentage of clients in the caseload that come from these assigned teams (i.e., not from multiple other referrals). The rationale is that with a low number of assigned teams, and by receiving most referrals via these teams, the integration of IPS services and treatment is higher. The thematic analysis showed that IPS specialists in mental health treatment more often serve one or two mental health treatment teams; conversely, IPS specialists in supported housing services were less integrated, often serving more than two teams. In the majority of the IPS programs within mental health treatment organizations, at least 90% of the caseload of individual IPS specialists was from one or two mental health treatment teams, compared with a minority of the IPS specialists working with supported housing services. In the focus group, IPS coordinators in supported housing services explained this finding as being due to the fact that clients living in supported housing tended to have more intensive support needs, and supported housing teams also tended to be smaller, with fewer clients per team than mental health treatment teams; as such, IPS specialists in these settings had to work across a number of locations or teams in order to achieve a full caseload (maximum of 20 clients).

An IPS specialist explained this as follows: *"That has also to do with the geographical spread and the number of clients. We are organized by self-organization and work in small teams of 8 to 12 team members. In our branch, [as an IPS specialist] you need at least five teams for your caseload."*

Integration Through Frequent Team Contact

The thematic analysis of the IPS fidelity assessors' notes showed that IPS specialists were only able to fully integrate within team meetings in a relatively small number of supported housing services, whereas those working in mental health treatment organizations tended to attend the weekly mental health treatment team meetings more often, and actively participate in treatment team meetings more frequently. They also helped the team think about employment for people who hadn't yet been referred to supported employment services more often than IPS specialists working with supported housing services. In the focus groups, IPS specialists explained that due to the practical barriers for team assignment mentioned above, the contact intensity between IPS specialists with teams and their members, as well as active participation in meetings was lower in supported housing services. Most IPS specialists described this as a structural factor that was characteristic of the sector and could not be solved. Despite this, the IPS assessor acknowledged that in some supported housing organizations quite good integration was achieved. Difficulties with team integration exist for IPS specialists in supported housing services, when teams are small and located in rural areas so IPS specialists cannot fill their caseload by integrating with a maximum of two teams. Furthermore, participating in the regular team meetings was more difficult in some services than others. For instance, some supported housing services did not have a formal, regular team meeting. Some IPS specialists solved this by building on their personal contact with team members, and "being available" for the team when they had employment or education related queries about their clients; these steps served to increase their integration within the service.

TABLE 2 | Fidelity assessments mental health vs. supported housing organizations.

	Supported housing			Mental health			Differences (ANOVA)		
	M	**SD**	***N***	**M**	**SD**	***N***	***F***	***df***	***p***
Total score	94.63	9.36	8	90.43	11.25	21	1.23	1	0.28
1. Staffing									
Item 1. Caseload size*	4.75	0.71	8	3.76	1.45	21	3.37	1	0.08
Item 2. Employment services staff	4.75	0.71	8	3.76	1.64	21	2.15	1	0.15
Item 3. Vocational generalists	4.38	0.92	8	4.43	0.87	21	0.02	1	0.88
2. Organization									
Item 1. Integration through team assignment**	2.38	0.74	8	4.29	1.19	21	17.14	1	0.00
Item 2. Integration through frequent team contact**	2.25	1.04	8	3.88	1.05	21	11.06	1	0.00
Item 3. Collaboration between employment specialists and Vocational Rehabilitation counselors	3.75	0.46	8	3.95	0.80	21	0.02	1	0.88
Item 4. Vocational unit	3.50	1.20	8	3.00	1.34	21	0.41	1	0.53
Item 5. Role of employment supervisor	1.88	1.36	8	2.05	1.43	20	0.29	1	0.59
Item 6. Zero exclusion criteria	4.00	0.00	8	3.90	1.00	21	0.41	1	0.53
Item 7. Agency focus on competitive employment	3.00	1.20	8	3.02	0.93	21	0.03	1	0.87
Item 8. Executive team support for SE	3.50	1.41	8	2.84	1.50	19	0.61	1	0.44
3. Services									
Item 1. Work incentives planning	4.00	0.93	8	4.14	0.91	21	0.14	1	0.71
Item 2. Disclosure	4.38	0.92	8	4.76	0.62	21	0.22	1	0.64
Item 3. Ongoing, work-based vocational assessment	3.88	0.64	8	4.19	0.60	21	1.54	1	0.23
Item 4. Rapid search for competitive job**	4.00	0.76	8	2.52	1.29	21	7.58	1	0.01
Item 5. Individualized job search	4.38	0.92	8	4.71	0.46	21	1.26	1	0.27
Item 6. Job development—Frequent employer contact	2.50	0.76	8	2.38	1.16	21	0.02	1	0.88
Item 7. Job development—Quality of employer contact	3.13	1.13	8	3.38	1.28	21	0.33	1	0.57
Item 8. Diversity of job types*	5.00	0.00	8	3.81	1.72	21	4.15	1	0.05
Item 9. Diversity of employers*	5.00	0.00	8	3.76	1.81	21	4.02	1	0.06
Item 10. Competitive jobs	2.13	1.13	8	2.29	1.52	21	0.11	1	0.74
Item 11. Individualized follow-along supports	4.75	0.46	8	4.33	1.35	21	0.71	1	0.41
Item 12. Time-unlimited follow-along supports	4.63	0.52	8	4.00	1.45	21	1.39	1	0.25
Item 13. Community-based services	3.38	1.41	8	3.05	1.20	21	0.50	1	0.49
Item 14. Assertive engagement and outreach by integrated treatment team**	3.75	1.28	8	4.57	0.60	21	5.15	1	0.03

*$p < 0.10$/**$p < 0.05$.

The IPS fidelity assessor explained how this was addressed when measuring fidelity on integration, next to joining and integrating in team meetings and being located close by team locations: *"What is relevant is whether paid work is mentioned as a goal in the guidance plan. We ask about joining team meetings and how integration is sought in other ways with their colleagues involved by the client. … In that context, the contact with a person's main social worker is highly relevant, as this is the person that integrates the IPS goals in the broader guidance plan."*

Assertive Engagement and Outreach by Integrated Treatment Team

The thematic analysis of the assessor notes did not identify any clear evidence to explain these findings. In the focus group, participants did not recognize the somewhat lower score in supported housing services, which would reflect fewer outreach attempts and more missed appointments, resulting in higher rates of discharge from IPS. They stated they would have expected supported housing services to score higher on this item than IPS specialists working in mental health services, as the first is primarily concerned with community living, rehabilitation and practical housing support. One participant suggested that the weekly mental health treatment team meetings might add to the early detection of employment needs in mental health treatment services, though the other participants did not agree.

Higher Fidelity IPS Items in Supported Housing Services

Caseload Size

Analysis showed that all IPS programs in supported housing services supported 20 or fewer clients per IPS specialist, which is the standard in for the IPS model. In contrast, less than half of mental health treatment organizations supported 20 or fewer clients per IPS specialist, with some IPS programs supporting more than 40 clients. In addition, IPS specialists within mental health treatment organizations more frequently

TABLE 3 | Thematic analysis of the seven fidelity items on which supported housing accommodations and mental health treatment institutes differed.

Analysis of themes in fidelity item						
Themes	**Number of times mentioned***		**Thematic scoring explained**	**Facilitators (F) and barriers (B) counted***		**Selection of illustrative citations**
	MH (*N* = 21)	**SH (*N* = 8)**		**MH (*N* = 21)**	**SH (*N* = 8)**	
Item 1. Caseload size						
1. Number of clients per full-time equivalent	19	8	Following the anchor points for scoring of the fidelity review. Caseload per full-time equivalent $\leq$20: facilitator. Caseload per full-time equivalent $\geq$40: barrier	F: 9 B: 2	F: 8 B: 0	1. There are 20 or less clients per fulltime IPS specialist 2. Based on the caseload reports provided, they support 75 IPS trajectories with two IPS specialists (1.56 full time equivalent). This comes down to a larger caseload than 41 clients/IPS specialist
2. Mixed caseload	3	1	Considered a barrier is mentioned as main reason for a low final score	F: 0 B: 3	F: 0 B: 0	Based on the total caseload of all IPS specialists in organization x, we concluded most IPS specialists work with (large) mixed caseloads
3. Proper registration time spent on IPS trajectories	2	0	Interpreted as facilitator or barrier accordingly to the assessor's interpretation	F: 0 B: 2	F: 0 B: 0	The time spent on IPS vs. other trajectories is not clearly defined and the caseload is difficult to interpret for the assessors
4. Working with waiting lists	1	0	Interpreted as facilitator or barrier accordingly to the assessor's interpretation	F: 0 B: 0	F: 0 B: 0	Advised is to make a plan for future waiting lists, as there is one already with one IPS specialist, and for others there is a risk on one
Item 2. Integration of supported employment with mental health treatment through team assignment[a]						
1. IPS specialist and caseload related to specific teams	21	8	Facilitator: At least 90% of the caseload of the IPS specialist belongs to one or two teams. Barrier: IPS specialist is not connected to specific teams	F: 15 B: 1	F: 0 B: 3	1. IPS specialists are connected to one or two mental health teams. 90–100% of the caseload is from these teams. 2. None of the IPS specialists are structurally part of a mental health team
2. Combining functions	2	1	Not applicable[b]	F: 0 B: 0	F: 0 B: 0	1. The IPS specialists have often a combined function and a large caseload 2. Furthermore, the IPS specialists provide all kinds of support to work as well as other activities for the clients of organization x. They have to divide their time
3. Large caseload	1	1	Not applicable	F: 0 B: 0	F: 0 B: 0	All IPS specialists are part of one location only and sometimes more than one. … Location size and teams differ largely from small (30 clients) to large (250 clients)
4. Working closely with mental health team members	2	2	Interpreted as facilitator or barrier accordingly to the assessor's interpretation	F: 0 B: 1	F: 1 B: 0	The IPS specialist discusses clients with the key social worker or behavioral expert on case level and joins team meetings where caseloads are discussed
5. Divers caseload and from different teams	5	3	Interpreted as facilitator or barrier accordingly to the assessor's interpretation	F: 0 B: 3	F: 0 B: 1	The other four IPS specialists are mainly working for two mental health treatment teams, but also have some additional IPS trajectories in other teams
6. Time restraints in providing IPS	2	1	Not applicable	F: 0 B: 0	F: 0 B: 0	A number of IPS specialists provide IPS trajectories for several teams and have limited time per team
Item 3. Integration of supported employment with mental health treatment through frequent team member contact						
2. Integration at intake	2	2	Interpreted as facilitators or barrier accordingly to the assessor's interpretation	F: 1 B: 0	F: 0 B: 0	IPS specialist is not present at intakes, leading to little opportunities to influence the team and enlarge attention and enthusiasm for IPS trajectories for new clients
3. Discussing caseload on a regular base	1	0	Interpreted as facilitators or barrier accordingly to the assessor's interpretation	F: 0 B: 0	F: 0 B: 0	The total caseload is discussed on a regular base

(Continued)

TABLE 3 | Continued

Analysis of presence of criteria

Criteria	Mental Health			Supported housing		
	***N* present**	**% present**	***N* total**	***N* present**	**% present**	***N* total**
1. Attends weekly client focused meetings	14	66.7%	21	0	0.0%	8
2. Participates actively in the team meetings	18	85.7%	21	2	25.0%	8
3. Employment services documentation (vocational assessment/profile, employment plan, progress notes) is integrated into the client's mental health record	13	61.9%	21	7	87.5%	8
4. Employment specialist's office is in close proximity to (or shared with) the mental health team members	19	90.5%	21	6	75.0%	8
5. Employment specialist helps the team think about employment for people who haven't yet been referred to supported employment services	19	90.5%	21	3	37.5%	8

Item 4. Rapid job search						
1. Rapid employer's contact	10	8	First contact within a month is defined as facilitator.	F: 1 B: 0	F: 2 B: 0	The first employer's contact takes place within 31 and 60 days after start on average
2. Incomplete registration	15	2	Not applicable	F: 0 B: 0	F: 0 B: 0	The caseload report provided is not complete. The IPS trajectories of all IPS specialists are not clear for the assessors
3. Based on client's needs	1	0	Interpreted as facilitator or barrier accordingly to the assessor's interpretation	F: 0 B: 0	F: 0 B: 0	Employers contacts are based on clients' preferences concerning type of job (i.e., what do they like, personal goals) and needs (including experience, talent, symptoms, health, etcetera) instead of opportunities available (i.e., jobs available immediately)
4. Influence of IPS financing	1	0	Interpreted as facilitator or barrier accordingly to the assessor's interpretation	F: 0 B: 0	F: 0 B: 0	Furthermore, financing of IPS trajectories can determine the pace
5. Cases put on hold	1	0	Interpreted as facilitator or barrier accordingly to the assessor's interpretation	F: 0 B: 0	F: 0 B: 0	Quit a lot clients in the caseload were put "on hold" (26% on average). If this stays this way, due to treatment priorities, IPS specialists can replace these cases with active cases to make room for new entries
Item 5. Diversity of job types						
1. Diversity of job types	14	7	Counted as facilitator is in more than 85% of the clients a divers offer is noted by the assessor.	F: 9 B: 0	F: 7 B: 0	In 85–100% of the cases IPS specialists support clients in finding a diversity of jobs
2. <10 competitive jobs	5	0	Interpreted as facilitator or barrier accordingly to the assessor's interpretation	F: 0 B: 0	F: 0 B: 0	IPS specialists support clients in a diversity of jobs. If there are <10 paid jobs, the fidelity score is set on 1
3. Diversity related to the client's preferences	1	1	Interpreted as facilitator or barrier accordingly to the assessor's interpretation	F: 0 B: 0	F: 0 B: 0	The client's preferences are the starting point. … the IPS specialists work hard to find employment that fits these preferences. All kinds of available grants, contracts and schemes are used
4. Job search by third parties	1	0	Interpreted as facilitator or barrier accordingly to the assessor's interpretation	F: 0 B: 0	F: 0 B: 0	The job coaching is not always provided by the IPS specialists
Item 6. Diversity of employers						
1. Employers diversity	13	8	Interpreted as facilitator if in more than 85% of the clients employers diversity is noted by the assessor.	F: 8 B: 0	F: 7 B: 0	IPS specialists help clients in getting jobs by divers employers in 85–100% of the time. Jobs and trial placements are with different employers
2. <10 competitive jobs	5	0	Interpreted as facilitator or barrier accordingly to the assessor's interpretation	F: 0 B: 0	F: 0 B: 0	There are too little paid jobs in the caseload report to score this item. If there are <10 paid josbs, this item is scored with a 1
3. No regular or competitive employers	1	0	Interpreted as facilitator or barrier accordingly to the assessor's interpretation	F: 0 B: 0	F: 0 B: 0	A number of clients work in supported employment settings and earn the minimum wage. These contracts does not count as competitive employment as they do not consider regular jobs
4. Employers overview not available	1	0	Interpreted as facilitator or barrier accordingly to the assessor's interpretation	F: 0 B: 0	F: 0 B: 0	There is no report of different employers available. This item cannot be scored
5. Mediation by external parties	1	0	Interpreted as facilitator or barrier accordingly to the assessor's interpretation	F: 0 B: 0	F: 0 B: 0	Most clients are mediated by reintegration agencies
Item 7. Assertive engagement and outreach						
1. Once it is clear that the client no longer wants to work	4	0	Interpreted as facilitator or barrier accordingly to the assessor's interpretation	F: 0 B: 0	F: 0 B: 0	If it becomes clear a client does not want to work anymore, or does not want to make use of the IPS specialist, the outreach is stopped

(Continued)

TABLE 3 | Continued

Analysis of presence of criteria						
	Mental health			Supported housing		
Criteria	*N* present	% present	*N* total	*N* present	% present	*N* total
1. Service termination is not based on missed appointments or fixed time limits.	21	100.0%	21	8	100.0%	8
2. Systematic documentation of outreach attempts.	15	71.4%	21	6	75.0%	8
3. Engagement and outreach attempts made by integrated team members.	20	95.2%	21	7	87.5%	8
4. Multiple home/community visits.	15	71.4%	21	6	75.0%	8
5. Coordinated visits by employment specialist with integrated team members	20	95.2%	21	7	87.5%	8
6. Connect with family, when applicable.	19	90.5%	21	6	75.0%	8

**MH, Mental health treatment services; SH, Supported housing services.*

[a] In supported housing accommodations integration was determined based on the integration through team assignment to a supported housing team (in comparison to mental health care teams).

[b] Not applicable as it did not lead consequently to a negative either a positive influence on the fidelity score. These consider themes that are noted by the assessors and concern context information. In this way these themes can, but not always do influence the fidelity score.

worked with a "mixed caseload," supporting clients in both IPS and other forms of (vocational) rehabilitation. In the focus group, these findings were explained: participants suggested that that, due to the different support needs of clients living in supported housing, IPS specialists required more time to work with each client, compared to IPS specialists working with clients in mental health services. Furthermore, participants indicated that supported housing services had more problems arranging funding for clients to access IPS, leading to reduced accessibility for supported housing clients. As a consequence, clients for which IPS funding was available were sometimes spread over a large geographical area, with IPS specialists requiring more traveling time.

An IPS coordinator mentioned: *"At our organization, we invested strongly in IPS. We wanted to be able to provide IPS to all clients that were interested. ... However, we experienced on the way that not all IPS hours can easily be financed in our sector."*

The IPS assessor explained that the most important funding scheme for both sectors includes the subsidy scheme from the Employee Insurance Agency commissioned by the Ministry of Social Affairs and Employment, and for persons receiving welfare payments, municipalities are financially responsible for vocational trajectories. Funding for the treatment and housing services is different: health insurers pay for treatment, while municipalities pay for supported housing services. As a consequence, in mental health treatment organizations, the first eight IPS contacts are often paid by insurers.

Rapid Search for Competitive Job

The thematic analysis of the fidelity assessors' notes showed that, compared with mental health treatment organizations, a higher percentage of IPS programs in supported housing services were able to arrange the initial face-to-face contact between client and employer within 1 month of program entry (4.8 vs. 25%, respectively). However, this finding may have been influenced by the fact that the assessors were less likely to be able to identify the time between first employer contact and program entry due to incomplete registrations in IPS services in mental health services than those delivered in supported housing services. In the focus groups, participants suggested that IPS specialists in supported housing services were able to invest more time into job searches due to lower caseloads, and often had contact with clients prior to starting with IPS and so knew at an early stage what kind of work clients were interested in.

An IPS specialist explained this further: "*In team x, I know all the clients, even though I do not coach them in their job search. As soon as they formulate a wish for work, and I am consulted, then I already know a little what his/her preferences are. I think this is helpful.*"

Diversity of Job Types and Diversity of Employers

The thematic analysis of the fidelity assessors' notes showed that the lower fidelity on these two items was due to IPS specialists in supported housing services being more able to support their clients into different types of jobs, as well as in different types of employers/companies. In all supported housing services, IPS specialists assisted clients in obtaining different types of jobs, while this was the case in only half of the mental health treatment organizations. Additionally, most of the supported housing services (85%) also worked together with several companies. Five IPS programs within mental health treatment services supported <10 clients into competitive employment, which automatically led to a score of one; this was not the case in any IPS programs in supported housing during the first fidelity assessment. Focus group participants suggested that supported housing services are, from origin, needs based and may have developed particular strengths in creatively searching for services and facilities that fit clients' needs. They indicated that this should also be the case in mental health treatment organizations.

An IPS coordinator simply stated: "*that is what you need to do in IPS.*"

DISCUSSION

Summary of the Findings

In the current study, we analyzed fidelity scores of IPS programs in supported housing services in The Netherlands and compared them with fidelity scores of IPS programs in mental health treatment organizations. The purpose was to understand feasibility of IPS implementation in supported housing services, in order to increase the accessibility of evidence based vocational services for persons with severe mental illness. Employment rates were examined to understand the relative impact of the IPS programs. Results showed that overall IPS fidelity in supported housing services was "fair," with services scoring, on average, 94.63; no significant difference was found in overall fidelity scores between supported housing, and mental health treatment organization, based IPS programs suggesting that IPS is feasible in both sectors. Item-level analyses of the IPS fidelity scale indicated that mental health treatment organizations demonstrated better integration of the IPS programs, and higher scores on engagement and outreach; conversely, IPS programs in supported housing services provided more rapid job search processes and more diverse selection of competitive work types and employers. IPS programs in supported housing services were also found to have smaller caseloads per IPS specialist than those provided in mental health treatment services. The quarterly employment rate for IPS programs in supported housing services was 25.8% on average, similar to the rate in mental health treatment organizations, suggesting that these are relatively successful programs; recent research suggests employment levels amongst supported housing clients in The Netherlands is typically 3–5% (5). The fidelity scores and employment rates reported in the current study are similar to longstanding averages reported for Dutch IPS practice (31). Although, we need to be careful in our conclusions based on these statistics, in which details on population characteristics including diagnosis, age and health care needs are missing, our findings are encouraging, particularly considering the higher needs of those living in supported housing (1, 4–7, 10–12).

Interpretation of the Results

Our results suggest that IPS, an evidence-based vocational intervention (15, 17–19), is as feasible and as effective when implemented within in supported accommodation services and mental health treatment organizations in The Netherlands. This is an important finding, considering that so few clients of supported housing have competitive employment (5). Data from the current study indicates that IPS provided in supported housing can support a substantial number of clients, willing to participate in an IPS program, to find a competitive job or education.

Although IPS was originally developed for mental health treatment services (25), by analyzing the IPS fidelity assessors' reports and through staff focus groups, we were able to further understand the facilitators and barriers in implementing IPS in supported housing settings. It should be noted when considering the differences between mental health care and supported housing services on the fidelity items that the baseline fidelity measures we compared were conducted at different time over a 4 year period (from 2015 to 2019) and over this timeframe both IPS and the services within which it was implemented have developed in terms of organizational structures, quality of IPS training and quality of fidelity assessments and this may have influenced our findings. Participants of the focus group reported that the smaller IPS caseload size in supported hosing services was an important facilitator of successful job searching as their clients needed more intensive support with this.

An important difference between the sectors was the integration of the IPS workers within the service, which was lower in supported housing services. This was due to the fact that these workers were often working across multiple supported hosing sites whereas IPS workers in mental health treatment organizations were usually embedded within a single team. However, the overall fidelity rating and employment outcomes were similar for both sectors suggesting that it can be successfully implemented despite differences in specific aspects of fidelity.

Despite the positive results, the data suggest that both mental health treatment and supported housing services score, on average, "fair" on the IPS fidelity scale in their first audit. This leaves room for improvement in both sectors which could lead to greater success in employment outcomes (27). It is known from the national data set that fidelity increases in time and currently fidelity scores in both sectors are above 100, indicating good implementation. Our results also give indications as to how further improvements could be made and suggest that exchange of experiences and expertise between supported housing and mental health treatment organizations on working with IPS is potentially helpful. The main advantage of providing IPS in both sectors is the expansion of the model to a greater number of people with severe mental illness with the associated benefits of facilitating people's access to competitive employment which in turn, improves societal integration and many aspects of well-being (8, 9).

Further research is needed to understand how best to integrate IPS workers in non-clinical settings and how to ensure good liaison between sectors. This is relevant to ensure that if the IPS model expands to other sectors, the critical features are preserved and assessed. There is also more to learn from supported housing services about how they succeed in rapid job searching and engaging a diverse range of employers in the program.

Finally, the results of the focus group indicate that ongoing funding for IPS is needed. Although, in the Netherlands, currently a subsidy scheme is available for IPS, some IPS coordinators participating in the focus group experienced difficulties in accessing funding for all supported housing clients who wished to engage with IPS.

Limitations and Strengths

In interpreting the results, it must kept in mind that the analyses were performed on a small number of IPS programs. IPS in supported housing services is a new development and the results may therefore not be generalizable. Another important limitation is the fact that we were not able to distinguish differences in features of the sample of clients that received IPS between both sectors; as our data were collated at the program level, individual client characteristics were not available. Differences in features of the sample might have been an additional indicator in the description of differences between mental health and supported housing, although in both sectors the population concerns persons with serious mental health problems and research indicates a large overlap as 80% of the supported housing clients receive mental health treatment. The main difference is that supported housing clients have higher care needs on housing and daily living, and a smaller proportion has paid work (22), which suggests that realizing paid employment might even be more difficult in this group In that light, our findings are more positive than would have been expected. An obvious strength is that this is internationally the first study providing indications on the feasibility, experiences, and effects of IPS provided in supported housing services.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

DR wrote the manuscript, performed the focus group, the qualitative analysis, and co authored the quantitative analyses. LW, CB, CC, PM, HK, and JW were involved in the outline and reasoning of the manuscript and critically reviewed the manuscript. JW is also the director of Phrenos, coordinating the IPS audits, and quantitative data collection. LW performed the quantitative analyses and the qualitative analyses. All authors contributed to the article and approved the submitted version.

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Implementing an Action Over Inertia Group Program in Community Residential Rehabilitation Services: Group Participant and Facilitator Perspectives

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Introduction: A time-use focused intervention, Action Over Inertia (AOI) designed to address restricted activity patterns and support recovery, was adapted for use in Australian community residential mental health services.

Method: Qualitative case study research explored the use of AOI groups across three Community Care Units from the perspectives of group participants with enduring mental illness and group facilitators. Fifteen interviews were conducted: five group participants were interviewed twice 4 weeks apart, and five group facilitators on completion of the group intervention. Interview data were analyzed thematically using constant comparative methods.

Findings: Two overarching themes, "Making Change" and "Facilitating Change" were identified. Efforts to make change in their lives were supported by participants recognising the value of personally meaningful activities for well-being and of activity experiences that fostered hope and recovery, whereas a sense of "stuckness," time for activities and life events could disrupt "getting me going." For the facilitators, facilitating change involved recognizing inertia as a challenge; getting people going; and looking at how AOI intervention works to impact inertia.

Conclusion: AOI in a group format supports participants to identify barriers to more active living; to appreciate how time-use and well-being interrelate; and to reframe and take steps to overcome inertia. Further research should evaluate AOI groups as a means of providing individualized support for activity re-engagement as part of recovery oriented mental health rehabilitation.

Keywords: Action Over Inertia, psychosocial rehabilitation, recovery oriented practice, activity participation patterns, group interventions, community care unit, qualitative research

INTRODUCTION

Recovery informed policies have become influential in mental health services internationally (1). For services developed within the context of de-institionalization to provide community residential care and rehabilitation for people with enduring mental illness, recovery oriented frameworks have necessitated a shift from expert-driven rehabilitative approaches to recovery informed practices that value and respect individuals' views and lived experiences, rights and choices (1–3). Key differences include that recovery informed practices are person driven, rights-based and foster choice and self-determination, self-chosen goals and directions; they foster hope, collaborative partnerships, and engagement of support networks; and focus on strengths, developing capabilities and community participation (4). An evidence base informed by experiential and scientific research for psychosocial interventions using approaches focused on individualized support, skill development, and peer involvement has developed to support people in their personal recovery (4, 5). Most notably in the vocational domain, a strong evidence base for individualized support to enable engagement in education and employment has developed (6), while healthy lifestyle interventions that typically target physical activity are also increasingly recognized as important in recovery (7, 8). Furthermore, Strengths and recovery informed approaches also emphasize the provision of supports to identify and pursue self-chosen goals in life domains broadly (4, 9, 10).

Involvement in self-chosen, personally and culturally meaningful activities is widely identified as a factor contributing to recovery and well-being (11, 12). Yet, adults with enduring or severe mental illness (SMI) are disadvantaged in housing, employment, social and financial status, as well as having poorer health than the rest of the population, so that overcoming social exclusion and reclaiming a meaningful life is a significant challenge (1). How people spend their time is a recognized indicator of health and well-being, given various features of activities engaged in a temporal context can promote or compromise health (13). Hence, time use data can be used to describe the distribution and correlates of health-enhancing activity patterns relevant to public health; it can also provide important information in mental health care contexts about how people with enduring mental illness spend their time during the day (13, 14). Time-use studies involving adults with first-episode psychosis and enduring or severe mental illness (SMI) indicate their activity patterns are frequently characterized by few active, meaningful or socially valued forms of occupation (15–17). Some work to develop time-use informed measures of activity participation in mental health care has occurred (18, 19). However, time-use informed interventions that specifically address broad disruptions in activity patterns and development or re-engagement in meaningful and satisfying activity patterns are less well-developed in comparison to other psychosocial interventions (20–22).

Time use, activity engagement, patterns of participation and their links to health and well-being are longstanding concerns of occupational therapy (14, 23). While there is evidence showing the need for interventions addressing activity patterns and engagement in an individualized, collaborative manner to promotes recovery (24), further establishment of their outcomes in terms of changes in occupational engagement and activity patterns, as well as recovery and well-being, is required (21). An important step forward has been the development of manualized interventions that address disruptions in activity patterns and occupational engagement (21), such as Action Over Inertia (AOI) (25) and Balancing Everyday Life (BEL) (20). Both are informed by a time-use perspective and situated in relation to contemporary recovery oriented frameworks for mental health practice.

Developed by occupational therapists in Canada, Action Over Inertia (AOI) is a flexible workbook-based, time-use intervention for use in collaboration with people experiencing challenges of everyday living with severe mental illness (25, 26). This approach acknowledges that living with mental illness is challenging, but also takes the view that these struggles need not prevent an individual from engaging in personally meaningful activities associated with recovery, health and well-being benefits (25). These benefits of activity engagement are not limited to but may include expressing one's own goals and values; developing one's skills or knowledge; improving mental and physical well-being; interacting with others; contributing in one's community; experiencing pleasure and satisfaction (25, 27). In this sense, AOI aligns with recovery oriented practice through providing tools and resources for supporting individuals to build activity patterns that enable fulfilling lives irrespective of the presence of ongoing mental ill-health. Based on a small-scale prospective randomized controlled pilot study to investigate the use of AOI with individuals with SMI receiving assertive community treatment, Edgelow and Krupa (28) reported that individuals receiving the AOI intervention made positive changes in how much time was spent in activities other than sleep. Participants also commented positively on their experience of AOI and changes made in their daily lives. While their study indicated that AOI is relevant and useful, Edgelow and Krupa recommended further research investigate its implementation in different settings and formats. In comparison, BEL is an evidence-informed 12 session group-based and lifestyle redesign intervention for people using community mental health services developed in Sweden. It focuses on accomplishing a satisfying amount and variation in activities, meaning, healthy living, work-related, leisure, relaxation and social activities, and supporting recovery (20). Improved activity engagement and activity levels were demonstrated in a recent randomized controlled trial comparing BEL with usual care (20). Group leaders' and participants' perspectives of the BEL intervention have also been reported, suggesting the value of joining with others and group support to bring about meaningful activity changes in daily life (29, 30).

In Australian community mental health settings, occupational therapists have begun using AOI in a group format to not only promote understanding of the contribution of activity participation in recovery and well-being, but also to foster group support for self-development and effecting change. Little is known about the delivery or experience of AOI in group formats. Yet, an important dimension of therapeutic effectiveness is how interventions are experienced, the degree to which they are impactful and the change processes involved from the perspectives of those accessing services (24, 31). This paper reports qualitative case study research of a group-based Action Over Inertia intervention involving adults with enduring mental illness in Australian community residential rehabilitation programs, the overall aim of which was to understand its use in this setting from the viewpoints of group participants and facilitators.

MATERIALS AND METHODS

Design

This qualitative naturalistic case study was informed by an interpretive standpoint (32) focused on understanding the individual and shared meanings of engagement in Action Over Inertia (AOI) groups. It addressed two main aims: the first was to investigate the experience of Action Over Inertia (AOI), its impacts on identifying barriers to occupational engagement, improving participation in meaningful activities, and achieving a sense of recovery from the perspective of adults with SMI. The second aim was to describe AOI group facilitators' views and experience of facilitating the intervention. Qualitative case study research methodology was chosen since it is well-suited to describing and understanding specific programs or interventions within their "real world" or naturalistic settings; and is useful for exploring processes involved in program implementation that can be difficult to study experimentally (32–34). Qualitative case study research should also have pre-defined boundaries that may address time, place and individuals, defining what is and is not studied (32, 35). Hence, a qualitative naturalistic case study approach lends itself to investigating a new practice or service development, such as the implementation of Action Over Inertia, from the perspective of people accessing and delivering it within a particular health care context.

Setting

This qualitative case study was bounded to three clinically operated community residential services, known as Community Care Units (CCU), within one health authority in metropolitan Melbourne, Australia, where training in Action Over Inertia had recently been provided for occupational therapists of the mental health services. As part of the public mental health service system, the CCU services were originally established to provide accommodation, rehabilitation and clinical care for people moving out of hospitals in the context of de-institionalization, many of whom have since moved to other community housing (3). Generally, CCUs provide 24-h clinical care and rehabilitation support using a multidisciplinary approach, with an emphasis on transition to community living and on facilitating recovery (2, 3). The three CCUs in this study were located in residential neighborhoods and accommodated up to 20 adults experiencing prolonged mental illness in clustered 2-3 bed self-contained units with some communal facilities, and an on-site multidisciplinary mental health staff team, as is typical of CCUs (3). For international comparison, these residential services may be best classified as Type 1 using the STAX-SA taxonomy developed in England (i.e., congregate accommodation, on-site clinical staff, high support) (36), although the focus on moving to other housing options, albeit not within a set time period, overlaps Type 2 in this taxonomy (3). The three CCUs each offered a five-day a week rehabilitation group program facilitated by occupational therapists, which included a variety of groups focused on psychoeducation, symptom management, activities of daily living, exercise and physical health. Given these CCU group programs lacked a focus on time use and well-being, and on identifying barriers to more active living and engagement, they were purposively selected to trial using AOI in a group format as part of the occupational therapists' ongoing work with residents. Local adaptation of the AOI workbook (25) for use in a group format, development of the research protocols and the interview questions each involved extensive consultation with these occupational therapists, the Consumer Advisory Group, and senior management of the mental health services. An overview of the research process is illustrated in **Figure 1**.

Group-Based Action Over Inertia

The AOI intervention was adapted for use in a group format over up to eight sessions by the first author, an occupational therapist with training in using AOI, in consultation with occupational therapists and the Consumer Advisory Group. Both the AOI manual (25) and a locally developed AOI facilitator guide were used by occupational therapists in planning the group sessions run at the three CCUs. The groups were run with two facilitators per group. **Table 1** describes the group session aims and AOI worksheets and resources used to support exploration of each session topic. The group program was individualized, so that the groups explored the topics at varying pace or with varied emphasis, depending on issues most relevant to group members. The three group programs also differed in length, being run over five to eight sessions, with all group participants involved in at least four sessions.

Sampling and Recruitment

Qualitative sampling aimed to purposively seek perspectives of Action Over Inertia (AOI) group participants and group facilitators on the basis that the views and experiences of both are important to the above study aims (37). Information about the study was distributed to all residents participating in AOI groups at the three CCUs and all AOI group facilitators, and it was made clear that participation in the research was not a condition of their involvement in AOI groups. The study was explained and written informed consent completed with each person who agreed to participate. The AOI group participants were reimbursed AUD $20 per interview for their time and expertise.

Participants

Ten participants were recruited, including five AOI group participants and five group facilitators. The AOI group participants were aged 32–55 (mean 42 years); and had been residing at the CCU for 3–18 months (mean 9.4 months); four participants had a diagnosis of schizophrenia and the fifth person was diagnosed with schizoaffective disorder. This profile is consistent with that reported of CCUs elsewhere (3). The

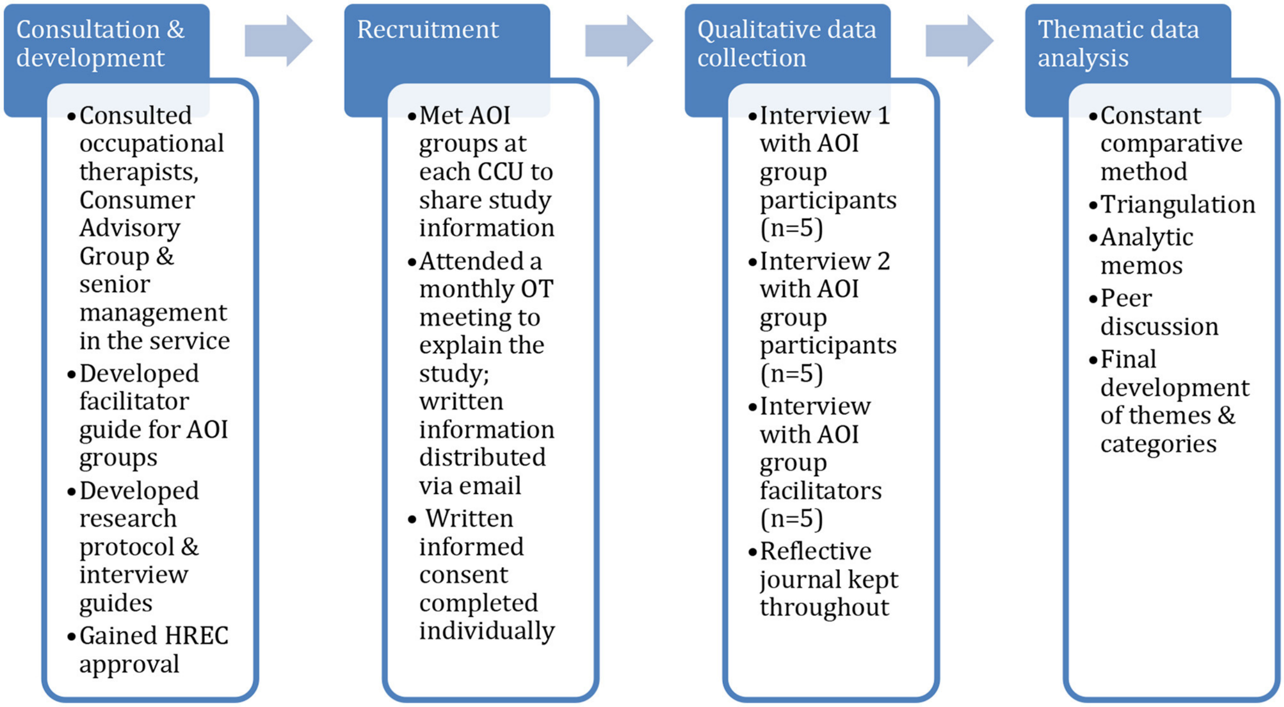

FIGURE 1 | Research process.

group facilitators included: four occupational therapists, two of whom were employed as senior clinicians and two in entry level positions with 1.5–15 years' practice experience (mean 6.6 years); and one final year occupational therapy student.

Qualitative Data Collection

Qualitative data were gathered through 15 individual, in-depth, semi-structured interviews with the five AOI group participants and five group facilitators, each conducted by the first author. Interview questions were informed by knowledge of the AOI intervention, underpinning literature and consultations with the Consumer Advisory Group and senior occupational therapists in the mental health service. Two semi-structured interviews were completed with each AOI group participant. The first interviews were conducted at the beginning of the intervention and focused on participants' current activity patterns, views about recovery, and goals for participating in AOI group. The second interview occurred 4–6 weeks later and focused on participants' experiences of participation in an AOI group and reflections on the impact that it had on their daily routines and engagement in occupations. On completion of each AOI group program, the facilitators were each interviewed once. A semi-structured approach was used to explore AOI facilitators' experience of facilitating AOI in a group, any adaptations they would recommend to increase its usefulness, and their views of its impact on the group participants. The first author also used her knowledge of AOI to ask follow-up questions and encourage participants to expand on their experiences and ideas. Interviews were all conducted in a place and time of the participant's choice, and either audio-recorded with their consent or hand-written notes were made.

Qualitative Analysis

The qualitative data analysis was guided by Braun and Clarke's (38) approach to thematic analysis. Interviews were transcribed professionally and by the first author to both ensure accuracy, and gain in-depth familiarity with the data. First, analysis of individual interviews by the first author included listening to each recording, thorough reading of each transcript, developing initial codes, and then identifying similarities and differences between codes using a constant comparative method, so as to group the data into meaningful categories that illuminated the subjective experiences of AOI group participants and facilitators, respectively (38, 39). Second, the categories were compared to draw out common characteristics across the interviews from AOI participants and facilitators, which helped identify emerging patterns, meanings and themes within the data (38). The second author independently reviewed and coded some transcripts; emerging categories and themes were then developed through discussion between the three authors.

Several trustworthiness strategies were used to enhance the quality of this study. These included consultations with occupational therapists and the Consumer Advisory Group in the mental health service during adaptation of AOI for use in a group format and development of the interview questions. In addition, reflective journaling by the first author was used during data collection and analysis processes to trace assumptions, decision-making processes and experiences,

TABLE 1 | Overview of AOI group sessions, AOI worksheets, and resources used.

Group session	Aim and focus	AOI worksheets	AOI resources
I	Introduce AOI and reflect on current activity patterns. Develop awareness of time-use patterns.	1.3 My current activity patterns 1.4 Benefits of my current activities 2.1 Daily time use log	
II	Collecting information about current activity patterns Reflecting on current activity patterns	2.1 Daily time use log 2.2 My daily time use 2.3 Considering the balance of my activities* 2.4 Am I getting enough physical activity?* 2.5 My daily routine and structure*	2.2 Daily activity (examples of diverse activities)
	Increase awareness of different meanings and types of activities. Creating individual definitions of occupation.	2.6 Finding meaning in my activities* 2.7 Satisfaction with activities*	2.2 Daily activity
III	Continued from session two with greater focus on reflection of past, present and future time use.	2.2 My daily time use 2.6 Finding meaning in my activities 2.7 Satisfaction with activities* 2.8 Social interaction through activities* 2.9 Accessing my community*	2.1 Levels of activity engagement
	Identify different states of occupational balance/imbalance. Consider "just right" balance in preparation for areas of change.	2.10 Activity Engagement Measure*	
IV	Introduce quick activity changes and think of small changes to increase general activity engagement. Plan for short-term action.	3.1 Record of activity experiments	3.1 Some ideas about quick activity changes
	Identify different states of occupational balance/imbalance. Consider "just right" balance in preparation for areas of change.	As above	As above
V	Reflect on recent engagement in activity experiments/quick activity changes, benefits and barriers. Identify problem solving strategies to overcome barriers and education to support participation.	2.6 Finding meaning in my activities 3.1 Record of activity experiments 4.1 Health and wellbeing benefits of my current activities*	4.2 One activity, many benefits 4.3 Making clear the benefits of activities 4.4 Recovery benefits of activity participation
VI	Continue session five as above		
	Develop clear plans for change. Identify potential challenges preventing activity engagement. Focus on health and wellbeing benefits associated with activity participation.	2.10 Activity Engagement Measure* 5.1 Preparing for changes in activity participation* 5.3 Planning for activity change*	5.2, 5.3
VII	Continue session six as above		
	Develop clear plans for change. Reflect on previous worksheets.	3.1 Record of activity experiments 5.1 Preparing for changes in activity participation 5.2 Prioritizing plans for activity change* 5.3 Planning for activity change 5.4 Giving shape to plans for activity change*	3.1 Some ideas about quick activity changes
VIII	Reflect on what has been learnt in the sessions. Focus on current activity patterns (interest and meaning), balance, barriers to change and ways to address them.	5.3 Planning for activity change	5.1 Managing challenges to activity change

**Asterisk indicates an AOI worksheet introduced in one CCU group, but not all three at this same time point in the AOI group program.*

as well as peer supervision with the other authors, both of whom are experienced occupational therapy researchers. Data triangulation through inclusion of the viewpoints of group participants and facilitators about the same phenomenon about AOI groups at three sites strengthened the credibility of the themes (32, 39).

Ethics Approval

The institutional Human Research Ethics Committees (HRECs) of Melbourne Health (2015.103) and La Trobe University Faculty of Health Sciences (LEG/13218) approved this research.

FINDINGS

Two overaching themes, "Making Change" and "Facilitating Change" were identified, representing perspectives of Community Care Unit (CCU) residents who participated in AOI groups and the group facilitators, respectively. Each is presented below, with direct quotes to illuminate the themes, and the use of pseudonyms as agreed with participants to ensure their confidentiality.

Making Change

For AOI group participants, making change involved finding it hard to get themselves going, and recognizing the importance of

TABLE 2 | "Making change"— a summary of key themes and descriptions.

Key theme	Description
It's hard to get myself going and things get in the way	Factors that prevented or got in the way of getting going: 1. Feeling of "stuckness." 2. Finding time. 3. Barriers.
Getting myself going	Of central importance to getting myself going: 1. Recognizing the value of meaningful activities. 2. Doing things brings a sense of hope and recovery. Factors that enabled doing things that matter: 1. Understanding the relationship between activity, health and wellbeing. 2. Planning our time use. 3. Developing strategies to push through resistance and discomfort. 4. Quick activity exercises. 5. Experiencing the benefits of doing a little more. 6. Doing things with others. 7. Learning from others through talking.

doing so. As summarized in **Table 2**, they identified "stuckness," time issues and other factors that restricted or disrupted their efforts to make changes and do what mattered to them. They also spoke of ways in which they were "getting themselves going," and aspects of AOI that were supportive in doing so.

It's Hard to Get Myself Going and Things Get in the Way

AOI group participants spoke of various factors that prevented or got in the way of them getting going, and doing what mattered to them. These factors varied between them and over time, and included: being out of the habit of routine activity or engaging in mainly passive activities; difficulties finding time amidst competing demands; life events that disrupted participation; the impacts of medications; and the paralyzing nature of feeling stuck.

AOI participants used terms such as "laziness," "lack of motivation" and "inertia" to describe their "stuckness" and difficulty in getting going. For instance, James and John noted a "lot of bad habits," doing relatively little, and fluctuating health issues as preventing them from getting going. In John's words:

> Before CCU [I] was sitting on the couch, physical health and mental health was up and down which was stopping [me] from doing some activities. Didn't have motivation and some resistance to participation… I couldn't be bothered.

Further, James described the "stuckness" that he experienced as resistant to change, sharing that "nothing in the group helped with overcoming lack of motivation," despite his thinking about what he might do to change:

> Think all about how I could plan and change my days and my health and everything … think a lot more about my daily routine and the way that I very well could plan it a lot better.

In addition, while important in their recovery, some AOI participants indicated that time spent participating in the CCU program impacted their time to engage in other activities that were meaningful or mattered from their viewpoints. Thus, James spoke of his emerging understanding of his time use, competing demands on his time and how to manage it that he gained in the AOI group:

> I wish I had more time. The CCU program takes up most of every single day … it's taking up nearly all of my time... Time is my issue here … I don't have enough time to do any of the stuff that I have to do … Pretty much after the AOI group, with those questions, [I discovered] my problem is time during the day, and all activities and chores I need to do in the day. I probably do think about my day more often, and need to plan it more better.

Craig similarly identified time use as a challenge, particularly as his days became more filled with activity:

> It's more like finding time to do stuff. Like you work a bit and you've got heaps of work, and you have to sort of find spare time.

Several AOI participants reported that medication both restricted and enabled their participation in activities that mattered to them. For instance, medication could be a "barrier" to getting going and doing the things they wanted to do due to its sedating effect. In James' words, "[what] I am finding with the medication is I am having too much rest, not enough productivity." He also noted his medication meant needing to be in bed early and so influenced his daily routines and what he could get done. In comparison, medication could also enable getting going and being engaged in activities, as John noted:

> On no medication, I used to start hearing voices in me head … yeah, so, if I would not take the medication, I would not be here today.

The AOI group participants also spoke of other factors, including the ups and downs of life, that got in the way of their intentions to be more active. They described needing to accept that some of these factors were outside their sphere of influence, but also to acknowledge their impact on participation in daily activities. For example, John spoke of a friend's recent death making things "a bit rough," as well as how a bike accident 3 years ago left him with a painful knee, meaning he "can't walk as much as I would like" and is more restricted in the activities that he would like to do. James too identified poor physical health as a barrier to his participation in meaningful activities.

Getting Myself Going

Despite the many challenges in getting themselves going, AOI participants described noticing many ways in which the AOI group impacted on their lives, helped get them going, and enabled their engagement in what mattered to them. Of central importance to getting themselves going, AOI participants identified: recognizing the value of meaningful activities; and how doing things brings a sense of hope and recovery. In particular, AOI group participants spoke of developing their understanding of connections between activity, health and well-being; planning their time use; developing strategies to push through resistance and discomfort; experiencing the benefits of doing a little more; doing things with others; and learning from others through talking.

Learning about activities and health, and about time use was a focus in the AOI groups that enabled participants to make connections they had not previously understood, or perhaps had forgotten. For example, Frank described previously being unable to recognize the importance and impact of meaningful activities and the resistance he experienced before participating in AOI, summing up his developing awareness of these factors within the group:

> The inertia part we touched [on] today, and we were talking about the goals and how resistance was used by, within ourselves.

Further, for James, participation in AOI increased his awareness of what he could be doing, and helped him to make changes:

> I definitely now wake up, um, most mornings and get up for breakfast now… I definitely am going to see friends more now … I'm definitely talking to other family more often.

Other AOI group participants described how making even small changes had a flow on effect, that is, how one action led to another, and then another, as self-belief and confidence grew. In John's words:

> Small thing of going next door to have coffee, which was an action, increased self-esteem and confidence, then I kept going to groups … going to church every Sunday.

Shandy too described choosing a quick activity change within the group that led to other benefits: "I started going for coffee and stuff," which made her feel, "ah, fantastic." She then went on to describe the benefit of being with others, who were similarly stuck and experiencing similar challenges in getting going, and the changes that she had made from AOI group participation:

> group helped put some actions in place … I like to see more people, I like to do things with people and my last comment, I enjoy activities … I take care of myself a bit more.
> Listening to other peoples' opinions actually brings the motivation out of my own … yep, it helped motivate me.

Recognizing the Value of Meaningful Activities

Following completion of the AOI groups, participants identified activities that were personally meaningful to them, and how they had developed ways of participating in them. For some AOI participants this involved reconnecting with, or remembering the meaning of previous activities; for others, it reflected gaining further understanding of how meaningful activities connect with health and well-being. For example, participating in the AOI group assisted James to "recognize [the] importance of activities which has made a change in life." Further, Frank illustrated how, through the AOI group, he gained a different perspective of what was important to him within his daily routine:

> It's just like this. You wake up in the morning. You go to the toilet, have a shower. Now, you know… you think self-care. It has to happen because it's a way of caring for yourself, you know. … Because, normal day-to-day living, [before] I didn't use much time to think about these things I'm doing every day, normal routine things. What are the definitions of them … and that's kind of soothing… After attending the group, I am now about to put some perspective into what is going on in my life.

In identifying activities that were meaningful to them, AOI participants also understood more about how those activities contribute positively to their lives, influencing their emotions, confidence, sense of well-being, and motivation:

> I've been more confident … a bit more relaxed … fairly happy with the group. Probably [doing] more activities. [Craig]
> … gives you confidence, very well, self-esteem, more cheerful … I feel happy. [James]

Doing Things Brings a Sense of Hope and Recovery

AOI group participants noted that being engaged in doing things made them feel like their lives were going in a positive direction. For example, James shared how participation in daily activities enabled him to "develop new skills and knowledge" and to "feel as though I have accomplished something," so that being at the CCU and participating in AOI had been a step in making "recovery a tiny bit faster." For Shandy too, her experience of the AOI group supported her orientation toward positives and the future:

> We just mainly focused on our future … so looking toward the goals and what we would like to achieve and stuff … It's just getting out there, having a chance to do things with other people and doing things for myself, makes me feel good.

When asked directly about recovery, most AOI participants responded by offering a future perspective—describing how their lives would be when they "recovered." This was illustrated by John, who had been "working on achieving goals since participation in group," and was back at school completing an adult literacy, computer and spelling course as a result. James too described how he has learnt to think about recovery, drawing connections between what he does and how he feels, while Shandy valued talking about recovery and what being healthy meant to her during the AOI group, noting it helped to "motivate me":

> I think just putting it out there actually pushed me a little bit further to achieve my goals … I just like how we all got together and we were all able to speak our minds.

Further, in relation to her recovery, Shandy also described how using the daily activity chart informed her about both what she was doing and how her activities were impacting her: "it was good doing that." Other participants too shared ways in which participating in AOI group supported their sense of moving forward. For example, John recalled one of the group activities to illustrate how he was changing his life:

TABLE 3 | "Facilitating change"—a summary of key themes and descriptions.

Key theme	Description
Recognizing inertia as a challenge	1. Understanding of inertia. 2. Impact of inertia on participation. 3. Environment culture and expectation. 4. Staff being influenced by inertia.
Getting people going	1. Developing an understanding of what was assisting AOI participants to get going. 2. Impact of participation in the group raising AOI participants' awareness.
How AOI works to impact inertia	1. Impact of participation in group. 2. Challenges of converting AOI. 3. Fitting AOI content to participation. 4. Facilitation.

> … it has changed a lot … [occupational therapist] had three pictures. The first one was a man sitting on a couch. He did not have a shower, was a bum and was not doing anything and the second one was of a man in the office just stressed out and all that paperwork he has to do, and the third one was a man at the supermarket and he was all smiling and cleaned and all this. We had to figure out which one was us and all this. I picked man on couch not wanting to do anything … That used to be me, I used to do things like this … Now I'd pick the man in the middle on the shopping trolley. I have gone to group, go to school Mondays … it feels good.

In addition, while being in the AOI group, doing and talking about activities together supported participants' sense of recovering, so did participating in activities that created a sense of belonging and contributing in the social world:

> Interacting socially and playing sports helps to make [me] feel better. [Craig]
> Just getting out there and having a chance to do things with other people and for myself … Action wise, well I've started going for coffee and stuff. [Shandy]
> And doing something useful for others "definitely makes me feel as though I am making a valuable contribution to society" [James].

Facilitating Change

Recognizing inertia as a challenge, getting people going and looking at how AOI works to impact inertia were key themes that influenced the occupational therapists in facilitating change. **Table 3** summarizes these themes.

Recognizing Inertia as a Challenge

The AOI facilitators identified inertia as a challenge experienced by many AOI group members. They also described it as pervasive in its nature and holding sway over the overall culture within the CCUs, translating into environments of low expectation and limited activity participation. As Jess and Josh reflected, the "sense of inertia is very widespread," as well as the degree of "stuckness" and lack of movement experienced by some residents. In Jess' words:

> … they were really struggling to like get involved in different activities and stuff, or they would just kind of start something and stop and yeah, wouldn't be able to kind of make those long-term changes.

As a consequence, the AOI facilitators believed that AOI held potential value as a structured way to address these challenges within the CCU context. In Josh's words:

> A big kind of reflection from me [is] that this type of group actually needs to happen especially in a CCU space because that's why people are here, like there are problems. So in terms of the relevance, there is a huge relevance. There is no way you can pretend that this is not relevant.

While the AOI facilitators recognized the disabling nature of inertia, they also found it was not immediately obvious to the AOI participants. They described having to work at exploring ideas around inertia and how this impacted health and well-being, and contrasting this with the positive impacts of activity (or Action Over Inertia). For instance, Sam found that revisiting the ideas regularly in the groups facilitated AOI group participants to understand more fully, and to make connections with their own lives and daily routines.

Challenges of Getting People Going

Getting people going in the CCU environment was a challenge experienced by all AOI facilitators. From their perspectives, this stemmed from a range of factors, including perceived low service expectations of residents' active participation and skill development, as well as the challenges of inertia or stuckness on the part of residents. Running AOI groups also challenged facilitators' own ideas about CCU residents having skill deficits assumed either to be cognitive or symptom-related in nature, and providing opportunities to reframe some of them as consequences of lack of opportunity to perform, practice and develop skills. For instance, having described initial reluctance to use worksheet-based activities during AOI groups, Josh noted: "A lot of clients don't do that day to day at all," creating an unexpected opportunity for practice reading and completing forms that "turned out to be a real positive."

Getting People Going

Similarly to AOI group participants, the facilitators spoke about the "stuckness" and difficulty in "getting people going" and acknowledged the challenges that AOI participants experienced, while also describing the groups as supportive and encouraging toward each member.

Small changes and achievements were noticed and celebrated, with an awareness of the degree of challenge involved in getting going for some, if not all group participants. For example, as Sarah highlighted, being part of the group was evidence of change for one AOI participant: "We had someone who would just do the very bare minimum, but for him to be in the group was the biggest achievement." Josh too highlighted the importance of other CCU staff also noticing subtle changes in a participant's engagement in activities and interactions with others. Further, as

Jess described, it was "rewarding to see some of participants, and the changes they made during the eight week period."

Several AOI facilitators noted the value of AOI worksheets for sharing ideas relevant to the lives of group participants and communicating them in effective ways, as Josh described:

> I was constantly thinking about how would I bring this up and I would talk about, you know, my own experience or try to give a little anecdote or a story or something, or think of a question to prompt people to give me an answer or something to kind of lead the discussion.

Sam further noted the benefits of the AOI group format, noting that participants gave "more detailed responses when able to share in a group, could bounce off ideas and relate to one another." She also described how the group seemed to generate its own energy, having a positive flow on effect on the motivation of individuals: "in a group setting you could see motivation levels really increase, especially with quick activity changes." Further, Snoopy reflected that, by the end of the AOI group, it "opened people's eyes to what they were doing with their time," and the role of activity in recovering:

> There seemed to be a shared understanding that being active and involved in meaningful activities—that it is an important part of recovery and is not just something that you do separate to having a mental illness.

How AOI Works to Impact Inertia

AOI facilitators also identified a range of factors that made it hard to convert talking about AOI ideas into real changes in AOI participants' lives and activity patterns. The AOI workbook was designed for flexibly tailored use, and AOI facilitators adjusted the ways in which they shared the content within groups to ensure its relevance for participants, including by turning worksheets into activities; using examples; providing one-on-one support; and asking questions that could lead to meaningful discussion. For example, Snoopy used:

> Pictures and got participants to put where they were on the scale. [This] helped people to engage more, and pick things out of the box, and talk more. … So, I think it was helpful doing things on the whiteboard, getting people to write up things a bit more … just thinking about what kind of tactile kinds of things people can do to keep their attention.

The AOI intervention is about both understanding and acting on barriers to change, including use of coaching to support "*in-vivo*" activity change. So, while the group format facilitated knowledge and understanding of barriers to activity participation, the facilitators had the sense that this alone was insufficient to facilitate lasting change. Overall, the group setting was seen as facilitating the AOI intervention in that it provided an environment for common themes to emerge around barriers to change, peer learning, and opportunities for group members to bounce ideas off each other. Hence, in Snoopy's words, participants were "able to identify pros and cons of different occupational balance or imbalance, and they were able to review their daily time use and get a sense of what their just right balance would be."

Peer learning and support were also valuable aspects of AOI groups from a facilitators' perspectives. For instance, Sam described how peers listening to and learning the benefits gained from being more active from each other was motivating, and led to offers of support: "one group member offered to assist someone else because that was a strength of theirs." Sam also elaborated:

> I think if done individually, the motivation, the willingness to do it wouldn't have been as high as compared to that group setting. … I think you got a lot better response or more detailed responses when they were able to share in a group'.

On the other hand, learning in a group setting could also potentially be confronting, as Snoopy reflected:

> … one participant [was] doing a lot with his time and I wonder whether that was challenging for other clients to hear… comparing themselves to him and maybe feeling a bit lacking perhaps. But then at the same time, maybe that was a positive too because they got to see a peer of theirs that was quite active and that he was obviously getting a lot of benefits from being active. Challenge if people [are] feeling defensive about lack of participation as it was more public for them. Did open peoples' eyes to what they were doing with their time, which was difficult for people to acknowledge.

Nevertheless, by the end of the AOI group intervention, the facilitators noted overall a "sense of client understanding … it led to people being more motivated about activity levels" [Snoopy]; having "changed their mindset" [Josh]; being "really proud of self" [Jess]; and sharing and celebrating "smaller steps toward the change" with others in their group [Sam]. In their overall reflections, the facilitators emphasized needing to understand each group participant, so they could tailor group implementation to optimize each person's engagement. This knowledge allowed them to offer tailored suggestions to CCU staff for enabling activity engagement, so as to break the sense of inertia in the CCU environment.

DISCUSSION

This qualitative case study research is the first known to report the use of Action Over Inertia (AOI) within community residential rehabilitation services for people with enduring mental illnesses in Australia. Action Over Inertia (AOI) is designed to support people with enduring mental illness in making change to disrupted or restricted activity patterns that limit their opportunities for health and well-being benefits (25). The findings of this study suggest AOI works because it allows a re-conceptualizing of inertia for both participants and facilitators or service providers. The issue of "inertia" is itself not new, issues with energy and drive have long been associated with schizophrenia (40). Furthermore, Deegan (41) described the despair experienced by people whose lives are characterized inertia and the important role of supporters to instill hope of a future beyond inertia. Others too have identified the ways in which not only cognitive intrusions and disruptions, but also failed efforts to make sense of experiences and overcome difficulties can spiral into a diminished sense of agency and capability, withdrawal and demoralization (42, 43). Hence, as the group participants in this study identified, inertia or stuckness is real and difficult to overcome, but neither an intractable symptom nor insurmountable with the right support. That participants identified making activity changes as hard and confronting, albeit rewarding, is consistent with Bjørkedal et al.'s (44) findings of a previous evaluation of occupational therapy to enable re-engagement in activities during recovery from participant perspectives. Yet, the findings of this study indicate AOI appears to support people to explore "inertia" and consider alternative ways of understanding this "stuckness" and the barriers to "getting going," which in turn makes imagining change possible.

Imagining change as possible aligns with both instilling hope and the recovery process (4, 9, 42). Findings from this study indicate that both AOI participants and facilitators gained greater awareness and understanding of this sense of "stuckness," enabling the development of hope and a sense of agency, or feeling of "I can do something about this" on both their parts. As a consequence, AOI participants started taking small steps in making self-directed activity changes that increased their self-efficacy and confidence. This improved sense of capability in turn led to doing more, and feeling more capable and less "stuck." A similar process of gaining momentum has also been described elsewhere (31, 42, 45). In turn, this process created possibilities for staff to reframe previous low expectations as a lack of opportunity to perform, practice and develop skills, so that barriers to activity participation might be viewed as more complex than previously understood, and not solely about negative symptoms or cognitive difficulties. As highlighted by McKenna et al. (2) and Muerk et al. (46), CCUs are in a transition from a clinically-oriented rehabilitative model of care to one informed by a recovery framework. In this context, the competing perspectives of clinical and personal recovery perspectives may contribute to underlying low expectations or pessimism about CCUs residents' potential for recovery. The latter study by Muerk et al. explored an integrated staffing model involving peer support and clinical staff, highlighting the potential of bringing together lived experience and therapeutic perspectives to foster recovery-promoting environments within Australian CCU service settings. Given the present study indicates Action Over Inertia groups can facilitate greater understanding of inertia and activity engagement as experienced by consumers, this suggests further collaborative development and co-facilitation of AOI groups with peer support workers offers promise for strengthening their contribution to recovery focused practice in CCU settings.

This present study is also novel in describing the use and value of AOI as a group intervention. The findings indicate that learning occurred for both participants and facilitators as they engaged with the content and structure of the AOI groups. Action Over Inertia is a workbook-based resource intended for use in collaboration with people experiencing with severe mental illness, so as to offer individualized support for engagement in activity patterns that promote recovery and well-being (25). The factors that disrupt activity patterns and restrict engagement in meaningful activities are multiple and intersecting. Thus, Action Over Inertia is neither prescriptive, nor primarily education focused, recognizing that enhanced knowledge about connections between activity patterns and well-being and about barriers to change, while useful, is not sufficient to enable lasting change in activity patterns, as participants in this study also indicated. The "doing" within the group was critical in cementing ideas and supporting participants to try them out and see that change was possible. This speaks to the interactive process between action and belief (31).

The social dimension of this approach should also not be discounted: the group provided participants with a supportive structure for building awareness, for experimenting with making changes and reinforcing success; a counter experience to tackling and failing at large goals alone (31). As in other activity change focused groups (29, 47), the AOI facilitators used participation in activities along with social interactions between members to educate, inspire, and instill hope. Similarly, Lund et al. (29) described the power of the group for supporting change, highlighting that group participants gain value from connecting with and helping each other, the sense of belonging and the provision of mutual support in groups, as well as the content of the group. Hence, all AOI facilitators used the AOI manual (25) and locally-developed AOI group intervention guide, but they also recognized the need to not only familiarize themselves with the content but also to apply it with creativity and flexibility in structuring the group sessions to address the concerns and interests of participants over the course of group sessions. The need to tailor manualized and structured psychosocial interventions to participants' particular needs, aspirations and contexts is increasingly recognized as necessary to bring about health-enhancing changes in people's everyday lives, along with ensuring ongoing support (47). Offered in a group format with community residential rehabilitation settings, such as CCUs, Action Over Inertia can provide group support for self-development and self-directed change in patterns of everyday activities that promote recovery. Furthermore, collaboration with peer support workers could enhance the ongoing support available to sustain changes beyond the groups themselves so as to support experiences of inclusion and citizenship, presently the least well-developed among recovery oriented practices (4).

Study Limitations

While this is a small-scale study, the inclusion of data from multiple sources and across three service sites and two time-points reflects adherence to case study research methodology and enhances the authenticity of its findings (33). Typically, qualitative case studies will have limited applicability beyond their specific setting studied, so that conclusions drawn about their wider generalisability need necessarily to be modest. A detailed description has been provided of the Action Over Inertia intervention and the Community Care Unit setting in which it was implemented, so as to allow readers to judge the applicability of the results to another setting for themselves (48). In regards to the intervention itself, while reported experiences were generally positive, a 6- to 8-week group program may be unlikely to enable sustained change for people with long-standing patterns of disengagement from activities or disrupted activity patterns. Hence, studies that further investigate AOI related change processes and outcomes over longer timeframes should be a priority, with changes in time use or activity patterns, meaningful engagement in occupations, and recovery related outcomes that matter from consumer perspectives given particular attention.

CONCLUSIONS

Involvement in self-chosen, personally and culturally meaningful activities is a recognized contributing factor in recovery and well-being (11, 27), so that the further development of effective approaches to individualized support for engagement in meaningful and healthy activity patterns is important (21). This is the first known attempt to explore the use of one such approach, Action Over Inertia (AOI), in Australian community residential mental health rehabilitation services. Further, it is novel in its description of AOI as a group-based intervention. The findings indicated that AOI provided Community Care Unit residents with valued support to identify barriers to more active living, to appreciate the connections between their time-use, health and well-being, to reframe inertia and take steps to overcome it. The group facilitators too gained a stronger appreciation of the importance of recognizing inertia as a challenge in facilitating people to effect change in their lives. Action Over Inertia offers a flexible approach that provides tools and resources to promote meaningful and healthy patterns of activity engagement as part of recovery oriented practice, the benefits of which merit further research in collaboration with adults receiving community mental health services.

DATA AVAILABILITY STATEMENT

The datasets presented in this article are not readily available because ethical approval for wider sharing of the original datasets was not granted in the interests of protecting participants' privacy and confidentiality. Requests to access the datasets should be directed to Ellie Fossey (ellie.fossey@monash.edu).

ETHICS STATEMENT

This study involving human participants was reviewed and approved by The Institutional Human Research Ethics Committees (HRECs) of Melbourne Health (2015.103) and La Trobe University Faculty of Health Sciences (LEG/13218) approved this research. The participants provided their written informed consent to participate in this study. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

AUTHOR CONTRIBUTIONS

ER undertook this research as part of her Masters of Advanced Occupational Therapy, designed the study, with support and guidance from the co-authors, interviewed the participants and analyzed the data, and drafted the initial manuscript. PE and EF supervised the research process, contributed to the manuscript development, reviewed and added material to manuscript drafts. All authors contributed to the article and approved the submitted version.

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Community Rehabilitation and Hospitalizations Among People With Chronic Psychotic Disorder: Is There a Differential Association by Co-occurring Substance Use Disorder?

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Objective: Co-occurrence of chronic psychotic disorders and substance use disorder (SUD) is clinically challenging and increasingly prevalent. In 2000, legislation was passed in Israel to foster rehabilitation and integration in the community of persons with mental health disorders. In 2010, the need to allocate resources for patients with these co-occurring disorders (COD) was officially recognized. Yet, most rehabilitation services were not specifically designed for COD. This study examines the relationship between duration of community rehabilitation and number of psychiatric hospitalization days among persons with/without COD in Israel.

Methods: Data from the National Psychiatric Case Register on 18,684 adults with schizophrenia/schizoaffective disorders hospitalized in 1963–2016, was merged with data from the Israel Mental Rehabilitation Register. Associations and interactions between COD-status (COD/non-COD), time-period (Period$_1$: 2001–2009, Period$_2$: 2010–2016), duration of housing or vocational rehabilitation on hospitalization days per year were analyzed using repeated-measures ANOVA.

Results: The proportion of non-COD chronic psychotic patients who received rehabilitation services increased from 56% in Period$_1$ to 63% in Period$_2$, as it did among COD patients—from 30 to 35%. The proportion of non-COD patients who received longer-duration vocational rehabilitation ($\geq$1 year) was significantly higher (43%) than among COD patients (28%) in both time periods. For housing rehabilitation, these proportions were 79 and 68%, respectively. Persons with COD experienced more hospitalization days annually than non-COD patients. Duration of rehabilitation (less/more than a year) was inversely associated with annual number of hospitalization days ($p < 0.0001$). This pattern was noted in both COD and non-COD groups and remained significant after controlling for age, sex, COD group, percent of hospitalizations with SUD, and age at first hospitalization.

Conclusions: COD patients with prolonged rehabilitation seemingly achieve long-term clinical improvement similar to non-COD patients, despite most rehabilitation settings in Israel not being designed for COD patients. Yet, COD patients receive overall less rehabilitation services and for shorter periods than non-COD patients. Long-term rehabilitation services should be provided to COD patients, who may need more time to commit to treatment. To achieve better long-term mental health improvements, a continued expansion of community-based integrative treatment and rehabilitation services for COD patients is needed in Israel.

Keywords: schizophrenia, substance use disorder, rehabilitation, co-occurring disorders, hospitalizations, Israel

BACKGROUND

One-fourth to two-thirds of patients with schizophrenia in the US and in Europe have a co-occurring Substance Use Disorder (SUD) (1–6). Analyzing data from the Israel National Psychiatric Case Register (INPCR), we recently reported a co-occurring disorder (COD) rate of 35% among Israeli adults with schizophrenia or schizoaffective disorder (7).

The co-occurrence of schizophrenia/schizoaffective disorder and SUD (also referred to as "dual diagnosis") is often characterized by a chronic relapsing course of illness. The recurrence or worsening of the SUD can also trigger relapse of a psychotic episode (8). SUD worsens the overall clinical course of schizophrenia—compared to people with schizophrenia only, people with co-occurring SUD tend to be less adherent to treatment, experience more frequent relapses, and have higher rates of violent and life-threatening behavior, suicides and homelessness (9–12). The treatment of persons with COD is particularly challenging and often more complex than treatment of persons without COD (13). In early stage disease (i.e., within 5 years from initial diagnosis), COD patients show fewer brain deficits than non-COD patients, however, over time, the clinical picture is reversed and brain deficits such as volume deficits, shape abnormalities, and abnormalities in default mode network activation are more commonly manifested among COD patients (14, 15). This change is related to the long-term neurotoxic sequelae, but still on average COD patients have more preserved social and emotional functions during the premorbid phase as well as later on. COD patients also have better executive functioning which enables them to maintain their substance using behaviors (14).

The positive effect of community rehabilitation services on patients with severe mental illness, and schizophrenia in particular, has been widely reported (16–19). Community rehabilitation helps improve the functioning, well-being, symptoms severity and self-esteem of schizophrenia patients. There is also worldwide evidence that community rehabilitation is associated with a reduction of hospitalizations and frequency of hospitalization among persons with schizophrenia (20–23). This is likely achieved through positive effects of employment and regular contact and monitoring of the patient which allows for early detection of deterioration in the individual's mental health status and rapid referral for primary care thereby precluding the need for hospitalization.

The *Community Rehabilitation of Persons with Mental Disability Law* was enacted in Israel in the year 2000 with the aim to foster "the rehabilitation of persons with mental health disorders and their integration in the community, in order to enable them to attain the maximal degree of functional independence and quality of life, while maintaining their dignity." This law initiated a reform in hospitalization services with the aim of reducing the number of psychiatric hospital beds alongside the establishment of community rehabilitation services, which began operating in 2001.

Of the rehabilitation services offered (vocational, housing, educational, leisure, family support, and treatment coordinator), vocational and housing rehabilitation are the most common, offer the greatest support and are usually the longest in duration. The aim of housing rehabilitation is to enhance social and housekeeping skills for independent-living in the community, by means of finding suitable and dignified housing conditions, with provision of support and on-going contact with community services. Vocational rehabilitation services promote finding and maintaining employment adapted to the wishes and capacities of the individual (24). Rehabilitation programs are generally personalized and accompanied by mental health therapists.

Until recently no rehabilitation services were available for persons with co-occurring disorders of severe mental illness (SMI) and SUD, and those with active drug use were generally denied services. It was only in 2010 that the Israeli parliament officially recognized the need to allocate additional resources for patients with COD (25). These resources included gradual opening of services for COD patients in hospitals and in the community and training of mental professionals about COD.

Enactment of the Community Rehabilitation law lead to the opening of private community-based rehabilitation services regulated and funded by the Ministry of Health (26) and was the precursor of the national insurance mental health reform formally launched in 2015. The reform aimed to integrate mental health services into the general healthcare system (primarily provided by the four HMOs that serve the Israeli population), and reduce the number of psychiatric hospitalizations through the expansion of ambulatory services (27). Overall, these policy shifts have resulted in the reduction of psychiatric hospital beds, number of hospitalization days, and rate of psychiatric hospitalizations (24, 27). People with SMI receiving rehabilitation are being hospitalized for shorter periods and the time between hospitalizations has lengthened (28). This was also true for schizophrenia and schizoaffective disorder patients in particular (22). The re-hospitalization rate decreased among patients with schizophrenia with an in-patient stay longer than 6 months (chronic patients) although not for short-stay patients with schizophrenia or affective disorders (29).

Regrettably, the treatment of addictions and the care of COD patients of SMI and SUD were excluded from the mental health reform of 2015. Patients with COD remained under the responsibility of the Ministry of Health, and are not entitled to receive treatment for their disorders from their HMO (27). Thus, the therapeutic options offered to COD patients, both in hospitals and in the community were, until very recently, limited, and many patients remained without adequate treatment (30–32). This situation existed, despite a growing awareness in recent years among health policy-makers in Israel about the need to allocate additional resources to treat patients with COD (25).

The present study, the first in Israel, examines the relationship between mental rehabilitation in the community and hospitalization characteristics of people with chronic psychotic disorder with and without SUD. We hypothesized that the rate of COD (comorbid chronic psychotic disorders and SUD) patients receiving rehabilitation services will be lower than that of non-COD patients, and that rehabilitation will be associated with a decrease in the number of hospitalization days over time for both groups, with a more substantial decrease among those without SUD.

METHODS

Data were extracted from Israel's Mental Rehabilitation Register (IMRR) and merged with the National Psychiatric Case Register (NPCR) of the Ministry of Health. The NPCR is the official register of all psychiatric admissions and discharges countrywide since 1950 (33). As described in a previous report (20), we identified all adult patients (aged 18–65) hospitalized in a psychiatric hospital or a psychiatric ward of a general hospital during the period 1963–2016, with an ICD-10 diagnosis (34) of schizophrenia (F20) or schizoaffective disorder (F25) (SZ-SAD) at their last discharge. We restricted the study population to persons hospitalized at least once during the years 2010–2015 in order to ensure that the data and the findings are relevant.

For each hospitalization, a SUD diagnosis is recorded based on an ICD-10 diagnosis of F10–F19 in the categories of dependence and abuse (excluding F17—nicotine dependence) and/or a psychiatrist-documented indication of alcohol and/or drug abuse at admission or discharge. Patients were classified as COD if they had a SUD diagnosis in two or more hospitalizations, or in at least 20% of their hospitalizations.

Each person's hospitalization history was documented from his/her first hospitalization until the end of 2016. A total of 18,684 patients with 168,377 hospitalizations were included in the analysis after exclusion of 29 patients who had an anomalous number of hospitalizations (≥80).

The hospitalization data was merged with data from the IMRR that included: applications to the regional rehabilitation committee, type of rehabilitation service approved (either housing or vocational) and the total length of time the person actually received the service in each of the two time periods 2001–2009 (Period_1) and 2010–2016 (Period_2). We divided the periods before and after 2010, the year in which the Israeli parliament officially recognized the need to allocate additional resources to treat patients with COD (25). Community rehabilitation services began operating in 2001, and hence this defined the start of the study period.

To assess the impact of rehabilitation duration on hospitalization patterns, we compared hospitalization patterns of people who did not receive any rehabilitation services, people who received rehabilitation services for <1 year and those who received services a year or more. A one-year cutoff was adopted because the likelihood of dropping out of rehab is greatest during the first year (29, 35) and often is the result of the person not fitting in (e.g., not allowing therapeutic contact) or not complying with the service's rules (e.g., harassing or assaulting other service recipients). Completion of the first year often suggests that the person is benefiting from the service in terms of improved quality of life, clinical condition and social functioning, and rehabilitation is likely to be sustained for longer periods of time (28, 35, 36).

This secondary analysis study was conducted in accordance with the Helsinki Declaration and was approved by the IRB of the Israel Ministry of Health. Patients' identification information was anonymized from all datasets prior to being released to the researchers.

Analysis

Associations between the independent variables [COD-status and length of housing/vocational rehabilitation in Period_1 (2001–2009) and in Period_2 (2010–2016)] and mean annual number of hospitalization days were assessed using χ^2 and t-tests, as appropriate. Repeated measures ANOVA was used to track changes in hospitalization variables across the two time periods. Multivariate ANCOVA modeling for mean hospitalization days per year was performed to identify predictors including rehabilitation length, age, age at first hospitalization, sex, COD-status and percent of hospitalizations with SUD. Statistical significance level was set at $p < 0.05$ to help guide interpretation of the results. The data were analyzed using IBM® SPSS® Statistics, version 24.0.

RESULTS

Of the 18,684 persons with a psychiatric hospitalization between 2001 and 2016, 28.8% had a co-occurring disorder (**Table 1**). The COD group was predominantly male (85%) compared with 58% of the non-COD group, and was 3.5 years younger, on average, than the non-COD group. For persons with COD age at first hospitalization was 2.4 years younger than those without COD. The rate of approval by the regional rehabilitation committees for housing rehab services was slightly higher among those with chronic psychotic disorder without COD (90%; SD = 23%) than

TABLE 1 | Demographic characteristics of people with schizophrenia/schizoaffective disorder (aged 18–65) with a psychiatric hospitalization during the period 1963–2016, by co-occurring SUD status, Israel.

	Total		COD		Non-COD	
	%	No.	%	No.	%	No.
No.	100	18,684	28.8	5,379	71.2	13,305
Sex						
Female	34.2	6,387	15.2	818	41.9	5,569
Male	65.8	12,297	84.8	4,561	58.1	7,736
Population group						
Jewish	85.6	15,145	84.9	4,251	85.8	10,894
Arab	14.4	2,556	15.1	758	14.2	1,798
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
Age	43.4	11.5	40.9	10.4	44.4	11.8
Age at first hospitalization	27.4	9.9	25.7	8.0	28.1	10.5

COD, co-occurring disorders of chronic psychotic disorder and substance use disorder; non-COD, chronic psychotic disorder (schizophrenia or schizoaffective disorder) without co-occurring substance use disorder.

TABLE 2 | Percent of patients who received housing and/or vocational rehabilitation services by period (2001–2009, 2010–2016) and overall, and by COD status.

		Period		
Service	**COD-status***	**2001–2009**	**2010–2016**	**2001–2016**
Housing and Vocational	Non-COD	35	56	63
	COD	30	48	56
	Total	31	54	61
Housing only	Non-COD	20	35	41
	COD	18	32	38
	Total	20	34	40
Vocational only	Non-COD	26	44	51
	COD	22	40	46
	Total	25	43	49

COD, co-occurring disorders of chronic psychotic disorder and substance use disorder; non-COD, chronic psychotic disorder (schizophrenia or schizoaffective disorder) without co-occurring substance use disorder.
**$p < 0.005$ for all COD vs. non-COD comparisons.*

among persons with COD (85%; SD = 27%) ($p < 0.0001$). The rate of vocational rehabilitation service approval was identical in both groups (93%).

Regarding receipt of rehabilitation services, 63% of non-COD patients and 56% of those with COD received rehabilitation services at some point during 2001 and 2016 ($p < 0.0001$). In both groups, an increase over time was observed. Among patients without COD, 35% received rehabilitation services in Period_1 and this rate increased to 56% in Period_2, and among patients with COD the rehabilitation service rate increased from 30 to 48% across the two time periods (**Table 2**).

As seen in **Table 3**, the average duration of housing and vocational rehabilitation services was shorter for COD patients than non-COD patients. It is worth noting that the mean duration of rehabilitation among those who received services for more than 1 year was 2–6 years (792–2223 days), while among those who received services for <1 year the mean duration was 4–6 months (132–191 days). Duration of rehabilitation was inversely associated with percent of hospitalizations with a SUD diagnosis ($p < 0.001$).

Overall, non-COD patients also received vocational rehabilitation for longer duration than COD-patients. 43% of people without COD who received vocational rehabilitation for more than a year in both periods, compared to 28% of people with COD (**Table 3**). Also, 18% of non-COD people received vocational rehabilitation for less than a year in both periods, compared to 28% of people with COD.

Among persons who received housing-rehabilitation both during Period_1 and Period_2, duration of rehab was inversely associated with annual number of hospitalization days. As seen in **Figures 1**, **2**, the mean number of hospitalization days was highest for those who received housing or vocational rehabilitation services for <1 year. This was true for those with and without COD. In Period_1 the mean number of hospital days was lowest among those who did not receive any rehabilitation, whereas in Period_2 those who received more than 1 year of rehab experienced the fewest hospital days per year. COD-status was also significantly associated with hospitalization days—the mean number of hospitalization days/year was consistently higher among those with COD. Comparing Panel A and Panel B, a decrease in hospitalization days from Period_1 to Period_2 was noted only among those who received rehabilitation over a year. People who received vocational rehabilitation experienced fewer hospitalization days than people with housing rehabilitation (**Figures 1**, **2**).

As seen in **Figure 3**, when we restricted the analysis to those who received any housing rehabilitation in both periods, for both groups, longer rehabilitation (more than 1 year) in both periods was associated with the fewest hospitalization days, and short rehab (<1 year) with the most hospitalization days.

People without COD received housing rehabilitation for longer periods−79% of people without COD who received housing rehabilitation, received rehabilitation for more than a year in both periods, compared to 68% of people with COD. Also, 2% of people without COD received housing rehabilitation for less than a year in both periods, compared to 6% of people with COD ($p < 0.0001$).

As seen with housing rehabilitation, duration of vocational rehabilitation for patients who received any vocational rehabilitation in both periods was also inversely associated with mean days of hospitalization per year ($p < 0.0001$). Having received vocational rehabilitation for <1 year in either Period_1 or Peroid_2 was associated with a greater number of hospitalization days per year in 2010–2016 (**Figure 4**).

People without COD received vocational rehabilitation for longer periods−43% of people without COD who received vocational rehabilitation received rehabilitation for more than a year in both periods, compared to 28% of people with COD. Also,

TABLE 3 | Average duration of rehabilitation (in days) by period (2001–2009, 2010–2016) among recipients of housing and vocational rehabilitation services.

Service	Period	Rehabilitation duration (days)	non-COD	COD	
			Mean (SD)	Mean (SD)	*p*-value
Housing	2001–2009	≥365	2223 (1338)	1754 (1152)	<0.0001
		<365	191 (100)	178 (100)	0.105
		Total	1916 (1432)	1373 (1209)	<0.0001
	2010–2016	≥365	1448 (682)	1305 (659)	<0.0001
		<365	187 (104)	181 (102)	0.28
		Total	1219 (787)	1013 (753)	<0.0001
Vocational	2001–2009	≥365	1104 (643)	916 (532)	<0.0001
		<365	141 (105)	132 (103)	0.06
		Total	704 (687)	459 (523)	<0.0001
	2010–2016	≥365	839 (346)	792 (324)	<0.0001
		<365	146 (106)	132 (100)	<0.0001
		Total	508 (433)	406 (394)	<0.0001

18% of non-COD people received vocational rehabilitation for less than a year in both periods, compared to 28% of people with COD ($p < 0.0001$).

The association between mean number of hospital days and rehabilitation remained significant upon controlling for age, sex, COD group, percent of hospitalizations with SUD, and age at first hospitalization. Multivariate ANCOVA modeling revealed a significant independent association between mean hospitalization days per year during 2010–2016 and COD-status ($p < 0.0001$). Numer of hospital days was independently associated with percent of hospitalizations with SUD ($p = 0.025$) and with male sex ($p < 0.0001$), and inversely associated with age at first hospitalization ($p < 0.0001$). Age at time of the study was not associated with annual number of hospitalization days.

DISCUSSION

The results show that from 2001–2009 to 2010–2016 there was an almost 2-fold increase in the proportion of people with chronic psychotic disorder who received rehabilitation. This trend is similar among COD and non-COD patients. In the latter period, two-thirds (63%) of persons without COD and slightly over half (56%) of those with COD received rehabilitation services. The increase in the proportion of people receiving rehabilitation services reflects the development of the rehabilitation system in Israel, which over the years has recognized the need to expand rehabilitative care in the community, thus opening more rehabilitative frameworks. These findings are consistent with previous reports regarding the growth of community rehabilitation services in the country (31, 37).

The percentage of people without COD who qualify for rehabilitation services was significantly greater than those with COD, although the difference is not large. We expected, in light of our clinical experience, a much larger disparity in rehabilitation eligibility in favor of persons without COD. In addition, until recently, and during most years of the current study, there was a declared policy of the Rehabilitation Committees of not providing services to people with active drug use (32). Several explanations for the discrepancy between our hypothesis and the results can be posited. One possible explanation is a cognitive bias which appeared in cases where the Rehabilitation Committee rejected a request for rehabilitation services, due to drug use history. This aroused negative feelings such as disappointment among therapists and patients, and thus such cases might be more recalled than cases where approval was obtained.

Another possibility of the described discrepancy is related to the definition of the COD group in our study (people with at least two hospitalizations, or at least 20% of their hospitalizations with an indication of SUD). We found that people from the COD group who received rehabilitation services, had SUD recorded in less than half of their hospitalizations. Approval for rehabilitation services might have been granted during hospitalizations without active SUD, whereas in other hospitalizations with active drug use, rehabilitation services were refused.

In addition, hospital therapists who submit the patient to the Rehabilitation Committee may not always fully disclose drug use information when the use is not very intense (even in the presence of SUD diagnosis), out of a concern that the information would cause the Committee to reject the request for rehabilitation services.

Our results indicate that persons who received rehabilitation for a longer duration (a year or more) in Period_1 and/or Period_2, had on average fewer hospitalization days annually in Period_2 than those who received rehabilitation for <1 year. This finding corresponds with worldwide studies, including in Israel, which show that community rehabilitation services are associated with fewer hospitalization days and less frequent hospitalizations among people with schizophrenia (20–23).

The finding that people who did not receive rehabilitation services had fewer days of hospitalization than people who received rehabilitation is surprising at first glance. A possible explanation for this could be better underlying clinical condition

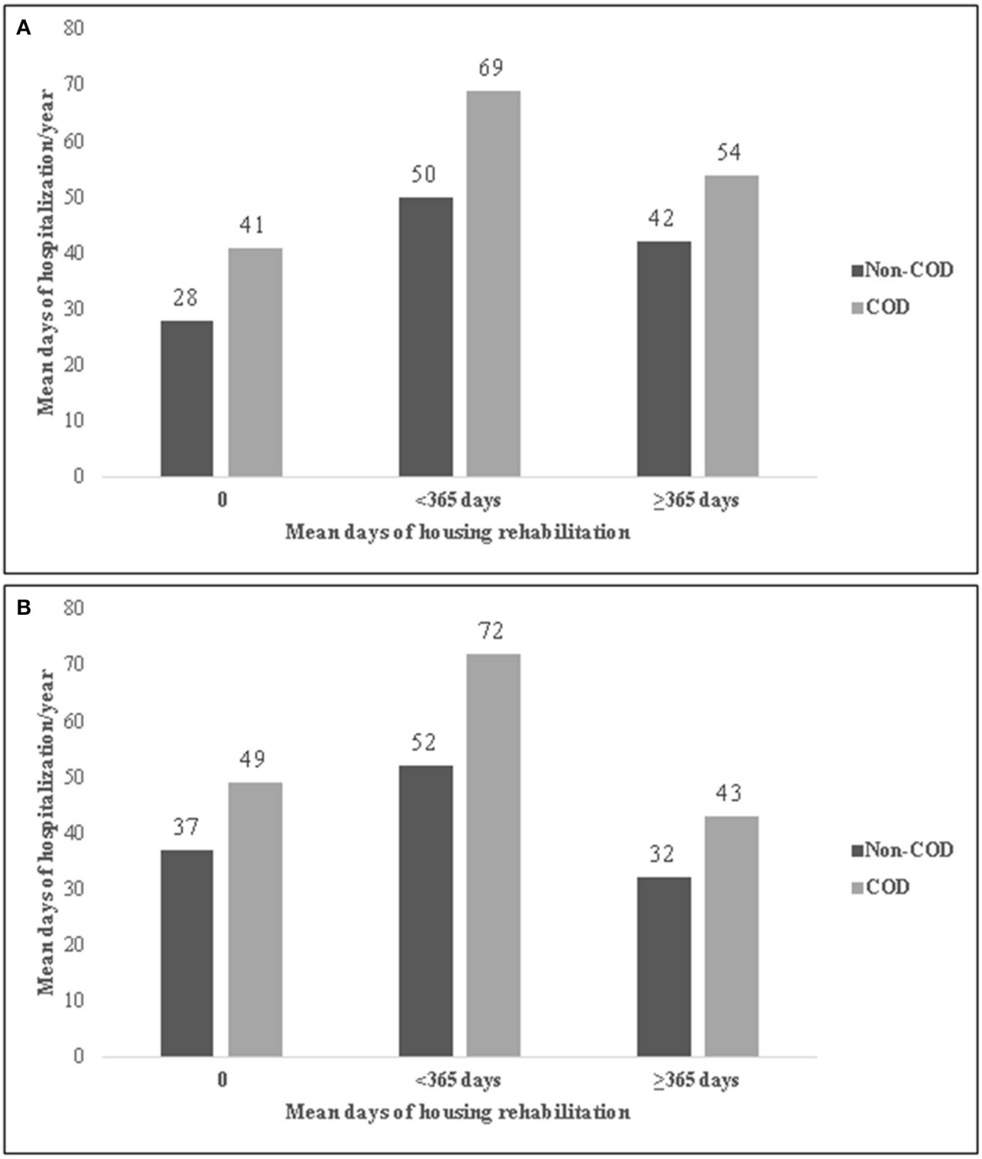

FIGURE 1 | Mean psychiatric hospitalization days per year by duration of housing rehabilitation in Period_1 (2001–2009) **(A)** and Period_2 (2010–2016) **(B)**, among hospitalized persons with co-occurring disorders (COD) of chronic psychotic disorder and SUD, Israel, 2010–2016. **(A)** Period_1. **(B)** Period_2.

or stronger support from family or other sources, which enable these persons to manage in the community without rehabilitation services. Indeed, the group who did not receive services includes a small proportion (<10%) whose application for rehabilitation services was refused.

The finding that those who received rehabilitation services for a short duration had, on average, more hospitalization days compared to people with longer rehabilitation, can be easily understood. People who dropped out from the rehabilitation setting may have been discharged from the hospital before a sufficient improvement was achieved and thus were not yet able to adapt to a rehabilitation community setting. It is also possible that joining a new therapeutic framework in the community posed a stressor they could not easily overcome, thus leading to a clinical exacerbation and re-hospitalization. Another explanation could be that some clinical or personality characteristic made it difficult for them to cope with the rehabilitation requirements and to benefit from the rehab services, and these same characteristics had an impact on the higher frequency of hospitalizations and greater number of hospitalization days per year.

The relatively low number of hospitalization days among people receiving longer-duration rehabilitation reinforces the assumption that prolonged rehabilitation is beneficial to patients' mental health and helps prevent re-hospitalization. This assumption is further supported by the finding that persons

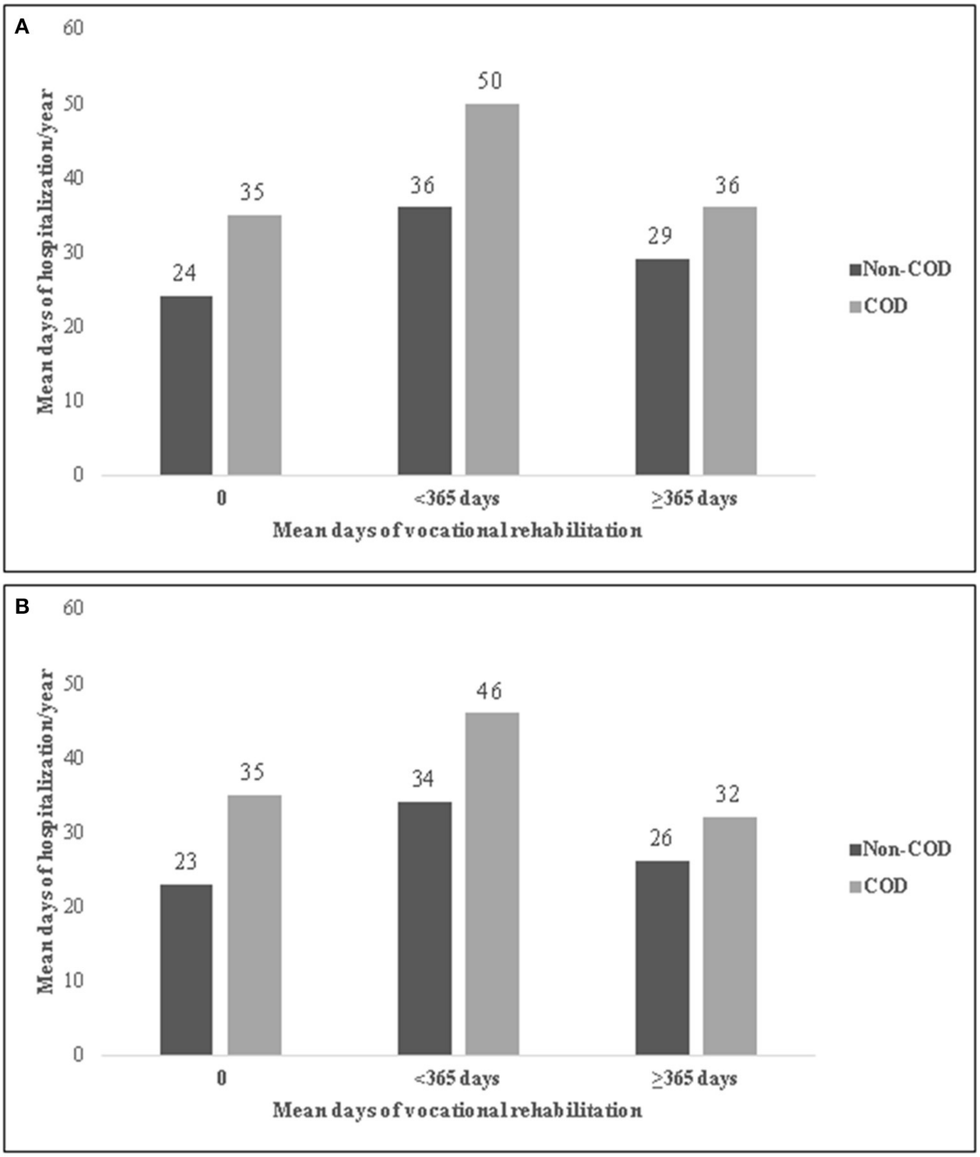

FIGURE 2 | Mean psychiatric hospitalization days per year by duration of vocational rehabilitation in Period_1 (2001–2009) **(A)** and Period_2 (2010–2016) **(B)**, among hospitalized persons with co-occurring disorders (COD) of chronic psychotic disorder and SUD, Israel, 2010–2016. **(A)** Period_1. **(B)** Period_2.

who received rehabilitation for a short time in Period_1 and then received longer rehabilitation in Period_2, experienced fewer days of hospitalization. At the same time, the possibility of an underlying confounding clinical or personality characteristic, as mentioned, or higher levels of intrinsic motivation and better family relationship (38) cannot be ruled out.

Duration of vocational rehabilitation, as well as housing rehabilitation, was found to be inversely associated with number of hospitalization days. Although we cannot assume independence between housing rehabilitation and vocational rehabilitation, as some may receive both, those who received vocational rehabilitation experienced fewer hospitalization days per year than those who received housing rehabilitation. Vocational rehabilitation, therefore, may have an even greater effect than housing rehabilitation on the patient's mental condition and on hospitalizations. Employment is especially important for people with COD, because it reduces a sense of emptiness by filling their time with productive activity, improves their quality of life and provides a sense of meaning and self-esteem. This may in turn lessen the emotional need to return to substance abuse and reduce the risk of relapse and re-hospitalizations (39, 40).

We previously reported that from 1991–2016 there was no improvement in the average number of days of hospitalization per year for people with COD, while for those without COD the number of hospitalization days was reduced by half (20). Nonetheless, the most striking results of the present study are that rehabilitation is at least as beneficial for people with COD

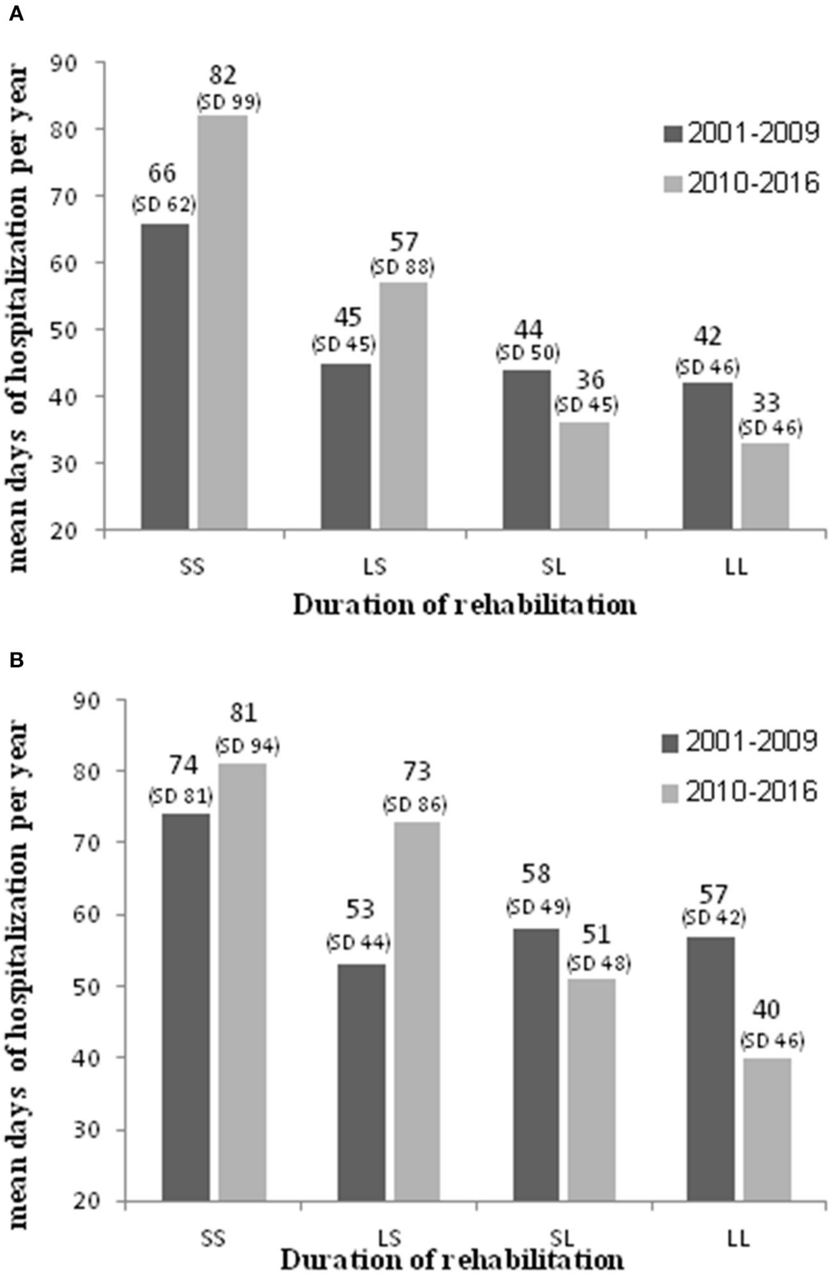

FIGURE 3 | Mean psychiatric hospitalization days per year, by duration of housing rehabilitation in Period_1 (2001–2009) and Period_2 (2010–2016), among hospitalized persons with chronic psychotic disorder without co-occurring SUD **(A)** and with SUD **(B)** who received any housing rehabilitation, Israel, 2010–2016. **(A)** Hospitalized persons with chronic psychotic disorder without SUD. **(B)** Hospitalized persons with chronic psychotic disorder with SUD. SS, short rehabilitation in Period_1 and Period_2; LS, long rehabilitation in Period_1 & short in Period_2; SL, short rehabilitation in Period_1 & long in Period_2; LL, long rehabilitation in Period_1 and Period_2.

as for those without COD, and this is also reflected in a decrease in hospitalization days for both groups. This, despite the fact that at the time of the study there were very few rehabilitation frameworks designed for COD patients, and therefore most chronic psychotic people with SUD underwent rehabilitation in settings that did not have COD specialty. However, this interpretation is posited with caution, since it is likely that non-specialized rehabilitation settings are most suitable for persons with lower severity of SUD, such as occasional drug abuse, while those with severe addiction are less likely to manage in a non-specialized setting.

The significantly higher annual number of hospital days, on average, among persons with co-occurring chronic psychotic disorders and SUD, even after controlling for age, sex and percent

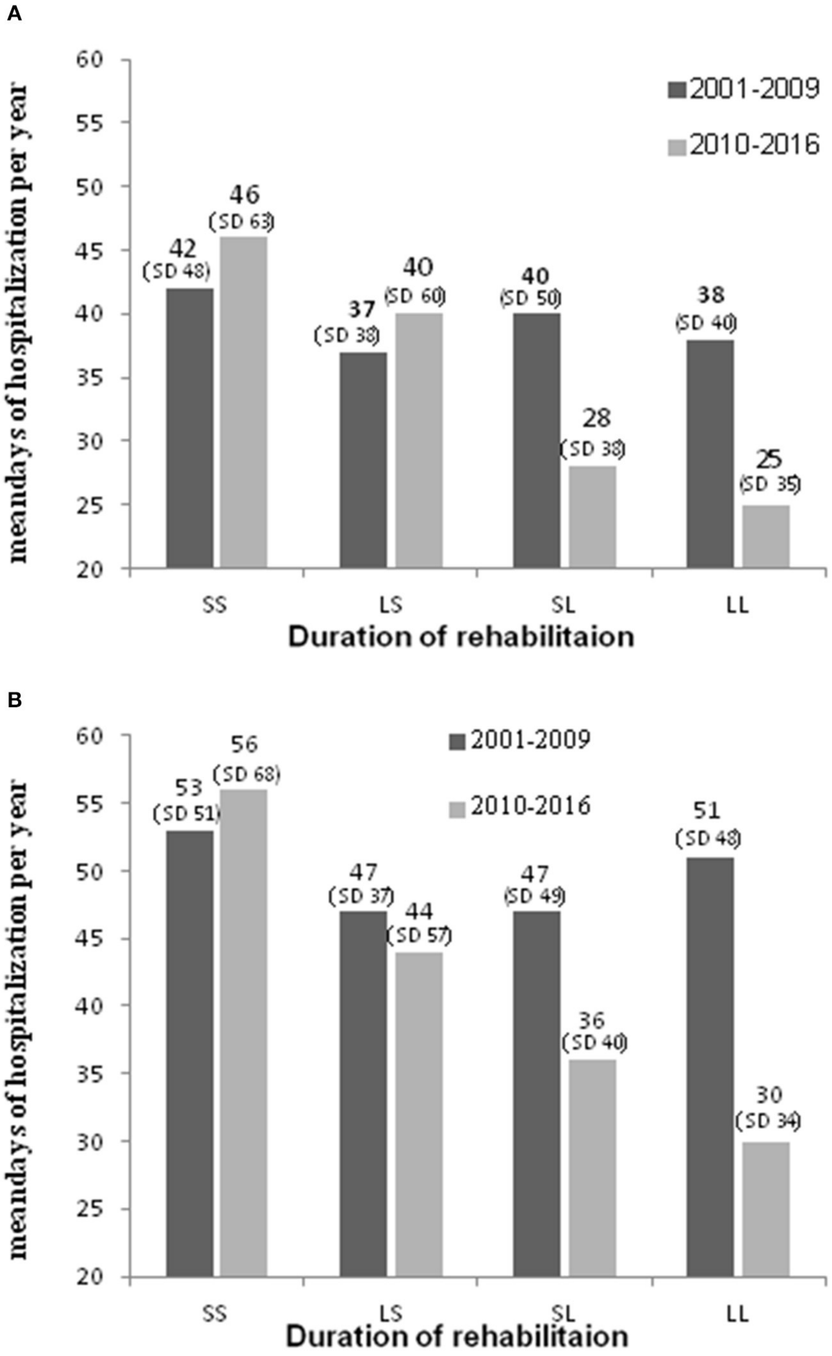

FIGURE 4 | Mean psychiatric hospitalization days per year, by duration of vocational rehabilitation in Period$_1$ (2001–2009) and Period$_2$ (2010–2016), among hospitalized persons with chronic psychotic disorder without co-occurring SUD **(A)** and with SUD **(B)** who received any vocational rehabilitation, Israel, 2010–2016. **(A)** Hospitalized persons with chronic psychotic disorder without SUD. **(B)** Hospitalized persons with chronic psychotic disorder with SUD. SS, short rehabilitation in Period$_1$ and Period$_2$; LS, long rehabilitation in Period$_1$ & short in Period$_2$; SL, short rehabilitation in Period$_1$ & long in Period; LL, long rehabilitation in Period$_1$ and Period$_2$.

of hospitalizations with SUD and age at time of study, and the higher frequency of hospitalizations (20), may be a result of more frequent substance-related exacerbations of the clinical condition (8, 41), greater difficulty in cooperating with treatment over time, and longer periods of non-adherence to treatment, as compared with non-COD patients (11, 41–43).

It is also important to note that compared with those without COD, the COD group who received rehabilitation in 2001–2009 and 2010–2016, had a 2–3-fold higher proportion of people who received rehabilitation for less than a year. This might be attributed to personal characteristics of some persons with COD, such as impulsivity (44–46), or directly to drug use that led to the cessation of rehabilitation services, and/or to a shortage of rehabilitation frameworks specifically designed for COD patients.

STRENGTHS AND LIMITATIONS

This study utilized data from the Israel Mental Rehabilitation Register and the National Psychiatric Case Register that captures virtually all psychiatric hospitalizations. Complete hospitalization histories were obtained for all in-patients diagnosed with schizophrenia or schizoaffective disorder in Israel in the period 2010–2015. The retrolective design of the study precluded the analysis of some important demographic and clinical variables, such as severity of the psychotic disorder and SUD, level of functioning, degree of motivation for rehabilitation and level of family support. These factors affect the ability to sustain and benefit from rehabilitation services and on the likelihood of re-hospitalization. Because the severity of patients' SUD was unknown, it was not possible to ascertain whether SUD severity was related to being accepted into and staying in a rehabilitation framework. The relationship between the severity of SUD and the number of hospitalization days is also unknown. It is also possible that for some COD patients, SUD developed subsequent to their first hospitalization, or that SUD was less documented in earlier years. However, we found that for the majority of COD patients, SUD was already documented early in their hospitalization history. Specifically, 85% of patients hospitalized in both periods (2001–2009, 2010–2016) were already diagnosed with SUD in Period_1. We believe therefore, that the cross-period comparisons are trustworthy, albeit perhaps with some margin of bias.

In addition, in our study, COD is defined as a SUD diagnosis present in at least two hospitalizations or in at least 20% of each patient's hospitalizations rather than the more commonly used "lifetime" or first-hospitalization SUD definition. We believe this enhances the COD diagnostic validity (specificity) as it describes a chronic comorbid drug use pattern. Indeed, on average, a SUD diagnosis was documented in more than half (54%) of all hospital admissions amongst those classified as COD. We did not adopt stricter COD criteria (i.e., SUD diagnosis appears on a greater proportion of admissions) out of a concern that the secondary SUD diagnosis may be under-recorded, as has been noted in other countries (47). Furthermore, since the standard urine drug tests used in Israel do not detect commonly-used novel psychoactive substances (NPS), suspected drug use cannot always be confirmed in the event that the patient denies use.

Twenty-nine individuals with more than 80 hospitalizations were not included in the analyses. The decision to exclude them stemmed from an impression that the excessive numbers of hospitalizations might have been due to double reporting. Regrettably, the data for these individuals is unavailable and we are unable to rerun the analyses with them included to assess the impact of the exclusion. We believe the impact is negligible given the small number excluded.

Lastly, the unequal duration of Period_1 (2001–2009) and Period_2 (2010–2016) may introduce some measure of confounding by factors differentially distributed across the two time periods. The periods were defined in accordance with the study objective to assess the government's decision to allocate additional resources toward the treatment and rehabilitation of persons with COD. We are unaware of any substantial temporal changes in treatment or quality of services, beyond the expansion of rehabilitation services. Defining the unit of analysis for number of hospital days as "per year" rather than per period, will have minimized the effect of any such confounding.

CONCLUSIONS

In summary, the results of our study show that people with COD appear to have the potential for significant rehabilitation when given the opportunity. Also, it seems that at least some people with COD can go through a prolonged rehabilitation process in the community even in settings that are not specifically designed for people with SUD. However, persons with COD are less likely to remain in rehabilitation for prolonged periods. Findings of this study show that when rehabilitation is prolonged and lasts for at least a year, there is a significant reduction in hospitalization days. These findings reinforce the clinical importance of sustained rehabilitation for people with COD, for whom longer rehabilitation may be required to commit to rehabilitation and to attain clinical stabilization than for persons without COD. It is likely that if rehabilitation frameworks are dedicated for people with COD, those with even more severe SUD may benefit from rehab and will be less likely to drop out early. The process of expanding the rehabilitation services designed for COD patients should be accelerated and more healthcare providers should be trained in evidence-based practices for COD. As this process continues to evolve, we will likely see a significant improvement in the clinical condition of these patients over time and in their ability to manage and re-integrate in the community, and as a result their need for hospitalizations is expected to decline.

DATA AVAILABILITY STATEMENT

The datasets analyzed in this study were obtained from the Ministry of Health of Israel. Access to the data is highly restricted due to the sensitive nature of pyschiatric patient data. Requests to access these datasets should be directed to Mr. Reuven Eliyahu (reuven.eliahu@moh.gov.il) Data Security Office, Ministry of Health.

AUTHOR CONTRIBUTIONS

All the authors designed the study. SF wrote the first draft of the manuscript. TB-A designed the methods for data analysis. YN and PR proofed and revised the manuscript. All authors contributed to the article and approved the submitted version.

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frontiers in Psychiatry

ORIGINAL RESEARCH
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Interpersonal Relations Within the Context of Resource Groups for People With Severe Mental Illness: A Narrative Approach

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Objective: The resource group method intends to promote patients' agency and self-management and to organize meaningful partnerships between patients and their informal and formal support systems. The aim of this study was to enhance the understanding of interpersonal dynamics that arise within resource groups for people with severe mental illness. Insight into these unfolding processes would enable improved implementation of the resource group method so that it contributes to establishing a positive social environment, which can lead to more enduring recovery.

Methodology: We performed a narrative analysis of transcripts and field notes obtained in a longitudinal, qualitative study on the resource group method. The stories of four different resource groups were reconstructed and analyzed in depth. Data included a total of 36 interviews (with patients, significant others, and mental health professionals) and 18 observations of resource group meetings.

Results: The degree to which the resource group method actually contributes to recovery was based on the extent to which the existing roles of and patterns between the patient and his/her resource group members were altered. Breaking through old patterns of inequality and the joint search for a new balance in relationships proved to be crucial processes for establishing an empowering resource group. The four cases showed that it takes time, patience, and small steps back and forth to overcome the struggles and fears related to finding new ways of relating to each other. An honest and reflective atmosphere in which all participants are encouraged to participate and be curious about themselves and each other is essential for changes in interpersonal dynamics to emerge. Such changes pave the way for individuals with SMI to find their own voices and pursue their unique recovery journeys.

Conclusions: The functioning of the resource group and the ability of the involved members to respond in new ways are important when working toward the patient's recovery goals. The resource group method should therefore not be considered an intervention to organize informal support for the patient, but a platform to expose and adjust the functioning of the patient's social network as a whole.

Keywords: recovery, family involvement, empowerment, resource group, severe mental illness, assertive community treatment, narrative analysis, interpersonal dynamics

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INTRODUCTION

Over the past 40 years, a confluence of factors has contributed to the evolution of a renewed view of mental health recovery for people with severe mental illness (SMI). There is increased recognition that patients are surrounded by social networks that may support, undermine, substitute, or supplement professional help (1, 2). Together with processes of deinstitutionalization and changing ideas about "good care," this recognition has led to an increased focus on community care in the last few decades (3, 4). Simultaneously, the consumer/survivor movement has fought for patients' right to co-decide and co-create the care and support they receive, and it has aimed to achieve greater empowerment for patients, de-stigmatization, and renewed hope for the future (5, 6). As a consequence, international policies and guidelines now emphasize the importance of partnerships between mental health professionals, service users, and their social networks to improve service quality and enhance the empowerment and involvement of service users and their significant others (7).

Evolving from this movement, the resource group (RG) method (8) is a promising way to combine the call for agency and self-management with the appeal to organize meaningful partnerships and establish care that is embedded within community life. The origins of the RG method lie in the Optimal Treatment (OT) model, which integrates biomedical, psychological, and social strategies in the management of SMI (9, 10). In Sweden, the model was further developed and relabeled as Resource Group Assertive Community Treatment (R-ACT) (11–13), in which ACT teams were enriched by RGs. Research on R-ACT has focused on effectiveness and found improvements in functioning, well-being, and symptoms for people with psychosis (12, 13). Implementation and effectiveness of RGs outside Sweden is being investigated (14).

To create an RG, patients invite significant others from their informal network (such as friends and family) and their formal network (such as mental health nurses, social workers, or job coaches). Each RG has a unique composition that is suited to the individual and their recovery wishes and needs. During RG meetings, which are held quarterly, the RG discusses the patient's goals and wishes and jointly determines a recovery plan (8).

Central to the RG method is the assumption that recovery emerges from the relationship between individuals and the social and cultural environments in which they are embedded (15–17). Extensive research indicates that the presence and involvement of significant others contributes to recovery, as they are a source of warmth, support, and encouragement. For example, family members possess a deep knowledge of the patient from years of "standing alongside the person," and can prevent them from adopting a stigmatized, illness-related self-image (18). Also, families can encourage engagement with treatment plans and recognize early warning signs of relapse (19), and they can assist the patient in accessing services during periods of crisis (20–22). In addition, it has been reported that families can provide practical assistance, such as by offering temporary housing or cooking meals (23).

However, establishing positive social support and rebuilding beneficial social networks that enable recovery are recognized as challenging features of treatment programs. Some forms of assistance or specific behaviors or communications can unintentionally lead to aversive events or stress for the person with SMI. Thorough investigations have found that high levels of expressed emotions within the social environment—referring to close kin's criticism, hostility, and over-involvement in relation to a relative with schizophrenia—can be a source of stress that negatively impacts the course of the psychiatric disorder (24, 25). In addition, the involvement of significant others can impede the recovery process when they remain fixated on a helper role and are unable to support an individual's movement toward autonomy and reciprocal relationships (23, 26). Also, family members who do not understand how environmental cues, adverse events, or stress can increase the risk of relapse might act in ways that increase risks without realizing it (27).

Taken together, although the involvement of significant others in treatment and care has been broadly acknowledged as a source of support that leads to more positive outcomes, more knowledge about interpersonal dynamics is needed to shape social support interventions. In addition, while mental health professionals fulfill an important part of the interpersonal dynamics within a RG, beneficial and hindering aspects of their attitudes are not well-understood. Hence, the aim of this paper is to provide an in-depth understanding of the interpersonal dynamics that arise within RGs and their influence on the recovery journey of the individual suffering from SMI and his/her significant others. Insight into these unfolding processes enables improved implementation of the RG method so that it contributes to establishing a positive social environment, which leads to a more enduring recovery for people with SMI.

METHODOLOGY

Resource Group Method

To work according to the RG method (11–14, 28), the patient first asks his/her significant others and mental health professionals to join the RG. This is referred to as *nominating*. Then, the patient is stimulated to take the lead in preparing the first RG meeting by deciding on the location and chairman (preferably the patient themself). In addition, together with a mental health professional, they develop an RG plan that contains the recovery goals they want to discuss during the meeting. Before the first meeting, the professional separately invites all nominated RG members to engage in an in-depth preparatory conversation to discuss the relationships among the nominee, the patient, and the other RG members as well as the role the nominee wants to have in the RG. Follow-up RG meetings are scheduled, on average, once every 3 months. The composition of the RG is flexible and might change over time depending on the patient's goals, wishes, and phase of recovery. In the present study, the RG method was implemented in the context of Flexible Assertive Community Treatment (FACT) (29), the most frequently used outreach service in the Netherlands. FACT involves a multidisciplinary team who provides individual care—including case management and home visits—and scales up to team care with intensive, full ACT when needed.

Design

This paper is based on a narrative phenomenological-hermeneutic analysis [(30), p. 295] of transcripts and field notes that were derived as part of a larger qualitative study exploring multiple perspectives on the RG method for people with SMI. The methodology of the larger study, including the recruitment of the cases, is described in depth elsewhere (31). In short, the study used a longitudinal multiple case-study design based on grounded theory (32, 33) to explore the developments and processes in eight RGs. Five of these cases were studied by the first author, and three were studied by the second author. In the current paper, the five cases studied by the first author are re-analyzed from a within-case perspective. One case was dropped because no informal network was involved in the RG and thus it contained too little information on the topic of interest: interpersonal processes within RGs. Hence, four cases were analyzed in the current paper.

Data Collection

Data were collected between November 2017 and December 2019. Data collection for each case started when the RG was set up. Data was collected through four means. First, a narrative interview was conducted with the patient at the start of data collection based on a global topic list (34) (see **Supplementary Material**). Second, the RG meetings were observed and audio-recorded. Third, between the meetings, repeated in-depth interviews were conducted with the patients about their daily life, perceptions of their goals and aspirations, relations with the social environment, and experiences with the RG. Later in the process, the initial interpretations of the data were discussed with the patients during these interviews. Fourth, by the end of data collection, all the RG members (patients, significant others, and professionals) were interviewed about their experiences with the RG. Throughout the study period, a personal connection was established between the researcher and patient via telephone calls and messages.

The interviews with the patients were interactive and guided by neutral, open questions. Participants were encouraged to discuss topics that they considered relevant. Hereby, these interviews were aimed to co-construct understanding of the meaning and unfolding of the RG (35–38). The interviews took place at the patient's home or another preferred location. There was no time limit, and the duration ranged from 20 min to 2 h. The interviews with RG members were somewhat more structured. The topics of those interviews were pre-determined by a topic list (see **Supplementary Material**), which was constructed by the first and second author based on the emerging themes and categories. Most interviews and RG meetings were recorded and transcribed verbatim. One participant ("Martin") was difficult to reach, and most contact was informal and by phone. These contacts were not recorded and transcribed; instead, the researcher wrote field notes about the topics that were discussed.

Short field notes were written after every contact, interview, or RG meeting to describe the initial associations of the researcher. Cases were followed until within-case saturation occurred (i.e., the moment when new data collection no longer seemed to bring up major new developments in that particular case (39). Within-case saturation was defined based on the general research question of the larger qualitative study exploring multiple perspectives on the RG method for people with SMI, based on grounded theory. Consistent with the grounded theory approach of saturation categories (40), data collection continued until nothing new was being heard and all areas that seemed to warrant further investigation had been pursued. Hence when the first author observed that new data tend to be redundant of data already collected, and did not lead to new themes regarding the understanding of the role RG for that case, this was discussed with the second author in a meeting. When both agreed, the case was considered to be saturated. The time period to reach saturation ranged from 6 months to 2 years. For one of the cases ("Martin"), we had to stop data collection earlier, as he no longer answered his phone or called back. The first and second author were in constant dialogue during data collection to explore developments and discuss their interpretations. In the current paper, a total of 36 interviews (with patients, significant others, and mental health professionals) and 18 observations of RG meetings are analyzed. See **Table 1** for an overview of the collected data for each participant.

Data Analysis

For the larger study (31), the first and second author had coded all transcripts and field notes together in an ongoing dialogue and had written memos of their discussions, so both were familiar with the data. For the present study, the first author reread the transcripts, field notes, and memos of the coding associated with a particular case several times, searching for excerpts that raised curiosity or questions related to the aim of the study. Puzzling parts of the data material could function as significant events and uncover possible plots (41, 42). After identifying the possibly significant events for each case, the first author constructed initial narratives for each case and thoroughly discussed them with the second author. Then, the first and second author read parts of the transcripts and the field notes again to search for possible explanations for the raised questions and for other parts of the data material that seemed connected to important developments. These data were used to reconstruct the narrative. The analysis followed the principles of the hermeneutic circle (30), which involves an interpretation process in which the research continuously goes back and forth between pieces of a text and the preliminary understanding of the whole narrative. This procedure continued until a satisfactory, coherent interpretation was achieved. This interpretation led to a deeper level of understanding of the experiences and interactions of all involved (43).

Ethical Considerations

The Medical Ethical Committee of VU Medical Centre granted approval for the study (IDS: 2017.316). Written informed consent for publication and usage of anonymized quotes was obtained from all patients and informal RG members before data collection. We changed names and details to maintain participants' confidentiality.

TABLE 1 | Overview of the collected data[b], sorted per participant.

Participant	Narrative interview	In between interviews			RG meeting	Evaluative interview	Interviews RG members informal				Interviews RG members formal				Total
		Visits	Phone	Total			Mother	Brother	Friend	Total	CM[a]	PS[a]	SW[a]	Total	
John	1	4		4	7	1	1	1		2	1			1	16
Martin	1	2	2	4	1					0	3			3	9
Leon	1	4		4	6	1	1		2	3	1	1		2	17
Raoul		3		3	4	1	1	1		2	1		1	2	12
Total	3			15	18	3				7				8	54

[a] *CM, case manager; PS, peer support worker; SW, social work.*

[b] *As we lost contact with one of the participants during the data collection (Martin) we could not conduct the final interview, nor ask his RG members (n = 4) to participate. Also, one formal RG member (peer-worker John) did not respond to our request to interview them despite several attempts. Lastly, one of the participants (Raoul) had invited his mother and case-manager to the narrative interview, and therefore we couldn't follow the topic-guide. We added this interview to the "in-between" interviews.*

Reflexivity

The study is part of the PhD thesis of the first author, CT. Next to her work as a researcher, CT is a psychologist in an urban area with people facing diverse problems, both with regard to severity as well as nature. For her PhD, CT briefly followed the developments of 58 RG's throughout the country, although with an utterly different intensity compared to the four men of the present study. In addition, she was involved with the supervision of the mental health professionals implementing the method, including those involved with the four men. JB, the second author, is an experienced qualitative researcher with a focus on investigating and understanding service user's lived experiences with psychological suffering as well as the process of recovery. Before the start of the study, CT and JB took time to truly get to know each other and to share their personal stories to be able to promote each other's' reflexivity.

RESULTS

In the following section, we share the remarkably different stories of four men and their RGs: John, Leon, Martin, and Raoul. We narratively describe how their RGs developed over time and how the interpersonal relations evolved, both from their perspectives and from the perspectives of their significant others and professionals. The stories are not merely characterized by successes or smooth transitions toward meaningful collaboration and empowerment. They also reflect the struggles, the ups and downs, and the tensions that arise during a recovery journey. Above all, the stories provide insight into the unique and different ways in which the RG method takes shape in the lives of the four men. Each story ends with a short reflection by the researchers on the emerging interpersonal processes within that RG.

Case 1: John—Agency vs. Dependency

At the start of data collection, John has just moved from the clinic—where he stayed after two severe psychotic episodes—to live with his brother. He sets up his RG with a peer worker and nominates his brother, mother, case manager, and social worker to be part of it. From the beginning, John is very involved in the RG method. He explains that he expects it to help him regain control and an active life now that he is out of the clinic. He enthusiastically appoints himself as chairman of the RG meetings, and he puts a lot of effort into making his RG plan and agenda. Together with living in a new city and being out of the clinic, he sees the beginning of the RG as a promising new start and aims to make some profound changes in life.

> *RG meeting.* John: "It gives me a lot of space to think about stuff and to write things down myself. And I also think that the goal of the RG is to make sure that I get certain things done in my life, and that it can serve as a big stick when I postpone things or not keep my promises. That would be very nice. Because I have stood still for a few years and have not been doing anything at all and then it is obviously not going well."

In the first few months of data collection, it becomes clear how deep John desires to get back to living a "normal life." He feels challenged by the fast-moving world around him, in which everyone seems to be able to participate and to build a meaningful existence. His RG plan illustrates what a normal life would look like to him. It is filled with long-term, ambitious plans, varying from traveling the world to having a full-time paid job. He struggles to connect this with his current situation.

> *Interview John.* John: "I have a lot of trouble to accept that I am being treated. Well.… Wait, I [said] it wrong. I have accepted it but I have a bit of trouble that I don't function fully as I used to."

The RG increasingly becomes an audience to communicate his struggles. The researchers' field notes describe that John has a tendency to think thoroughly about everything, and that expressing himself in the RG meetings allows him to gain an overview of all the plans in his head and bring them closer to the world around him. In an in-between interview, John describes the RG meetings as a "platform" where he can share his thoughts and where he feels in control about decisions in his life. Although this is a positive experience for him, he clearly expresses that he is uncomfortable with actually asking for help from his family. During the meetings, he rejects their help and sometimes gets irritated when they try to advise him.

> *RG meeting*. Peer worker: "And what can others in the group do about this?" John: "Well, I also said that I prefer to do as much as possible myself, that is really, really important to me. [. . .]." Mother: "But don't you think it would be easier when your brother asks you, you know, 'have you thought about this or that'. So that you keep your promises." John: "no it will work out. . . . *sighs deeply. Mother wants to start a sentence but John interrupts her, talking fast* [. . .]. I will keep my promises, I just have to be a bit more adequate. Faster, better understanding. I get it, I know how it goes. It will be alright."

After about 6 months of data collection, John starts to drink again and is taking his medication irregularly, leading to several incidents. The nature of the RG meetings changes somewhat, and they evolve into a place where these incidents can be openly discussed. Not only the RG members but also John acknowledge the urgency of the situation, which paves the way for joint agreements. His mother and brother explain in interviews that the RG meetings provided an opportunity to make clear agreements on what to do in the case of an incident, and they appreciated the ability to quickly contact mental health professionals, especially because John has a tendency to downplay incidents. Importantly, the mutual trust is not violated, because John remains part of the conversation and gives his permission to discuss these difficult topics.

> *RG meeting.* Mother: "So we have agreed that we can have a conversation with [case manager] about you, both your brother and I, if a crisis situation arises [. . .]." John: "Yeah, that is when, if you have a signal. So when [brother] or you have that idea, and then you think that things are not going well again, then you immediately get in contact. And I'm just going to make sure it goes well."

> *Interview brother.* Brother: "It gives him confidence, I think, that one doesn't talk *about* him, but *with* him. Because if you don't do that, you'll get problems. Because in the past too much has been decided behind his back, and that made him very suspicious."

In the period that follows, John starts to take classes and volunteers. He achieves more structure in his daily life, which he appreciates. Despite this, John doesn't follow up on the agreements made in previous RG meetings, and several incidents happen. Thus, the relationship between John and his family remains dominated by tension. Toward the end of data collection, the researcher's field notes state that although the RG has become a place for John to feel connected with the world around him, no actual *joint* recovery process arises. John still seems to interpret the help or involvement of others in his recovery journey as an infringement on his freedom and undermining of his agency. Most importantly, it conflicts with his idea of leading the "normal," independent life that he desires. Both the mental health professionals and his family members look at it differently. In their final interviews, they claim that John's conception of agency is actually hindering his recovery, and that he has to learn to accept help from others to turn his ideas into actions suitable for his daily life. However, the RG meetings were not used to jointly reflect upon these differences in perception. According to the case manager, she was hesitant to facilitate a critical, open dialogue because there was a risk that John would be placed in a vulnerable position in relation to his family.

> *Interview case manager.* Researcher: "Do you feel that he is more in control over his treatment?" *Silence.* Case manager: "No, I don't really think so. I think in his experience he is, also because he is the chairman and during that meeting he is really in that role. But I don't think he is more in control at this moment [in life]. In the sense that I, the mental health care professional, always have to get him to: what you are going to do now, what do you have to do, make sure that you pay attention to that, et cetera [. . .]." Researcher: "So even though that—according to his words—the group gives him control, helps him to make decisions; that is not in line with the reality, with how it really goes?" Case manager: "Well, I'm afraid not. I think it is good that he has that feeling, but what is the value of it if I, and my colleagues, are still pretty tightly in charge of his functioning?"

Reflection

For John, the setting of the RG—in which he served as chairman and his significant others were there for him in the meetings—was encouraging, as from the very beginning it allowed him to experience agency and responsibility. The RG became a place in which John could feel socially connected with the world around him while being the one in charge. However, his own ideas about what he was able to do himself and what he needed others for did not quite match the perceptions of the people around him. John was very focused on not being a patient, and he could hardly tolerate talking about his vulnerabilities or accepting any help. In the interactions with his RG, the other members felt forced to emphasize the problems and risks in his life. As a result, John wanted even more to prove that he could be in charge and did not need others. By the end of the study, John's final goal remained doing everything independently, as he still perceived that as the ultimate form of agency. The RG members went along with this to prevent friction, although they believed that it was not in line with the current situation. Thereby, John and his RG were engaged in a vicious circle and seemed to be stuck in their roles. The difference in perceptions was not directly addressed in the RG meetings, and no openness or reflection emerged in communications. Thus, the RG as a whole was not encouraged to create a story that they all wanted to pursue, and the other members only partially believed in John and his efforts. John's experience of agency remained limited to the RG meeting and did not expand to his treatment, social relations or broader life.

Case 2: Leon—Urged to Reshape Toward Reciprocity

Since early adolescence, Leon has been in contact with mental health care professionals. At the start of data collection, he has been in and out of different clinics for about 3 years, and he is looking for a way to find meaning in his daily life. He explains that his main struggle is regulating his emotions. In the past, he has experienced several blackouts with self-harming behaviors and overdosing on medication and drugs. During the first interview, Leon describes how insecure he feels about himself:

> *Interview Leon.* Leon: "I still find it difficult to receive compliments or to hear positive things about myself. It is easier to identify myself with failure. I basically set the bar always too high for myself, so that I fail and it is confirmed that I am not worth it. [...] That is one of the greatest core beliefs of my life. Like, I'm not worth it, I'm not worth anything."

Leon is very motivated to work on himself and puts a lot of effort into fulfilling what is expected from him regarding the setup of the RG. In addition to his case manager, he nominates his partner, his mother, two friends, his music therapist, a peer worker on his FACT team, and a social worker from supported housing. Before and during the first RG meeting, Leon looks stressed. In the subsequent interview, he explains that he felt great pressure for it to be a good meeting. He found it difficult to believe that these people want to be there for him because they like him and care about him; instead, he feels like they are judging him:

> *Interview Leon.* Researcher: "How do you feel when you're the chairman at the meeting?" Leon: "Very embarrassed. Embarrassed, a bit anxious. You know, have I prepared myself well enough, that kind of things just stick in my head all the time. It's just, yes, like if you take an exam, that feeling a little bit."

The somewhat tense undertone of the first meeting persists in the following meetings. According to the researcher's field notes, although Leon easily shares his vulnerabilities and struggles, he does not talk about what he is truly thinking or feeling. He tends to inform the people around him after a difficult period but isolates himself in the moment, hesitant to ask for help because he fears putting strain on them. The members of his own network take a "wait and see" approach because—as they explain later—they don't really know what their role is and they are cautious to avoid stressing Leon even more. The professionals unintentionally reinforce this by mainly directing the conversation toward Leon and not so much toward his significant others. Thus, rather than serving as a strengthening, supportive atmosphere, the RG meetings emphasize Leon's vulnerable side and his role as the patient, and it is mostly the professionals and Leon making an effort to change the situation.

> *Interview with friend.* Friend: "[...] the group was not being asked anything at all, like what do you want to do or what do you think we should do or something. Often, Leon was talking most of the time, and then the professionals said things, we will arrange a house for you, we will do medication, et cetera. And then nobody asked me, [other friend], or mother anything."

About halfway through data collection, several important events take place that change the way the RG takes shape. After being his main source of support for many years, Leon's partner breaks up with him. In reaction, Leon is overwhelmed and feels severely depressed, not seeing any meaning in life. He experiences a blackout in which he overdoses and has to spend several nights on the intensive care. In the aftermath of this incident, frustration and difficulties arise regarding the communication between different parties (family, friends, and professionals). In the RG meeting that follows, an RG member—one of Leon's friends—asks for a joint evaluation. The RG then openly talks about the lessons learned, who can do what in case of an emerging incident, and how to improve communication in critical moments. This seems to be a first step toward the informal RG members' involvement as active and equal partners. A few weeks later, Leon again feels severely bad. The professionals actively stimulate him to get in touch with one of his friends and share how he feels in order to prevent another incident. When Leon does so, it becomes a positive and important experience for both Leon and his friend:

> *RG meeting.* Friend: "I am glad that you contacted me during that period you felt so bad, and that you really told me what was going on inside you. Not only, well yes, I am feeling bad, but also why and what it did to you. It made me feel like I could better be there for you."

From this experience, as he later comments in an interview, Leon learns that letting other people know what he truly feels and asking for help at difficult times is not a sign of weakness or dependence, but can be strengthening and rewarding, both for him and the other person. The atmosphere and content in the following RG meetings changes. The conversation is no longer solely directed toward Leon and his challenges; the RG members start to use the meetings as a platform to openly explore how *everyone* feels, reflect on the influence of their own behaviors, and discuss their thoughts and doubts. The open and reflective atmosphere that arises seems to function as a mirror for Leon, helping him to learn to express himself and his emotions. This allows him to start searching for his own voice, and gradually, he realizes that he is capable of being in charge of his own decisions:

> *RG meeting.* Mother: "Yes, now you really choose [...]." Leon: "[...] my own social contacts [...]" Mother: "[...] things yourself. Just as well as deciding to grow your beard." Leon *smiling shyly*: "Yes, that is indeed one of those choices." Mother: "Yes. Your own choice." *Silence.* Leon: "Little by little making my own choices. I definitely feel like I'm slowly growing in that [...]." Case manager: "Yes, absolutely."

At the time of the final interview, the researcher's field notes indicate that the RG has undergone a transformation process; the roles of the RG members have changed, and their mutual relationships have been gradually reshaped. In addition, Leon's use of language when speaking about his RG changes. While he first tended to use proto-professional phrases, such as "utilizing my support system" and "significant others," he seems to have left those terms behind at the time of the final interview and replaced them with phrases such as "asking a friend to go for a beer and talk" when he is having a difficult time.

Reflection

An important development within this case was the break-up of Leon and his partner. When Leon could no longer rely on her, he was forced to find new ways to take care of himself. This new situation caused existing patterns and current relationships to come into question and be reshaped. Hence, the interaction pattern within the RG, in which Leon felt vulnerable and judged and his significant others were reserved and hesitant in order to spare his feelings, changed. The RG members slowly transformed from passive listeners into active participants. They started to reflect on themselves and the process, and they shared their needs, frustrations, and emotions. This stimulated Leon to also express himself. Thereby, the RG became reciprocal instead of unilateral in its functioning. Also, Leon started to believe that he was worth the attention of his RG and therefore could experience the RG as a source of support. He gradually moved beyond the role of patient and was able to take more charge in making decisions. As a result of these parallel and intertwined developments, the RG process became a joint effort and led to increased equality within mutual relationships. The case is a clear example of the fact that difficulties and tensions are unavoidable parts of a recovery journey, and jointly overcoming them may be key to moving in a fruitful direction.

Case 3: Martin—Distance and Closeness

At the start of the first interview, Martin proudly shows a large grid drawn on the wall that represents the number of days he is clean from drugs. He is happy to finally be at a point in life where he could manage to take this step. However, being clean takes enormous strength, and he describes feeling constantly confused and tired. During the interview, Martin openly speaks about himself and the severe events that occurred in his young childhood. The past 10 years of his life have mainly revolved around his substance abuse and the associated lifestyle. He states that although he has been through a lot with his family, they are really close to him and he is grateful for their support. At the same time, he feels pressured by them, and he hopes the RG meetings will help him to be better understood. In addition to his case manager, he nominated his mother, stepfather, brother, sister-in-law, and coach from his volunteer work to be part of the RG.

> *Interview Martin.* Researcher: "What do you hope [to achieve with the RG]?" Martin: "Well, uhm.... My parents and my brother have said a few months ago, yes, we now accept you the way you are, and if you relapse, well okay, you know. But now my mother tried to say the other day, why don't you try to work a bit more. And then I really said, mom, you shouldn't do that. You just have to let me do it my way, because if you are going to say that, then I immediately get more cravings, and the feeling that I am not accepted anymore. So I said, please, just let me do it at my own pace."

The search for recognition and acceptance of his fight against addiction is a very important theme for Martin. In the preparation for the first RG meeting, he decides—with the help of his case-manager—to write a letter in which he reintroduces himself to his family and asks for some distance from them in order to recover. During the first RG meeting, he reads the letter out loud:

> *RG meeting.* Martin: "Well here I am, and that is someone with an addiction and the associated lifestyle, that I am trying to get out of. That's a little bit how or who I am now. How it feels. My goal is to build a normal rhythm of life again, to be clean. To enjoy things again and to pick up my hobby again. [...] At the moment I have mixed feelings, because despite the good feedback from everyone, I still feel that more is expected from me than is feasible at this moment, for example if I hold off the contact with you guys, from everything. But to stay clean requires so much energy, to alter the cravings to something else. [...] From the inside, I feel really messed up at the moment, and that just demands all my energy now. So I need a bit of distance to be able to hang on."

The letter and the way that Martin reads it impresses the family. They appreciate that he is honest, and they tell him that they understand his request for space. The RG jointly and respectfully talks about what everyone needs in this new situation. Later on in the meeting, when Martin shares his goals and wishes for the near future, the RG responds by expressing their positive beliefs and expectations. Martin afterwards comments that, despite the positive tone, their hopes and expectations made him feel pressured:

> *Field notes.* "It had hurt him that his father had said that he actually wanted him to be like his little brother: work, girlfriend, house. He found that painful to hear, and he seemed to be annoyed about it too."

In the period following the first RG meeting, the researcher and Martin have several informal contacts in which it is revealed that Martin is struggling to find the right balance between closeness and distance in both contacts with his family and the case manager:

> *Field notes.* "Right after the RG meeting his brother stopped contacting him. Although this was what he had asked for, it made Martin feel upset, as he felt abandoned and not being part of the family. One month later, when the two brothers had talked about this and his brother had invited Martin a couple of times to come over, Martin felt pressured and unseen in how he feels because his brother was expecting too much."

2 months after the RG meeting, it is revealed that Martin has used again and that he manipulated his mother to get money and his stepfather does not know about this. Martin expresses to the researcher that he feels deeply disappointed in himself. In the same period, several interpersonal tensions between members of his RG manifest: his stepfather threatens to reveal secrets about his mother to Martin and his brother, his sister-in-law and stepfather have a dispute and refuse to talk with each other, and the family is annoyed by the mental health professionals. Martin cancels the subsequent RG meeting. He explains that although he would like to continue in the long term, the idea of an RG meeting now causes him too much stress due to all the tensions. The last time the researcher gets in contact with Martin, he considers continuing the RG with a different composition because he wants to gain some distance from his family and focus on the future.

After a few months and several attempts, the researcher is no longer able to get in touch with Martin, and to respect this, she does not interview his family. About a year later, she hears from his case manager that Martin is setting up a new RG meeting with the same members.

Reflection

The RG meeting took a first step toward overcoming the existing interactional difficulties and working to (re)build mutual trust. However, both Martin and his family were entangled in a pattern of seeking distance and closeness. Therefore, Martin alternated between feeling pressured and abandoned. This complicated the establishment of satisfying interactions in which Martin's need to be truly seen and accepted could be acknowledged. When his family sought closeness and said they wanted the best for him, Martin felt as if he is only worth something when he is absent. This interpretation of conditional love and attention made him feel pressured to behave in a certain way. Drugs—and later distance—became a way to take back control and avoid being left and hurt. The interactional patterns of Martin and the other RG members seemed to be entangled with drug use, which made it difficult to jointly work toward recovery. In addition, it became clear that there are many unspoken tensions and complexities within the family, which interfered with the establishment of a well-functioning RG. Distance seemed to be accepted when there is conflict or disagreement, which reinforced Martin's (destructive) behavioral pattern. Thus, existing interactional difficulties stood in the way of establishing an open and honest alliance within the RG.

Case 4: Raoul—The Struggle of Opening Up

When data collection begins, Raoul lives in a sheltered housing. He has a history of severe substance abuse and psychotic episodes, and he now wishes to be more independent from mental health care. In the first interview, he states that a psycho-education course 2 years ago taught him that the voices he had been hearing for about 20 years are actually his own. However, distinguishing them from reality takes a lot of his energy, and he is not able to do some kinds of work or daily activities. Raoul has nominated his mother, brother, and social worker to be part of the RG. He is enthusiastic and plays an active role in the setup of his RG. He borrows the case manager's book about the RG method, appoints himself the chairman of the RG meetings, and wants to take the lead in the in-depth preparatory conversations with the invited RG members. Nevertheless, Raoul indicates that he is not looking forward to the RG meeting because he does not like to be the center of the attention:

> *Interview Raoul.* Raoul: "One hour [...] That sounds so long to me, how are we going to fill one hour? [...] and then I feel like, what do I have to say right now, why is it about me. Why do people find that important? So, it is difficult for me to express myself about myself." [...] Researcher: "So talking about yourself for an hour is difficult." Raoul: I find it really troublesome, yes. I'm pretty much dreading it."

At the start of the first RG meeting, Raoul asks the RG members to read the report of the in-depth preparatory conversation with his mother, explaining that everyone knowing about his past is a good start. From the report, it is clear that his mother has gone through a lot with Raoul. The past 10 years have been tough for her because she had to watch her son slip away while ceaselessly trying to save him. Despite the considerable improvement in their relationship since then, his mother repeatedly intervenes in the meeting with implicit references to the past. The researcher's field notes describe her clear need to be heard and persistent urge to share her struggles and fears with the professionals. Several times, she expresses that it is hard to have confidence in the future and support Raoul's wish to be more independent.

> *RG meeting.* Mother: "He says that he wants to live independently, well then I just flinch, I take three steps back and... that is just a bitter pill to swallow. And I heartily wish it for him, but as he is now, I just really, really not see it happening."

In response to the first RG meeting, the case manager encourages Raoul's mother to join a family psycho-educational program on psychosis and schizophrenia. At this program, she learns what her son's illness actually entails and how she can better relate to it. This changes the dynamics of the second meeting, and it stimulates her to reflect on the influence of her own behavior on Raoul's functioning:

> *RG meeting.* Mother: "I wanted to push him, you know, 'go for a walk, go for a nice run'. Well, you should definitely not do that. Because people who are schizophrenic seem to be really, really, really tired. Completely exhausted. So, at lesson 2 I already knew I shouldn't do that." *Laughs.*

Despite the changed dynamics between Raoul and his mother, the second meeting has a tense atmosphere. In the period between the first and second meeting, Raoul had told the researcher that he is occasionally using drugs again. The mental health professionals know, but Raoul is terrified that his family will find out and demands that it will not be a topic during the RG meeting. The professionals respect his wish, although they struggle with the situation. In the period after the second meeting, they repeatedly confront him, expressing their own discomfort to address the subject of honesty and openness. Looking back at this period in an interview, Raoul says that although it was stressful at the time, the RG setting served as an incentive for self-reflection and confrontation of the situation. He decides to quit using drugs so that he will no longer have to lie to his family.

> *Interview Raoul.* Raoul: "The RG has definitely accelerated that; that I have come to my conclusions, this is untenable, this cannot continue, it will go wrong somewhere. And also that I became aware of it; I just lied to her [mother], and that's really not okay. I couldn't pretend any more that I wasn't."

This realization is a first step toward being honest and open with his family. After about 1 year of data collection, a similar event takes place. In consultation with the psychiatrist, Raoul decides to quit taking medication and involves his family in this decision. The RG meeting becomes a very honest conversation in which Raoul and his family open up and share their worries and fears with each other. After the meeting, Raoul tells the researcher that his family needs to feel that they are part of his decisions and that considering the perspectives and well-being of others gives him more gratification in the long term than making decisions by himself. In addition, he noticed that openness allows other people to come close, and that this had substantially improved his relations with both his family and the mental health professionals:

> *Interview case manager.* Case manager: "[At first] he was absolutely inscrutable; I really had no idea what was going on inside him. And look at him now; yes, really it is a huge difference."

In her interview, Raoul's mother explains that the increased openness is very important because it gives her confidence that she will not be left out again. Toward the end of data collection, Raoul, his mother, and his brother all state that the RG meetings have evolved into a place where they can be vulnerable, honest, and open with each other. Importantly, the topics of the RG meetings are no longer solely directed toward Raoul and his goals; they include the mutual relationships between Raoul and his family as well as the latter's vulnerabilities, fears, and behavior. Thus, their relationships become reciprocal, and the openness extends beyond Raoul's goals to cover broad aspects of daily life:

> *Interview Raoul.* Raoul: "The last two times were just very open conversations, everything could come to the table and that gave me peace of mind and also my mother, I know that for sure. Apparently, we usually don't talk with each other so openly, and now the setting makes us ready to do just that. Yes, I found that a lot more pleasant."

> *Interview brother.* Brother: "I think the RG offers a stage to continue that [being vulnerable], as there is safety for everyone. And that the vulnerability does not only apply to Raoul, but also to us, as family. [...] Yes, that certainly connects. Absolutely. That is, of course, what it is all about in a relationship: that you are honest with each other and that you share what is going on inside. That has been disturbed for a long time, and that it is now slowly repairing again; yes, that is really very valuable."

Reflection

This story is characterized by increased openness in the communication between Raoul, his family, and the professionals. At the start, there was a pattern in which, based on past events, Raoul's family closely watched him and therefore exerted control out of fear. Raoul interpreted this as a lack of trust, which led him to keep things to himself. This, in turn, enhanced his family's fear. The RG meetings evolved into a place where this pattern was exposed and could be adjusted. The members all developed more self-reflective and vulnerable attitudes, and they gained an understanding of each other's past experiences. Raoul learned that being open to his family made them less suspicious, and he increasingly allowed them to be part of his decisions. This, in turn, increased his family's confidence and gave them the space to see him as a person with dreams and wishes instead of a patient they had to keep a close eye on. The mental health professionals contributed to this by not openly judging Raoul for withholding information from his family and instead repeatedly questioning the consequences and stimulating him to open up. Although it was a struggle for all members of the RG, these developments helped them jointly work toward opening up to each other and (re)building mutual trust. Remarkably, Raoul and his family indicated that they do not have these kinds of conversations in between the RG meetings; the fact that they are scheduled provided an opportunity to build equal, normalized relationships in which Raoul's illness was *not* the central topic. Hence, the RG meetings were a place where they could discuss the past and let issues go in daily life.

DISCUSSION

The RG method intends to promote patients' agency and self-management and organize collaborative partnerships between patients and their informal and formal support system. The present paper aimed to enhance the understanding of the interpersonal dynamics that arise within an RG as well as their influence on the recovery journey of the individual suffering from SMI. To this end, we narratively reconstructed the stories of four men—Leon, John, Martin, and Raoul—setting up RGs. Based on our analysis, below we explore the relations and interpretations of the unfolding processes within the four RGs, and we discuss possible implications for practice.

Within the RG method, patients are encouraged to be the director of their group and to take responsibility and ownership regarding their path to recovery (11–13). In the four stories, however, most of the RG members had long histories of dependence, risk prevention, and non-reciprocity with each other, and these existing interaction patterns—which varied in rigidness—interfered with the idea of agency of the patient. Thus, being the director of the group cannot be imposed; instead, a movement in the existing interactional patterns is needed to enable ownership and responsibility to emerge. The four stories illustrate how such interactional movements go hand in hand with struggles and interpersonal tensions.

For Leon and Raoul, being the director of their group led to pressure, fear of letting others down, and struggles with being fully open and vulnerable during the RG meetings. Leon tended to place himself below his significant others and thus take on the position of patient. For Raoul, his RG had trouble seeing him as a person with wishes and dreams instead of a patient on which they had to keep a close eye. For both, the process of moving beyond the role of patient and finding new balance in their relationships proved to be essential for establishing RGs that facilitate their empowerment. Importantly, this process required a shift in roles and restructuring of all RG members' perceptions of the relationships. In both stories, the RG meetings served as platforms for interpersonal patterns to be exposed and readjusted.

In the stories of John and Martin, no such shift in existing patterns was observed. John did not redefine his perception of agency and persisted in striving toward independence without help. The other RG members acted to protect him in order to reduce risks. Both John and his RG responded based on old patterns, and the RG meetings did not expose or help adjust them. The lack of change in interpersonal dynamics impeded John's recovery journey, as there was no room for him to take responsibility for both his strengths and weaknesses. Martin's RG process was too short to establish an actual group process. Martin and his family used distance and closeness to regulate their own feelings and regain control over the other. This interfered with the development of mutual trust and joint work toward recovery. Perhaps the expertise of an educated system or family therapist would have been helpful to explore the family's frustration with the mental health professional and increase their understanding of existing frictions and tensions. In this way, the first steps could have been taken toward cooperative partnerships, which could have served as a foundation for further work within the RG.

The analyses suggest that the degree to which the RG method contributes to recovery is strongly determined by the degree to which the existing roles of the patient and his/her RG members are changed. It is essential to break old, rigid patterns that are characterized by inequality and dependence. Jointly searching for a new balance in relationships is a vital process for establishing an RG that facilitates the patient's empowerment. Non-reciprocity can make individuals feel lonely, guilty, weak, incapable, indebted, and inferior, and such relationships, even when they provide much help, can be harmful to psychiatric clients in various ways (44). The stories of Leon, John, Martin, and Raoul show that breaking through old patterns is challenging. In addition, achieving social support within the involved relationships requires a delicate balance, as such support implies that a person is dependent on others, which tends to distance the helper from the person being helped (17, 44, 45). To change the mutual perceptions of relationships, it is essential to investigate the underlying emotions, fears, and attitudes of patients, their significant others, and the involved mental health professionals. An open and reflective atmosphere during the RG meetings stimulates members to explore and question their own roles, so working toward recovery goals becomes a shared and honest process.

The importance of openness and reflection for adjusting existing roles and patterns raises the question of how such an atmosphere within an RG arises or be facilitated. We saw that it can arise in response to an external event, such as the break-up between Leon and his partner, and that it can be stimulated by mental health professionals. When the professionals broadened their focus from Leon to the dialogue between Leon and the other RG members, the members started to reflect on themselves and the situation, and they became more direct and open toward each other and Leon. Similarly, when the professionals gave space to the concerns and fears of Raoul's mother, Raoul became more aware of the consequences of his behavior on his family, and the communication between them became more open and honest. Thus, it is important that all RG members are invited to play an active role and to consider what they truly need to believe in the goals and participate in achieving them.

By recognizing the importance of including the social context in understanding, analyzing, and responding to mental health difficulties and recovery (17, 45, 46), the RG method is best be viewed as a person- and network-oriented approach. Indeed, our findings are in line with identified working mechanisms of meaningful and sustained inclusion of the social network. These have been found to be characterized by collaboration principles, which promote deep listening to the lived experience of families; a commitment to work in equal partnership with service users and family members; an openness to acknowledge, articulate and address power relations; and a commitment to change service delivery cultures (47–50). Above all, such approaches firmly recognize that no one exists in isolation. In contrast, most people's lives are defined by their networks and relationships, and problems and solutions are socially constructed through shared language and understandings (51).

An influential example of such approach is Open Dialogue (OD) (52, 53). The approach aspires to create a space where decision making is transparent and service users are able to find new words for their experiences. Studies of OD can be helpful in further developing and shaping the RG method. Mechanisms of change in OD have been identified (54, 55) and seven key elements were outlined in fidelity criteria (56). These elements can be understood as related to both the organization of services and a way of being with people, the latter including the elements of tolerating uncertainty and dialogism (57). Future studies should investigate their similarities, differences and lessons to learn to establish the social and contextual nature of recovery in treatment and care for people with SMI.

Clinical Implications

Mental health professionals' role is to monitor the processes within the RG by inviting RG members to share their thoughts and feelings; stimulating openness about frictions or differences in point of view; acknowledging and investigating the positions and needs of patients' significant others; and provoking curiosity of each RG member about themselves, the situation, and the group process. This stimulates members to re-think their roles, needs, and behaviors (17, 50). The stories of Leon and Raoul show that this not only facilitates openness but also increases mutual understanding. If individuals feel that they are understood by someone, they will be inclined to learn from them (58). Hereby, the RG serves as a "we," and as a collaborative learning community in which new knowledge and meaning arise from mutually influencing processes (57, 59). The functioning of the social network as a whole and the ability of the involved members to respond in different ways are important when working toward the patient's recovery goals.

By making space for all RG members to be heard, the RG itself and the RG meetings could evolve into a *holding environment*, a safe setting that enables individuals to explore new methods of interaction and communication (60). The holding environment can serve as a safe place in which people in recovery and their significant others feel that they can take risks, consider each other's perspectives, and explore their true feelings (61). The professional is part of this holding environment and thus is an equal partner in the process, as opposed to an expert that brings knowledge (62–65).

Cultivating such attitude and taking on a monitoring role within the RG involves a subtle but significant shift in the dynamics between mental health professionals and patients and their significant others and is reshaped to "doing *with*, rather than doing to and doing for" (66). Developing appropriate skills is not restricted to a certain professional background but training and supervision is recommended [see (8, 14, 31)].

Methodological Considerations and Limitations

First, the uniqueness of the recovery journeys of the participants and the small sample size limits the generalizability of our findings to a wide population of people with SMI. The findings of this study are rooted in time, place, and person and future studies should investigate the role of specific characteristics, such as illness acuity, ability of self-reflection, and different phases of illness on group dynamics for further application of the RG method. Above all, the paper is meant to stimulate reflection and thinking about the different ways the RG method takes shape in clinical practice. Hereby, we hope that our analysis encourages mental health professionals to embrace the uniqueness of each individual RG and adapt to the personal needs of its involved members.

Second, hermeneutical analysis is based on the idea that data cannot be regarded as purely isolated information units that can be observed separately by other researchers. Rather than trying to eliminate the effects of the researcher, researchers should try to understand and exploit them (67). Therefore, continuous reflexivity regarding our impact on the data, analysis, and interpretations was important throughout all phases of the study. To that end, the first and second author were in continuous dialogue with each other to ensure they remained open and curious about the participants' unique situations. During data collection, they critically questioned each other to gain an understanding of the origin of certain beliefs and interpretations that could affect the course of the interviews. During data analysis, the first and second author jointly reviewed all transcripts and field notes, made memos of their discussions, and eventually achieved intersubjective agreement on their interpretations. It is thus important to take into account, when reading the paper and interpreting the analysis, that their personal and professional experience and knowledge inspired and informed the analysis and interpretations (68).

Third, the confidential relationships between the first author and the participants (both patients and significant others) were important in the interpretation process. The first author followed the four stories for a longer period of time and attended all RG meetings. Participants shared deeply personal information and vulnerabilities throughout the process, which indicates that they saw the researcher as a trusted partner. Initially derived meanings and hypotheses regarding the participant's recovery process and the interpersonal dynamics within the RG were discussed with the participants to jointly interpret the data. This was one of the main strengths of the study as the research became an equal and joint exploration and investigation. At the same time, the attention and sincere interest for the participants and the repeated visits might have had a therapeutic influence that may have been tangled with the method. In addition, the researchers repeatedly asked to evaluate and reflect on the RG method and its influence on the recovery journey, which may have led to an attributed importance of the method for the participants, that would otherwise not have been experienced or interpreted that way.

CONCLUSIONS

Taken together, by reconstructing the four stories, we aimed to gain insight into the different ways the RG method takes shape in the four men's lives. The stories showed that the RG method should not be considered an intervention for organizing informal support for the "designated" patient, but as a platform for changing the functioning and dynamics of the social network as a whole. For a well-functioning RG, it seems essential to break through old patterns of inequality and dependence and work toward openness and reciprocity in interpersonal dynamics. The four cases showed that it takes time, patience, and small steps back and forth to jointly overcome the struggles and fears related to finding new ways of relating to each other. An honest and reflective atmosphere in which all participants are encouraged to participate and be curious about themselves and each other is essential for changes in interpersonal dynamics to emerge. Such changes pave the way for individuals with SMI to find their own voices and pursue their unique recovery journeys.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available upon request to the corresponding author.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Medical Ethical Committee VU Medical Centre. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

CT and JB were responsible for data collection, performed the interviews and analysis, and wrote the first draft of the paper. CM and HK were involved in the several rounds of analyses and provided comments on drafts of the paper. All authors contributed to the study design and concept development.

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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.2021.632437/full#supplementary-material

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Personal Recovery in People With a Psychotic Disorder: A Systematic Review and Meta-Analysis of Associated Factors

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Background: Personal recovery (PR) is a subjective, multidimensional concept, and quantitative research using PR as an outcome is rapidly increasing. This systematic review is intended to support the design of interventions that contribute to PR in psychotic disorders, by providing an overview of associated factors and their weighted importance to PR: clinical factors, social factors, and socio-demographic characteristics are included, and factors related to the concept of PR (organized into CHIME dimensions).

Methods: A systematic literature search was conducted from inception to March 2020. Quantitative studies that had used a validated questionnaire assessing the concept of PR were included. Mean effect sizes for the relationship between PR-scale total scores and related factors were calculated using meta-analyses. Sources of heterogeneity were examined using meta-regression tests.

Results: Forty-six studies, that used (a total of) eight PR measures, showed that in clinical factors, affective symptoms had a medium negative association with PR-scale total scores ($r = -0.44$, 95%CI -0.50 to -0.37), while positive, negative and general symptoms had small negative correlations. No association was found with neuro-cognition. Social factors (support, work and housing, and functioning) showed small positive correlations. Gender and age differences had barely been researched. Large associations were found for PR-scale total scores with the CHIME dimensions hope ($r = 0.56$, 95%CI 0.48–0.63), meaning in life ($r = 0.48$, 95%CI 0.38–0.58) and empowerment ($r = 0.53$, 95%CI 0.42–0.63); while medium associations were found with connectedness ($r = 0.34$, 95%CI 0.43–0.65) and identity ($r = 0.43$, 95%CI 0.35–0.50). Levels of heterogeneity were high, sources included: the variety of PR measures, variations in sample characteristics, publication bias, variations in outcome measures, and cultural differences.

Discussion: Most interventions in mental healthcare aim to reduce symptoms and improve functioning. With regard to stimulating PR, these interventions may benefit from also focusing on enhancing hope, empowerment, and meaning in life. The strength of these findings is limited by the challenges of comparing separate CHIME dimensions with questionnaires assessing the concept of PR, and by the high levels of heterogeneity observed. Future research should focus on the interaction between elements of PR and clinical and social factors over time.

Keywords: subjective recovery, person-oriented recovery, meta-analysis, psychosis, schizophrenia, personal recovery

INTRODUCTION

Personal recovery (PR) is described as a highly individual process, whose definition is the subject of a debate that comprises a large and ever-growing body of literature. Several reviews have described PR in psychosis as either an idiosyncratic and non-linear process containing key elements (1–3), or as both process and outcome (4), or a multi-dimensional concept whose focus depends on individuals' experiences (5). Although consensus on the definition has not yet been reached (6), a widely endorsed theoretical basis for clinical and research purposes is offered by the conceptual framework of CHIME, the acronym for Connectedness, Hope, Identity, Meaning in life, and Empowerment (7).

When PR is considered an outcome, several validated questionnaires—such as such as the Recovery Assessment Scale (RAS) (8), the Questionnaire about the Processes of Recovery (QPR) (9), and the Mental Health Recovery Measure (MHRM)—can be used to measure PR (10). However, there is no gold standard (11), and a broad and multidimensional construct of PR can sometimes lead to ambiguous interpretations (12).

Quantitative research using PR as an outcome measure is nonetheless growing rapidly, and recently a call was made for more research into the ways in which interventions in specific groups may contribute to PR (6). A previous review indicated that PR improved over time when people are involved in recovery-oriented mental health treatment, especially when professionals collaborate with peer providers (13). Another recent review aimed to investigate the relationship between clinical and personal recovery, by performing a meta-analysis of the association between PR and (positive, negative, and affective) symptoms and functioning. Their findings suggested that clinical and personal recovery are only weakly associated, and that both need their own attention in treatment and outcome monitoring of people with psychotic disorders (14). The aim of the current study was to offer an overview of all factors associated with PR including social factors and demographics. Such an overview would add value to the development of interventions for improving PR in psychotic disorders, by giving direction to which elements to focus on.

The objective was therefore to systematically review and investigate the strength of the relationship between PR and associated factors in people with psychotic disorders. In our original study protocol we set out to look for associated factors in all quantitative studies assessing PR: interventions studies; cross-sectional studies; and longitudinal studies. However, when searching the literature, we came across two observations: firstly, only a very limited number of intervention studies were available that used PR as an outcome measure, and in these studies, no associations between PR-scale total scores and associated factors were described; and secondly, a large proportion of studies researched the association between PR-scale total scores and elements of PR itself (such as stigma and hope). In order to provide a complete reflection of the current state of literature, we decided to also include these factors related to the concept of PR. The CHIME dimensions were chosen as a way to organize these factors.

METHODS

Literature Search

After pre-publishing the study protocol in the PROSPERO database (CRD42019121727), we conducted a literature search in Embase, PsychINFO, MEDLINE, Web of Science, Cochrane Central, and Google Scholar. To describe PR with a broad array of keywords, we used the following search terms: (subjective-, OR patient based-, OR consumer based-, OR person oriented-, OR personal recovery) in combination with the CHIME dimensions (connectedness, OR hope, OR identity, OR meaning, OR empowerment) in psychosis (psychosis, OR schizo-affective, OR schizophrenia) using a validated questionnaire of personal recovery (questionnaire, OR assessment, OR scale, OR instrument, OR inventory, OR psychometric). The review process was based on PRISMA guidelines.

Relevant articles were selected on the basis of the following inclusion criteria: peer-reviewed studies available in English, full-text, from inception to March 2020; DSM or ICD classifications of schizophrenia and other psychotic disorders (including affective psychotic disorders); both cross-sectional and longitudinal studies that used a validated questionnaire assessing the concept of PR and reported cross-sectional associations. Articles were excluded if they met the following exclusion criteria: severe mental illness (SMI) samples in which <65% of the study population had a psychotic disorder; use of item scores or subscale scores of personal recovery questionnaires, rather than total scores or validated short forms; pilot studies, feasibility

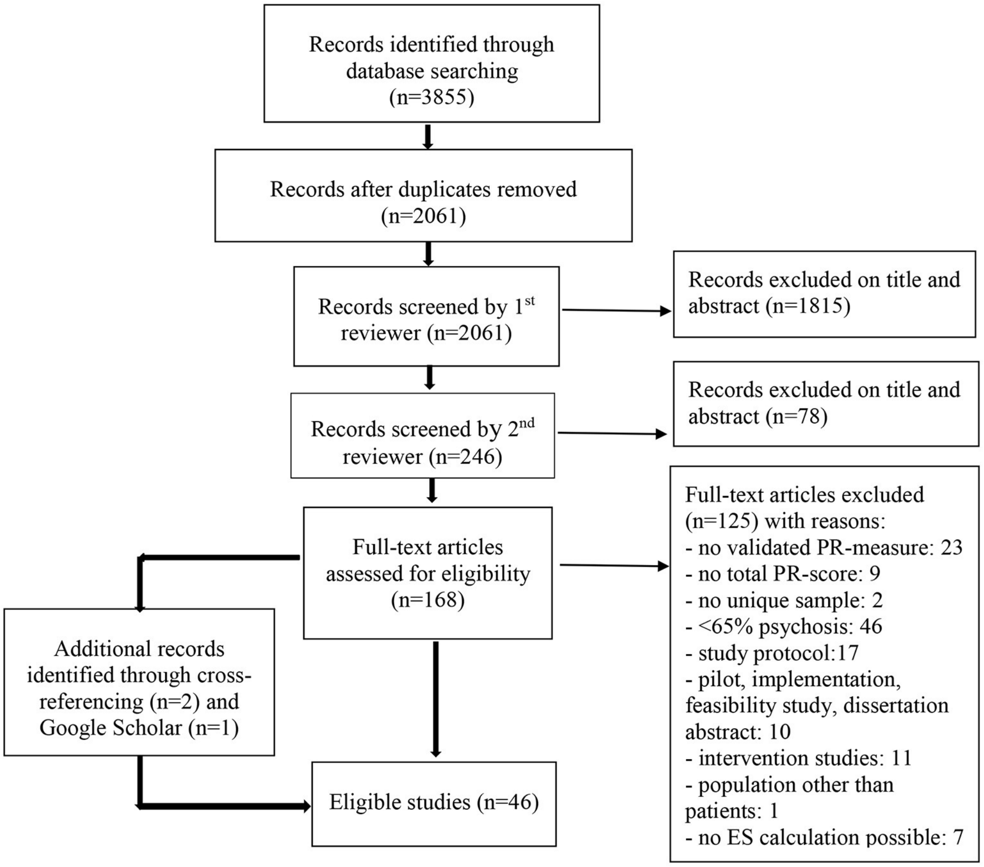

FIGURE 1 | PRISMA flow diagram of studies including factors associated to personal recovery in psychosis (17).

studies, or implementation studies; and studies that performed secondary analyses on a sample that had already been included.

Retrieved publications were de-duplicated using EndNote X9 reference-management software. To identify studies that might meet our inclusion criteria, titles and/or abstracts were screened by the first rater (PL). Titles that were deemed relevant were screened independently by two members of the review team (PL and AR). Any disagreement on eligibility was resolved through discussion with a third author (DB). The full text of the remaining articles was screened (by PL) for factors associated with PR.

Data Extraction

Data were extracted from the included studies. They included sample characteristics (sample size, percentage with a psychotic disorder); study characteristics (country, study design); the personal recovery measure used; all factors related to PR, including the measures used; and the corresponding effect sizes. Extracted factors were organized into four categories that were further subdivided into domains: (1) factors related to the concept of personal recovery (CHIME dimensions); (2) clinical factors (affective, positive, negative, and general symptoms; neuro-cognition); (3) social factors (support; work and housing; psychosocial functioning); (4) and factors not included in the meta-analysis due to the small number of studies: longitudinal findings, socio-demographic and other patient characteristics. For an overview of domains and corresponding factors, see the **Supplementary Table 1**.

To assess the strength of the cross-sectional relationship between factors and PR-scale total scores, we extracted correlation coefficients or corrected Beta-coefficients at baseline or T1 from the text or tables of included studies (15). A mean effect size was calculated for each domain. To ensure that each study contributed only one correlation per domain to the analysis, results per domain were averaged. For example, as stigma and self-esteem were both gathered under the CHIME dimension "identity," they were averaged to obtain one overall correlation for PR-scale total score and identity. To ensure that all correlations within one factor-domain were interpreted in the same direction, coefficients were reversed where necessary. Following Cohen's convention, coefficients of 0.10, 0.30, and 0.50 were interpreted to demarcate small, medium, and large effects, respectively.

Statistical Analyses

Metaforpackage in "R" was used to calculate mean effect-sizes per domain on the basis of random effects models using inverse-variance weighted Fisher's Z. Forest plots as visual summaries of the meta-analyses were inspected. Q-tests were conducted to test for evidence of heterogeneity, with I^2 statistics as a method to quantify the level of heterogeneity. The source of heterogeneity was examined using meta-regression analyses, the predictors being PR measure and sample characteristics (100% psychotic disorder or less). To test for publication bias, Egger tests were used to detect funnel-plot asymmetry, but only if there were enough studies to perform this test. Sensitivity analyses were conducted to explore the effects of study quality.

Study Quality

Study quality was independently assessed by two raters (PL and AW) using the NIH-Quality assessment tool for observational and cross-sectional studies (16). This tool covers fourteen study characteristics and was designed to focus on the key concepts for evaluating the internal validity of a study, including topics such as study objectives, sample selection, and adequate reporting. To facilitate sensitivity analysis—i.e., the exclusion of low-quality papers—the methodological quality of each study was rated as poor, fair or good. Statistical heterogeneity was reduced after excluding studies rated as poor; this mainly involved validation studies or studies in which personal recovery was not the primary outcome variable. However, point estimates and confidence intervals were not much affected by the exclusion (details of meta-analysis, sensitivity analysis, and tests of heterogeneity are available on request from the first author). To test for publication bias, Egger's method was used to detect funnel-plot asymmetry, but only if there were enough studies to perform this test. If statistically significant, the trim-and-fill method was used to explore the effect of publication bias.

RESULTS

Study Characteristics

Of the 2,061 papers found, 1,893 were excluded on the basis of abstract and title. The full text of the remaining 168 articles was assessed for eligibility, leading to the exclusion of 125 articles (reasons are shown in **Figure 1**). Google Scholar was consulted and reference lists of included studies were hand searched to check for missing studies, which resulted in three additional articles. This resulted in 46 studies that were eligible for inclusion in the review. Study characteristics are described in **Table 1**.

Personal Recovery

In total, eight PR measures were used: Recovery Assessment Scale (RAS) ($n = 18$ studies) (8); Questionnaire about the Process of Recovery (QPR) ($n = 15$) (9); Mental Health Recovery Measure (MHRM) ($n = 6$) (10); Recovery Style Questionnaire (RSQ) ($n = 5$) (62); Maryland Assessment of Recovery (MARS) ($n = 3$) (63); Recovery Attitudes Questionnaire (RAQ-7) ($n = 1$) (64); Stages of Recovery Scale (SRS) ($n = 1$) (65); and Stages of Recovery Instrument (STORI) ($n = 1$) (66). One study used both the MHRM and RAS.

CHIME Dimensions

Large positive associations with PR-scale total scores were found for hope ($r = 0.56$, 95% CI = 0.48–0.63, $p < 0.001$); meaning in life ($r = 0.48$, 95% CI = 0.38–0.58, $p < 0.001$); and empowerment ($r = 0.53$, 95% CI = 0.42–0.63, $p < 0.001$). Medium positive associations with PR were found for connectedness ($r = 0.34$, 95% CI = 0.26–0.42, $p < 0.001$); and identity ($r = 0.43$, 95% CI = 0.35–0.50, $p < 0.001$). Inspection of the forest plots and Q-tests for all domains suggested heterogeneity between studies. I^2 tests indicated high levels of heterogeneity for all CHIME dimensions, which ranged from 73.9 to 93.5% (see **Table 2A**). Meta-regression tests indicated differences caused by the use of the RAS as measure of PR in all the analyses of CHIME dimensions, although most differences were small and did not reach significance. One exception was the association between PR and empowerment, where RAS significantly increased the positive association (0.34, 95%CI = 0.19–0.48, $p < 0.001$). Due to the small number of studies, however, these results should be interpreted with caution. Heterogeneity can also be attributed to sample characteristics. Meta-regression indicated that studies using samples with 100% psychotic disorders (rather than SMI with >65% psychotic disorders) reduced the association between PR and meaning in life (−0.38, 95%CI = −0.76 to −0.00, $p = 0.05$); PR and empowerment (−0.24, 95% CI = −0.65–0.17, $p = 0.25$); and PR and connectedness (−0.14, 95%CI = −0.34–0.05, $p = 0.16$). One exception was the increased association between PR and identity (0.21, 95%CI = −0.14–0.55, $p = 0.24$). None of these results reached significance. In addition, results for connectedness and empowerment were based on a small number of studies. In the studies investigating the association between PR-scale total scores and hope, the regression test for funnel-plot asymmetry indicated publication bias ($z = 3.970$, $p < 0.001$). For the results of the meta-analyses and tests of heterogeneity, see **Table 2A**. For forest plots, see the **Supplementary Table 2**.

Clinical Factors

A medium negative association with PR-scale total scores was found for affective symptoms ($r = -0.44$, 95% CI = −0.50 to −0.38, $p < 0.001$). Small negative associations with PR-scale total scores were found for positive symptoms ($r = -0.22$, 95% CI = −0.28 to −0.15, $p < 0.001$); negative symptoms ($r = -0.22$, 95% CI = −0.28 to −0.16, $p < 0.001$); and general symptoms ($r = -0.26$, 95% CI = −0.37 to −0.15, $p < 0.001$). I^2 scores ranged from 65.5 to 90.0%, indicating that the proportion of the total variance explained by heterogeneity was moderate to high. There was an indication of publication bias in the association between PR-scale total scores and positive symptoms ($z = -2.27$, $p = 0.023$). The trim-and-fill method showed a relatively small reduction (0.3) of the correlation estimate. Meta-regression analysis indicated that the use of the QPR increased the negative association between PR-scale total scores and all symptom domains (affective, positive, negative, and general symptoms). No association with PR-scale total scores was found for neuro-cognition ($r = 0.05$, 95%CI = −0.12 to 0.22, $p = 0.536$). Although only a moderate degree of heterogeneity between studies on PR and neuro-cognition was found ($I^2 = 72\%$), examination of the forest plot showed that there were outliers in both directions. For the results of the meta-analyses and tests of heterogeneity, see **Table 2B**. For forest plots, see **Supplementary Table 2**.

TABLE 1 | Study characteristics of included studies ($n = 46$) in meta-analysis about associated factors with personal recovery in psychosis.

References	N (% psychotic disorders)	Study design	Country	Personal recovery instrument	Associated factors—instruments
Andresen et al. (10)	110 (100%)	Cross-sectional	Australia	RAS, MHRM	GAF, HoNOS, LSP, K10
Armstrong et al. (18)	795 (100%)	Cross-sectional	US	MHRM	LQoLI, CSQ-8, BPRS, MIRECC-GAF
Beck et al. (19)	122 (100%)	Cross-sectional	UK	QPR	HADS, BHS, SERS
Bhullar et al. (20)	65 (100%)	Longitudinal	UK, Canada	MARS	LCS
Boggian et al. (21)	216 (100%)	Cross-sectional	Italy	RAS	SESM, RSE, MANSA, HoNOS
Browne et al. (22)	404 (100%)	Longitudinal	USA	MHRM	QLS, SPWB
Brunet-Gouet et al. (23)	34 (100%)	Cross-sectional	France	STORI	V-MSEQ
Chan et al. (24)	181 (100%)	Longitudinal	China	RAS	SAPS, SANS, SOFAS, UPSA, MHC-SF
Chien and Chan (25)	300 (100%)	Cross-sectional	China	QPR	SQLS, SLOF, PSES
DeTore et al. (26)	404 (100%)	Cross-sectional	USA	MHRM	SCID-1, TLEQ
Erim et al. (27)	100 (100%)	Cross-sectional	Turkey	RAS	y/n question employment status
Espinosa et al. (28)	50 (100%)	Cross-sectional	Spain	RSQ	ISMI, BDI, BAI
Giusti et al. (29)	76 (100%)	Cross-sectional	Italy	RAS	BPRS, PANSS, PSP, RAVLT, Raven CPM, TMT, Weigl CFST, BCIS, IS
Gruber et al. (30)	138 (100%)	Cross-sectional	Germany	RSQ	WHOQOL-BREF, ISMI, SE, KK, ES
Guler and Gurkan (31)	180 (65%)	Cross-sectional	Turkey	RAS	PWS
Hasson-Ohayon et al. (32)	80 (100%)	Cross-sectional	Israel	RAS	SCC, ISMI, LRI
Hasson-Ohayon et al. (33)	107 (>80%)	Cross-sectional	Israel	RAS	ISMI, IS, SCC, RFQ, ADHS
Hicks et al. (34)	61 (100%)	Longitudinal	Australia	RAS	WAI-S, ADHS
Ho et al. (35)	204 (100%)	Cross-sectional	China	RAQ-7	HCCQ, MOSS-C-EIS, WHOQOL-BREF, WHOQOL-SRPBS, MSPSS-C, ASHS, ESCA, ISMI, RS, MS, SQLS, MDES
Jahn et al. (36)	169 (100%)	Cross-sectional	USA	MARS	BSI, PANSS (positive, negative)
Jorgensen et al. (37)	101 (100%)	Longitudinal	Denmark	RAS	PANSS
Kukla et al. (38)	113 (100%)	Cross-sectional	USA	RAS	PAM, PANSS, MS^1, ASHS, IMR-S
Lavin and Ryan (39)	63 (67%)	Cross-sectional	Ireland	RAS	PWS, ASHS
Law et al. (40)	335 (100%)	Cross-sectional	UK	QPR	PANSS, Psyrats, BHS, SERS, CDSS, PSP
Lim et al. (41)	66 (100%)	Cross-sectional	Signapore	QPR	HHI, ISMI, ES, PANSS, CDSS, PSP, WHOQOL-BREF, RSWB
Mathew et al. (42)	80 (100%)	Cross-sectional	India	RAS	PANSS, SUBI, GAF
McLeod et al. (43)	89 (100%)	Cross-sectional	Australia	QPR	SEPRS, ISMI, involuntary treatment (y/n), contact recovered peers (high/low)
Morrison et al. (44)	122 (100%)	Cross-sectional	UK	QPR	HADS, SERS, IS, PANSS, MLCS, BACS
Mueser et al. (45)	399 (100%)	Cross-sectional	USA	MHRM	SS
O'Keeffe et al. (46)	171 (100%)	Longitudinal	Ireland	RAS	CD-RISC
Roe et al. (47)	159 (100%)	Cross-sectional	Israel	RAS	BPRS, GAF, MSPSS, S-SELAS, Mansa
Rossi et al. (48)	903 (100%)	Cross-sectional	Italy	RSQ	PANSS, PSP
Song (49)	592 (74.7%)	Cross-sectional	Taiwan	SRS	RPRS
Stainsby et al. (50)	50 (100%)	Longitudinal	UK	RSQ	IPQ-S, Mansa, LSP
Temesgen et al. (51)	263 (100%)	Cross-sectional	Ethiopia	QPR	PANSS, BHS, SSQ, ISMI, WHODAS, WHOQOL-BREF
Thomas et al. (52)	250 (100%)	Cross-sectional	USA	MARS	SSQ, ROSI, SEES< BSI, SFS
Van der Krieke et al. (53)	581 (100%)	Cross-sectional	Netherlands	RAS	WHOQOL-BREF, PANSS, SFS, CAN, RSQ

(Continued)

TABLE 1 | Continued

References	N (% psychotic disorders)	Study design	Country	Personal recovery instrument	Associated factors—instruments
van Eck et al. (54)	105(76.6%)	Cross-sectional	Netherlands	MHRM	BPRS-E
Vass et al. (55)	80 (100%)	Longitudinal	UK	QPR	KSS, SERS, BHS, PANSS
Vass et al. (56)	59 (100%)	Cross-sectional	UK	QPR	KSS, ISMI, SERS, PANSS
Vogel et al. (12)	52 (100%)	Cross-sectional	Netherlands	MHRM	SSL-12-I
Williams et al. (57)	65 (100%)	Cross-sectional	Canada	RAS	BPRS, SAI, ISMI, BHS
Wood and Irons (58)	52 (100%)	Cross-sectional	UK	QPR	SS, OAS, SCS, PANSS (-positive), CDSS, BAI
Wood et al. (59)	79 (100%)	Cross-sectional	UK	QPR	SIMS-E, SIMS-P, ISS, SERS, BDI, BHS
Wright et al. (60)	62 (100%)	Cross-sectional	USA	QPR	MAI, TMT, BCIS, Metacognition (-appraisal task, detection task), WASI, UPSA, TUS, PANSS (neg, anxiety, depression), SSI-AE
Zizolfi et al. (61)	44 (100%)	Cross-sectional	Italy	RSQ	RS, MoCA, PANSS, LSP, SQLS

ADHS, adult dispositional hope scale; ASHS, adult state hope scale; BACS, brief assessment of cognition in schizophrenia; BAI, beck anxiety inventory; BDI, beck depression inventory; BCIS, beck cognitive insight scale; BHS, beck hopelessness scale; BPRS, brief psychiatric rating scale; BPRS-E, BPRS expanded version; BSI, brief symptom inventory; CAN, camberwell assessment of needs; CD-RISC, Connor–Davidson resilience scale; CDSS, calgary depression scale for schizophrenia; CSQ-8, client satisfaction questionnaire; ES, Rogers empowerment scaleI ESCA, exercise of self care agency; GAF, global assessment of functioning; HADS, hospital anxiety and depression scale; HCCQ, health care climate questionnaire; HHI, herth hope index; HoNOS, health of the nation outcome scales; IMR-S, illness management and recovery scale; IPQ-S, illness perceptions questionnaire for schizophrenia; IS, insight scale; ISS, internalized shame scale; ISMI, internalized stigma of mental illness; K10, Kessler psychological distress scale; KK, krankheitskonzept skala (illness concept scale); KSS, king stigma scale; LCS, life chart schedule; LSP, life skill profile; LQoLI, Lehman quality of life interview; LRI, life regard index; MANSA, Manchester assessment quality of life; MAI, metacognitive assessment interview; MDES, making decision empowerment scale; MHC-SF, mental health continuum-short form; MIRECC-GAF, mental illness research education and clinical centers version of the global assessment of functioning scale; MLCS, multidimensional locus of control scale; MOSS-C-EIS, emotional informational support scale of the medical outcome study social support survey chinese version; MS, mastery scale; MS^1, morisky scale (of medication adherence); MoCA, montreal cognitive assessment; MSPSS, multidimensional scale of perceived social support; MSPSS-C, MSPSS–Chinese version; OAS, other as shamer scale; PAM, patient activation measure; PANSS, positive and negative syndrome scale; PANSS-positive, PANSS positive symptoms subscale; PANSS-negative, PANSS negative symptoms subscale; PANSS-GP, PANSS general psychopathology subscale; PSES, perceived elf-efficacy scale; PSP, personal and social performance scale; Psyrats, psychotic symptom rating scales; PWS, psychological well-being scale; QLS, quality of life scale; Raven CPM, Raven colored progressive matrices; RAVLT, Rey auditory verbal learning test; RFQ, functioning questionnaire; ROSI, recovery oriented system indicator; RS, resilience scale; RSE, Rosenberg self-esteem; RSQ, recovery style questionnaire; RSWB, Ryff scales of well-being; SAI, schedule for assessing insight; SANS, scale for the assessment of negative symptoms; SAPS, scale for the assessment of positive symptoms; SCC, self-concept clarity scale; SCID-1, structured clinical interview for axis I DSM–IV disorders; SEES, self-efficacy scale; SCS, social comparison scale; SE, self-esteem scale by rosenberg; SEPRS, self-efficacy for personal recovery scale; SERS, brief self-esteem rating scale; SESM, empowerment scale; SFS, social functioning scale; SIMS-E, semi-structured interview measure of stigma- experienced stigma subscale; SIMS-P, SIMS- perceived stigma subscale; SLOF, specific level of functioning scale; SSI-AE, Schizotypal symptom inventory - anomalous experiences; SSL-12-I, social support list 12 interactions; SOFAS, social and occupational functioning assessment scale; SPWB, scales of psychological well-being; SQLS, schizophrenia quality of life scale; SS, stigma scale; S-SELAS, social and emotional loneliness scale—short version; SSQ, social support questionnaire; SUBI, subjective well-being inventory; TLEQ, traumatic life events questionnaire; TMT, trail making test; TUS, time use survey; UPSA, University of California, San Diego, Performance-Based Skills Assessment; V-MSEQ, versailles metacognitive strategies evaluation questionnaire; WAI-S, working alliance inventory—short form; WASI, Wechsler abbreviated scale of intelligence; Weigl CFST, Weigl's color form sorting test; WHODAS, world health organization disability assessment schedule; WHOQOL-BREF, world health organization quality of life—BREF version; WHOQOL-SRPBS, WHOQOL spirituality religion and personal belief scale.

Social Factors

Small positive associations were found between PR-scale total scores and support ($r = 0.28$, 95% CI = 0.20–0.36, $p < 0.001$); work and housing ($r = 0.23$, 95% CI = 0.00–0.44, $p = 0.046$); and psychosocial functioning ($r = 0.31$, 95% CI = 0.21–0.41, $p < 0.001$). There was a high degree of heterogeneity between studies in the association between PR-scale total scores and psychosocial functioning ($I^2 = 92.5\%$) that was not attributable to variation in sample characteristics or type of PR measure. In the association between PR-scale total scores and support, the degree of heterogeneity was low ($I^2 = 35.2\%$). The meta-regression test indicated that the positive association was reduced by the use of the QPR. The number of studies investigating the association of PR and work and housing was too small for meaningful interpretation of analyses of heterogeneity. For results of the meta-analyses and tests of heterogeneity, see **Table 2C**. For forestplots, see **Supplementary Table 2**.

Other Factors

Few studies reported on effects of socio-demographic and patient characteristics. Five studies investigated the relationship between age and PR-scale total scores (19, 29, 36, 39, 56), only one of which found a small (negative) association ($r = -0.23$, $p < 0.05$), indicating that older age was related to lower PR (19). One study investigated the relationship between gender and PR-scale total scores (56), and another investigated the relationship between education and PR-scale total scores (36); both found negligible differences. Other studies reported no significant differences in PR-scale total scores for years of illness (29), medication adherence (38), contact with recovered peers (43), or involuntary treatment (43). However, PR-scale total scores were found to be positively associated with physical health ($r = 0.30$, $p < 0.001$) (35). A negative association was found for PR-scale total scores with a diagnosis of comorbid PTSD ($r = -0.13$, $p = 0.01$) (26). PR-scale total scores were also found to be negatively associated with type of diagnosis (schizophrenia or bipolar disorder) ($r =$

TABLE 2A | Meta-analysis results and tests of heterogeneity for CHIME dimensions.

CHIME dimensions	K	Mean ES	95%CI	Homogeneity (Q, df)	I^2
Connectedness	7	0.34	0.26–0.42	$Q(df = 6) = 26.5846, p = 0.0002$	73,9%
Hope	12	0.56	0.48–0.63	$Q(df = 11) = 47.6065, p < 0.0001$	77.1%
Identity	25	0.43	0.35–0.50	$Q(df = 24) = 189.3599, p < 0.0001$	85.7%
Meaning	17	0.48	0.38–0.58	$Q(df = 16) = 192.1816\ p < 0.0001$	93.5%
Empowerment	60	0.53	0.42–0.63	$Q(df = 5) = 21.5806, p = 0.0006$	74.2%

K, number of studies in de analysis; Mean ES, pooled effect size of the individual studies; Q-test, test for homogeneity, significant Q-tests indicate heterogeneity; I^2*, quantification of heterogeneity, 25% indicating low heterogeneity, 50% moderate, and 75% high heterogeneity.*

TABLE 2B | Meta-analysis results and tests of heterogeneity for clinical factors.

Clinical factors	K	Mean ES	95%CI	Homogeneity (Q, df)	I^2
Affective symptoms	13	−0.44	−0.50 to −0.37	$Q(df = 12) = 32.964, p = 0.0010$	65.5%
Positive symptoms	19	−0.22	−0.28 to −0.15	$Q(df = 18) = 61.598, p < 0.0001$	75.3%
Negative symptoms	18	−0.22	−0.28 to −0.16	$Q(df = 17) = 63.386, p < 0.0001$	70.2%
General symptoms	15	−0.26	−0.37 to −0.15	$Q(df = 14) = 124.783, p < 0.0001$	90.0%
Neurocognition	7	−0.05	−0.12 to 0.22	$Q(df = 6) = 18747, p < 0.0046$	72.1%

−0.41, $p < 0.01$), indicating that having a non-affective psychotic disorder is related to lower PR-scale total scores as compared to an affective psychotic disorder (56).

Few studies reported on longitudinal findings. Three studies investigated the relationship between duration of untreated psychosis (DUP) or untreated illness (DUI) and PR-scale total scores over follow-up periods ranging from over 2 years, to 10 or 20 years (20, 22, 46). Overall, results were inconclusive although some negative associations were reported. In one study a non-affective psychotic disorder was found to be related to lower PR-total scores over 20 years as compared to an affective psychotic disorder, while lifetime substance abuse was not related (56). Another study reported on the associations of PANSS-subscales and PR-scale total scores at baseline and after 3, 6, and 12 months (37): no statistically significant correlations were found for the Cognitive scale, whereas only the Emotional Discomfort Component showed medium to strong negative correlation coefficients at all four time points. No associations were found between PR-scale total scores and illness perception or quality of life over 2 years (50). Some other studies reported on positive correlation coefficients over a 6 month period for well-being (24), working alliance (34), and perceived stigma (55).

DISCUSSION

The aim of this systematic review and meta-analysis is to provide an overview of factors associated with PR-scale total scores in people with a psychotic disorder. In our original study protocol we planned to include intervention studies, however the literature search revealed that the few available intervention studies did not report cross-sectional associations with PR. Furthermore, we found that a large proportion of studies researched the association between PR-scale total scores and elements of PR itself. We decided to include these as well, and to organize them into CHIME dimensions. Unsurprisingly, considering the overlap, the associations between PR-scale total scores and the CHIME dimensions were medium to large. This overlap is confirmed by the fact that some studies investigated PR-scale total scores in relation to CHIME dimensions in order to assess the convergent validity of a PR measure (21, 25, 30, 31, 40, 41, 49).

Large positive associations with PR-scale total scores were found for meaning in life, empowerment and hope, whereas medium associations were found for identity and connectedness. This is in line with qualitative studies, which indicated that PR from the point of view of people with psychotic disorders can be defined in terms of faith, hope, agency and spirituality (3).

As determinants of PR-scale total scores, only affective symptoms appeared to have a medium negative association. All other factors showed either small negative associations (positive, negative, and general symptoms), or small positive associations (support, work and housing, and psychosocial functioning). No association was found with neuro-cognition, and the relatively small number of studies that investigated sociodemographic characteristics found no uniform effect for age.

However, interpretation of these associations was impeded by heterogeneity between studies in almost all domains. This heterogeneity had several sources, one being the variety of PR measures. As PR is a highly subjective concept, variation in PR measures is inevitable. We found that the QPR was linked more strongly to the symptom domains, while the RAS was linked more strongly to the CHIME dimensions. The RAS is known to have a particular emphasis on hope and self-determination (8); this may offer one explanation for the fact that its use reinforces the positive association between CHIME dimensions and PR-scale total scores. Another explanation for the high levels of heterogeneity may lie in the influence of heterogeneity in the study sample (SMI with >65% psychosis, rather than samples with 100% psychotic disorder). There was also evidence for publication bias in the associations between PR-scale total scores and the domains positive symptoms and hope, although the

TABLE 2C | Meta-analysis results and tests of heterogeneity for social factors.

Social factors	K	Mean ES	95%CI	Homogeneity (Q, df)	I^2
Support	5	0.28	0.22–0.36	$Q(df = 4) = 6.059, p < 0.1948$	35.2%
Work and housing	3	0.23	0.00–0.44	$Q(df = 2) = 11.788, p < 0.0028$	82.4%
Psychosocial functioning	20	0.31	0.21–0.41	$Q(df = 19) = 224.287, p < 0.0001$	92.7%

trim-and-fill method indicated only a small effect of publication bias on the associations.

Variation in the independent variables may also have contributed to the level of heterogeneity. This was illustrated, for example, in the domain of neuro-cognition, which consisted of neuropsychological tests, observer-rated neurocognitive functioning, and self-rated metacognitive functioning. Similarly, in the domain of psychosocial functioning, GAF appeared to be more weakly associated with PR-scale total scores compared to other scales of psychosocial functioning. Previous research suggested that this was due to the fact that GAF comprises both functioning and symptoms (14). Cultural values are also likely to play a role in a subjective construct such as PR (12, 67). Between different countries, for example, large differences have been found in the associations between PR-scale total scores and meaning in life (21, 31, 39, 47).

Limitations

We used the CHIME model (7) in our literature search as a framework for PR. However, there are also other frameworks for PR, such as the SAMHSA statement, which offers 10 recovery components as essential mediators of recovery (68). Although, like CHIME, this aims to enhance recovery in mental health, we chose CHIME because it is widely endorsed (6), and because one of the purposes of the framework is to provide keywords for use in systematic reviewing (7).

The literature search limited to peer-reviewed studies available in English, which may not represent all of the evidence and may have introduced a language bias.

When certain factors were combined, detailed information on individual factors may have been lost. For example, this may have happened when averaging the correlation of stigma, and self-esteem with PR-scale total scores, in order to obtain one effect size per study for the CHIME dimension "identity".

Studies in which <65% of the study population had a psychotic disorder were excluded from the analysis. This percentage was based on expert opinion only, since a clear cut-off point could not be found in guidelines or previous research. To further objectify this decision, sample characteristics (100% psychotic disorder or less) was included as a predictor in the meta-regression analysis, but results indicated no significant differences because of variation in sample characteristics.

Implications for Future Research

This review is consistent with previous research showing that, in psychotic disorders, symptoms and PR are weakly related, with affective symptoms showing medium associations and all other symptom domains showing small associations (14). Social factors and the (partly overlapping) CHIME dimension "connectedness" showed weaker associations with PR-scale total scores than expected. Previous qualitative research indicated that support, social inclusion and recovery-oriented practices (which are known to focus on these themes), are the main facilitators of PR (2, 6). In line with this, recent research on recovery-oriented interventions suggested that PR is mutually beneficial to functional domains (e.g., employment, education, housing) and social domains (e.g., social functioning and support, and community integration), meaning that gains in one domain can contribute to gains in another (69). However, quantitative studies in people with psychotic disorders have paid relatively little attention to the association of PR with these domains. In fact, as the three factors included in the domain of work and housing all concerned employment, we could not examine the independent effect of housing on PR. We therefore suggest that future research should focus on the relationship between PR and a greater number of social factors (e.g., support in employment and housing, and community integration) and between PR and connectedness (e.g., working relationship, social network, and level of perceived support).

Our meta-analysis focused on cross-sectional correlations since few longitudinal studies were included. However, longitudinal findings of PR in SMI were in line with our own findings, suggesting that without an explicit focus on recovery-oriented principles (e.g., personal goals, needs and strengths and a collaborative working relationship), mental health services are unlikely to affect PR (13). Nevertheless, more research is needed into the interaction between elements of PR and clinical and social factors over time. In line with previous research (12–14), we also suggest that future research would benefit from consensus on a PR measure.

Implications for Clinical Practice

A multifactorial approach to improving PR in psychosis appears to be indicated. Many treatments for psychotic disorder patients focus on reducing psychotic symptoms and improving functioning. Previous research underlined the weak associations between elements of clinical recovery (except for affective symptoms) and PR (14). Likewise, our study suggests only weak associations with social factors like support, work, and feeling connected, which were expected to be important domains of PR in psychotic disorder. Only three CHIME dimensions, i.e., meaning in life, empowerment, and hope, showed strong associations with PR-scale total scores, in contrast to the other two dimensions: connectedness and identity. Therefore, we suggest on the basis of the cross-sectional results of our study that if we wish to enhance PR, treatments should focus on affecting the elements of PR itself. PR is a multidimensional construct, and most PR interventions focus on more dimensions. However, meaning in life, empowerment, and hope seem to be the dimensions to focus on. In addition, symptoms and their associated distress should be approached with evidence-based psychological treatment (70, 71), with a particular emphasis on negative affect. Little is known about how these factors might influence each other: for example, having hope may reinforce the effectiveness of treatment in reducing distress associated with symptoms of psychosis, and the reduction of distress associated with symptoms may reinforce having hope for the future.

There are empirically validated interventions for each of these PR elements. Meaning in life for example is supported by narrative-enhanced cognitive therapy (72), and can involve post-traumatic growth (73). With regard to subjective quality of life (SQOL)—a concept pertaining to the CHIME dimension "meaning in life"—previous research also stressed the association with negative affect in people with psychotic disorders, proposing that treatment plans for improving SQOL should focus on feelings of guilt, insecurity or anxiety (74). Meaning in life is also about spirituality. A recent review emphasized the significant role of spirituality in the lives of mental-health service users, and the importance for professionals not only of being aware of spirituality, but also of supporting it (75). Empowerment is an increasing focus for clinician-delivered interventions (76) and peer-delivered support (77); it is also a focus for the movement toward rights-oriented mental-health systems (78). Finally, peer support work is an established and highly researched approach to supporting hope (79, 80). On the basis of their review of longitudinal findings of PR in SMI, Thomas et al. (13) suggested that PR should be promoted by including themes such as self-management skills and self-determination as standard components of mental health services. However, implementing recovery-oriented practices into routine mental health is challenging (6). Implementation is influenced by organizational values and priorities, and culture. One illustration of this is the fact that well-designed interventions such as REFOCUS increase PR only when they are properly implemented (81, 82).

CONCLUSIONS

Overall, in view of the tautological question of comparing PR with PR elements, and also of the high levels of heterogeneity between studies, we speculate with some caution that when one seeks to improve PR in psychosis, an emphasis on enhancing meaning in life, empowerment and hope, in addition to symptom reduction and improvement of functioning, might lead to better outcome. Future research should focus on the interaction between elements of PR and clinical and social factors, e.g., how hope and changes in symptoms due to effective treatment influence each other over time, and more research is needed into the relationship between PR and social factors.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

AUTHOR CONTRIBUTIONS

JL, AR, and DB conducted the literature search. JL and AW extracted data and performed data analyses. All authors contributed to drafting the manuscript, contributed to the conception and design of the study, and approved the final version.

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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.2021.622628/full#supplementary-material

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SYSTEMATIC REVIEW
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Adult Attachment and Personal, Social, and Symptomatic Recovery From Psychosis: Systematic Review and Meta-Analysis

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Despite growing evidence for the role of attachment in psychosis, no quantitative review has yet been published on the relationship in this population between insecure attachment and recovery in a broad sense. We therefore used meta-analytic techniques to systematically appraise studies on the relationship between attachment and symptomatic, social and personal recovery in clients with a psychotic disorder. Using the keywords attachment, psychosis, recovery and related terms, we searched six databases: Embase, Medline Epub (OVID), Psycinfo (OVID), Cochrane Central (trials), Web of Science, and Google Scholar. This yielded 28 studies assessing the associations between adult attachment and recovery outcome in populations with a psychotic disorder. The findings indicated that insecure anxious and avoidant attachment are both associated with less symptomatic recovery (positive and general symptoms), and worse social and personal recovery outcomes in individuals diagnosed with a psychotic disorder. The associations were stronger for social and personal recovery than for symptomatic recovery. Attachment style is a clinically relevant construct in relation to the development and course of psychosis and recovery from it. Greater attention to the relationship between attachment and the broad scope of recovery (symptomatic, social, and personal) will improve our understanding of the illness and efficacy of treatment for this population.

Keywords: attachment, personal recovery, social recovery, symptomatic recovery, first episode of psychosis, schizophrenia

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INTRODUCTION

The process of recovery is a real challenge for people who have a psychotic disorder. Many of them not only have to overcome the symptoms of the disorder, but also have to deal with problems related to social functioning, including housing, work or education, social relationships, stigma, and identity. Despite the various evidence-based therapies for treating it (1, 2), it is still a very heterogeneous disorder, whose prognosis differs greatly between clients (3). If we are to improve our understanding of the illness and to improve treatment efficacy, we need to know why some clients with a psychosis can recover faster, more fully, and with fewer relapses than others.

Psychosis is an epigenetic disorder, whose etiology certainly includes biological factors, and whose known risk factors include interpersonal experiences such as early trauma and neglect (4, 5). Greater recognition of the impact of interpersonal experiences and stress has increased interest in Bowlby's attachment theory, which discusses the impact of early interpersonal relationships on stress regulation and functioning later in life (6, 7). As negative interpersonal experiences may increase a person's vulnerability to psychosis, it is possible that positive interpersonal experiences not only play a protective role in the development of psychotic symptoms, but also contribute to better recovery (8). A secure attachment style is considered to be associated with greater resilience, emotional well-being and mental health, and also with greater emotion regulation, hope, and optimism in life (9). Because recovery and attachment are complex, multidimensional concepts, the role of attachment in recovery from a psychotic disorder is a challenging field of research. It is nonetheless of great clinical importance, as it contributes to a better understanding of the course of the illness and efficacy of treatment of the psychotic disorder (9, 10). As a mediator between attachment and psychosis, mentalization is an aid to developing interventions that focus on helping clients to repair their understanding of their own mental states and those of others (11).

Recovery

Recovery in schizophrenia and Serious Mental Illness (SMI) is a multidimensional concept that has evolved over time (12, 13). Although the main objective of mental health care, for many years, was symptomatic recovery—the reduction of symptoms and the improvement of physical functioning (14)—pressure from consumer-based groups caused attention to shift from a mainly clinical symptomatic perspective toward one that was more personal subjective (12, 15–17). Eventually this led to a conceptual framework for personal recovery in mental health known as the CHIME framework, an acronym representing 5 processes of personal recovery namely: Connectedness, Hope and optimism about the future, Identity, Meaning in life, and Empowerment (18). Personal recovery is a unique individual process in which a client gives meaning to previous events, and takes steps to regain a grip on their life (18).

There is also a third dimension of recovery, one that is both important and widely used. This is the process of social recovery, which includes the following aims: degrading the public stigma of mental illness and to improving not only the position and rights of clients and former clients within society (14), but also their housing, work, education and social relationships (19).

The three recovery dimensions can be viewed as an interactive model in which one dimension may influence the others. Symptomatic recovery is no longer treated as a prerequisite for social or personal recovery (2).

Attachment

Attachment theory is a life span theory, proposing that children develop internal working models of the self and others through early relationships with caregivers. These working models are carried forward into adulthood (7), affecting the development not only of current and future stress regulation, but also of interpersonal functioning and relationships.

Attachment can be approached in two ways: categorical and dimensional. The categorical approach usually defines four main categories of attachment style: (20–23). The first, the secure (or autonomous) attachment style is thought to result from emotionally available and responsive primary caregivers, who allow the infant to explore in their presence, and who are also comfortable with shows of the child's emotional distress. This results in being comfortably with both intimacy and autonomy in adulthood. The second is the anxious attachment style (also referred to as "preoccupied" or "insecure ambivalent"). This is thought to result from a caregiver whose inconsistent availability led the infant to exaggerate emotional expression and minimize exploration of the environment, all in an attempt to maintain the caregiver's attention. In adulthood this is represented by heightened emotional expression and fear of autonomy and separation. The third is the avoidant attachment style (also referred to as "dismissing" or "insecure avoidant"). This is thought to develop from experiences of rejection by caregivers. In adulthood this can result in downplaying emotions and fear of intimacy. The fourth is the disorganized attachment style (also referred to as fearful) and is thought to arise as a response either to disrupted care experiences, such as neglect and early losses, or to frightening caregiver behavior such as physical and sexual abuse in childhood. These experiences lead a child to respond to their caregiver with fear or contradictory behaviors (21, 22). In adulthood, disorganized attachment is represented by contradictive behavior and an inconsistent sense of self. Although the categorical approach is often used in clinical practice, its disadvantage is that, in reality, clients rarely fit neatly into a single category. This problem can be bypassed by the use of two-dimensional instruments that measure the degree of avoidance and anxiety that people experience. Conceptually, the two-dimensional model is the underlying construct for the categorical approach. Clients who have a secure attachment style score low on anxiety and avoidance, those with an anxious attachment style score high on anxiety and low on avoidance, those who have an avoidant attachment style score high on avoidance and low on anxiety, and those with a disorganized attachment style, score high on both dimensions.

Attachment and Recovery Related Outcome

Over the last 15 years, the importance of the different attachment styles in clients with psychosis has attracted more interest in the research field. A meta-analysis of the relationship between attachment and psychosis showed that the prevalence of insecure attachment styles was higher in individuals with psychosis (76%) than in non-clinical samples (38%). Especially the disorganized attachment style was the most prevalent (24). Furthermore, a weak relationship was found between insecure attachment and the severity of positive symptoms (24). Four narrative reviews found attachment insecurity to be associated with the following: poorer outcomes in psychosis, earlier onset of illness, less adaptive recovery styles, poorer quality of life and both a poorer therapeutic alliance and poorer engagement with mental health services (11, 25–27). Individuals with avoidant attachment styles also tended to be hospitalized for longer than those with secure attachment styles (28). With regard to attachment and social recovery in the psychotic population, insecure attachment was found to be associated with poorer social and individual living skills and less appropriate community behavior, and with the severity of interpersonal difficulties (11, 29, 30).

While the literature has discussed the relationships between various recovery outcomes and the concept of attachment in clients with a psychotic disorder, no meta-analysis or systematic review has examined attachment in relation to all the different aspects of recovery. The purpose of this systematic review and meta-analysis was therefore to give an overview of the relationships between adolescent attachment styles and adult attachment styles and symptomatic, social, and personal recovery amongst individuals with a non-affective psychotic disorder.

MATERIALS AND METHODS

Our review protocol was accepted into the Prospero database under registration number CRD42018102529; see https://www.crd.york.ac.uk/PROSPERO/.

Inclusion and Exclusion Criteria

Studies were included in the analyses if (1) participants had been diagnosed with a non-affective psychotic disorder; (2) used a measurement of attachment in adolescents or adults (both defined as being 16 years or older); (3) used a measurement of personal, social or symptomatic recovery; (4) the study design measured a quantitative relationship between attachment and the different dimensions of recovery, except from case reports and systematic reviews; (5) they were in English. Studies were excluded if they solely described qualitative data, if they were single-case studies, conference abstracts, book chapters, reviews, unpublished studies or dissertations; and if they did not assess adolescent attachment or adult attachment in relation to outcomes associated with recovery. To focus specifically on adolescent attachment and/or adult-attachment, we excluded articles on attachment-related concepts such as loneliness, empathy, social cognition, social functioning, theory of mind (TOM), metacognition, mentalization, intimacy, object relations and schemes, parental-bonding or parental attachment, unless these concepts were studied next to or in combination with adult attachment. We also excluded articles that focused on at risk-mental state for psychosis (ARMS), unless this concept was studied in combination with a diagnosed psychotic disorder. Measurements of quality of life (QoL) were also excluded. Although QoL overlaps with the concept of recovery, it is still discussed in the literature as a distinct concept (31, 32).

Search Strategy

To find empirical studies that focused specifically on attachment and recovery in clients who had been diagnosed with a psychotic disorder, we searched the following six databases: Embase, Medline Epub (OVID), Psycinfo (OVID), Cochrane Central (trials), Web of Science, and Google Scholar, using the keywords Attachment, Psychosis, and Recovery and related terms. Duplicate records were removed after the initial search. Hand searches were carried out in relevant journals and reference lists, and search results were cross-referenced with existing reviews (11, 25–27) for any additional studies that may have been missed. Online titles and abstracts were reviewed.

Recovery Outcomes

With regard to symptomatic recovery, we included all outcomes involving a broad spectrum of instruments measuring symptom severity. Per study, we then categorized symptomatic outcomes into positive, negative and general symptoms per study. With regard to social recovery, we included all measurements involving participation in society and everyday life, that is, maintaining social relationships as well as other activities in daily life that are relevant to education, employment, housing and hobbies. And with regard to personal recovery, we used outcome measurements that fitted the CHIME conceptual framework (18), such as measuring hope, self-esteem, self-stigma and satisfaction with life domains.

As our study included mainly cross-sectional data, we did not apply the time criterion for recovery/remission [at least 6 months (33)]. However, the cross-sectional data notwithstanding, we are of the opinion that all participants had gone through a process of illness and recovery in some way. Due to the nature of the process underlying all the data, we therefore believe that the term "recovery" is appropriate.

Measurement of Adolescent and Adult Attachment Style

With regard to measurements of attachment, we chose to include dimensional instruments as well as categorical ones. The two-dimensional model was found to be valid for measuring adult attachment (34). As it is often used as the underlying construct for the categorical approaches and other dimensional multi-item scales, we decided to use these underlying two dimensions where possible. The Revised Adult Attachment Scale (RAAS), for example, has three scales: discomfort depending on others, discomfort with closeness and anxiety about being unloved. The first two scales represent the avoidance dimension, while the third scale fits the anxiety dimension. A factor analysis of all existing self-report measures suggests that the use of multi-item scales with the two underlying dimensions or subscales—"anxiety" and "avoidance"—are valid for investigating adult attachment (35). We included self-reports (9) and assessments by the clinician or researcher (such as the Adult Attachment Interview, the AAI) (36). The AAI has been found to be reliable and valid for measuring adult attachment (37).

Computation of Effect Sizes and Statistical Analyses

Pearson's correlation coefficient (r) was chosen as effect size because most studies reported associations either as correlations or regression coefficients. All correlations or corrected beta coefficients (38) are expressed in terms of a higher score representing a more problematic outcome. For longitudinal or intervention studies we combined baseline coefficients, when reported, with the effects sizes of cross-sectional studies. Where studies reported on multiple measures of type of recovery, we calculated the within-study average effect size to avoid violating the meta-analysis assumption of independence.

Separate meta-analyses were conducted for anxious or avoidant attachment and the distinct dimensions of recovery. For each meta-analysis, the pooled effect size was calculated using inverse-variance-weighted Fisher's Z-values. To evaluate the overall effect size, we used random-effects estimation and calculated 95% confidence intervals. Coefficients of 0.10 were interpreted as small effects, 0.30 as medium effects, and 0.50 as large effects. The Cochrane Q test and the I^2 statistic were used to summarize variability in effect sizes between studies. Publication bias was explored using funnel plots and the Egger regression asymmetry test. Meta-regression analyses were conducted to explore between-study differences related to study population (recurrent psychosis or first-episode psychosis); type of questionnaire (self-report or interviewer rated); and gender.

Study quality was independently assessed by three raters using the NIH Quality assessment tool for observational and

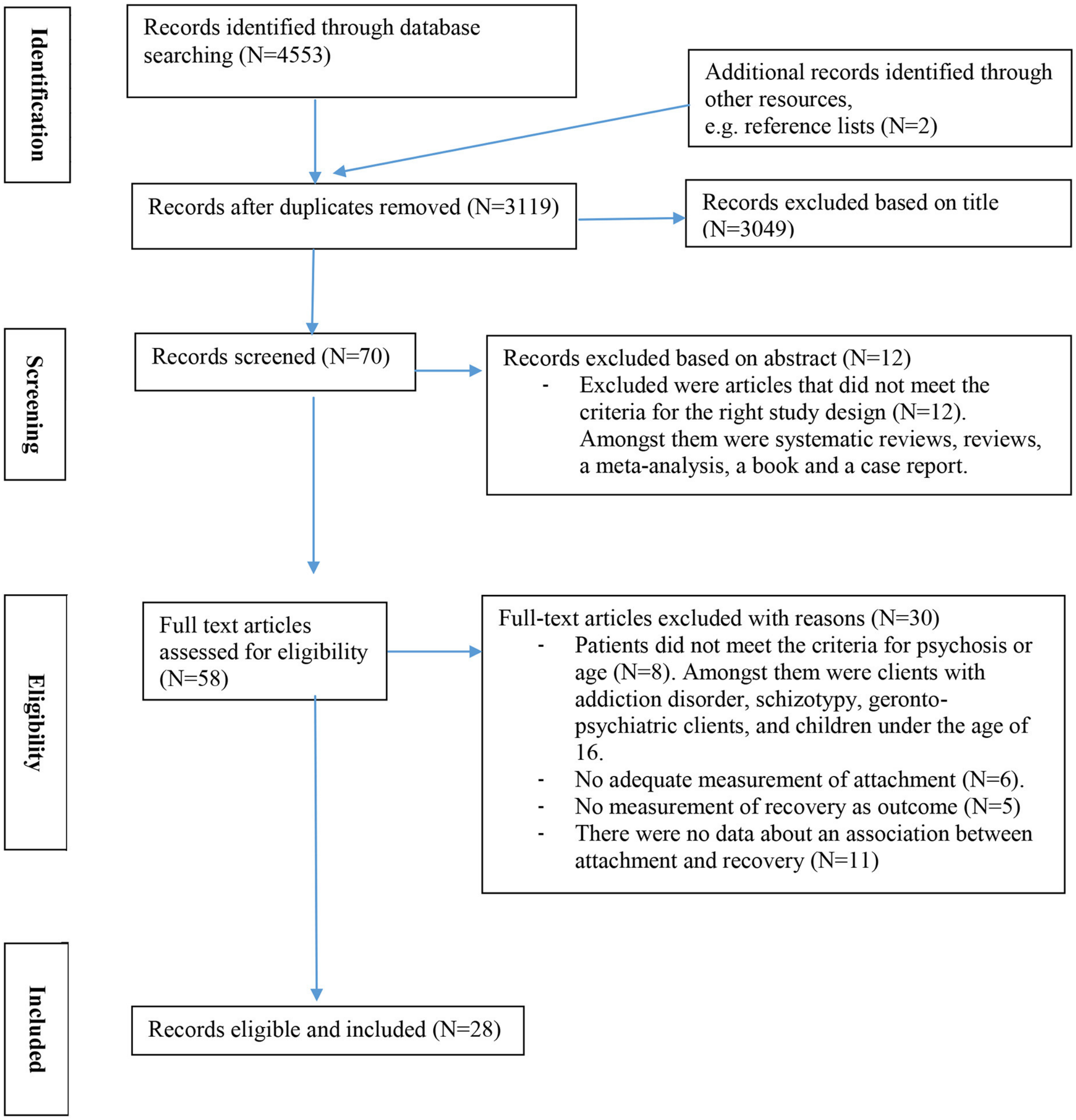

FIGURE 1 | PRISMA flow diagram of systematic search.

cross-sectional studies (39). This tool covers topics such as study objectives, sample selection, and adequate reporting, on the basis of which the methodological quality of each study is rated as poor, fair or good. We found large variations in study quality, as the association in many studies between attachment and recovery was not the primary research question. One study was rated as good, ten studies as fair, and 17 studies as poor. This limited the opportunities for exploring the effect of study quality.

Sensitivity analyses focused on the consequences of excluding studies that did not report correlation coefficients, or reported only the level of statistical significance. We repeated our analysis, in which the correlations reported as statistically non-significant were recorded as zero. Point estimates and confidence intervals were not greatly affected. A conventional alpha level of 0.05 was used for tests of heterogeneity and publication bias. All statistical analyses were performed using the metaphor package (40) in R (41).

Details of meta- and sensitivity analysis and tests of heterogeneity are available on request from the first author.

RESULTS

Literature Search

The search and exclusion process is summarized in the PRISMA flow diagram of the systematic search (**Figure 1**). In the systematic process, the search was performed and the papers were rated independently by the first two authors before inclusion in the final sample.

Study Participants Characteristics

The 28 studies relevant to our research question had been published between 2007 and 2020. Most were cross-sectional ($k = 25$). The participants' diagnoses met the criteria for first-episode psychosis in seven studies and for recurrent psychosis in 21 studies. In total, the studies included 2,598 participants with a psychotic disorder, 380 of whom had been diagnosed with a first episode of psychosis. The reported mean age ranged from 17 to 52.5 years; the participants' composite mean age was 36 years. However, no information on age was available in three studies (42–44). Although two studies included only men (28, 45), and although information on gender was not available in one study (46), 30.2% of overall participants were female.

Eight different measurements of attachment had been used (see **Table 1**), with three studies using narrative measurement (AAI) and 25 studies using self-report measurement. To conceptualize attachment, by far the highest number of studies used the dimensional approach. Most studies ($k = 26$) focused on symptomatic outcomes, but few referred to personal recovery ($k = 4$) or social recovery ($k = 4$). Data from 17 studies could be included in the meta analysis. **Table 2** provides a summary of all the studies included.

Symptomatic Recovery

Positive symptoms had medium associations with the anxious attachment style ($r = 0.24$, 95% CI: 0.16–0.33, $k = 15$) and the avoidant attachment style ($r = 0.20$, 95% CI: 0.14–0.26, $k = 15$) (**Tables 3** and **4**). Although there was some variation in outcome due to high correlations in two first-episode-population (FEP) studies (62, 66), three FEP studies that were not included in the meta-analysis found no association between insecure attachment and positive symptoms (42, 58, 64).

Two other studies, that were not included in the meta-analysis, found positive associations only between attachment avoidance and positive symptoms (61, 70).

For negative symptoms, we found no association with anxious attachment ($r = 0.02$, 95% CI: -0.04 to 0.09, $k = 8$) and only a weak association with the avoidant attachment style ($r = 0.09$, 95% CI: 0.03 to 0.16, $k = 8$) (**Tables 3** and **4**). However, in one longitudinal FEP study (64), an association was found between insecure attachment styles (AAI) and negative symptomatology after 12 months.

Positive associations were found between the anxious attachment style and general symptoms ($r = 0.27$, 95% CI: 0.17–0.37, $k = 7$) (**Table 3**). As different questionnaires had been used to measure general symptomatology (**Table 2**), some variation in outcome was related to the type of questionnaire. The self-report questionnaires scored higher.

The association between general symptoms and the avoidant attachment style was also positive ($r = 0.20$, 95% CI: 0.11–0.29, $k = 7$) (**Table 4**). We found a mild variation in outcome and an indication of publication bias (funnel-plot asymmetry: $z = 2.525$, $p = 0.012$). Studies that were not included in the meta-analysis ($k = 4$) were rated as being of lower quality.

Social Recovery

Four studies investigated the association between attachment and social recovery (29, 30, 43, 58). We included their use of the IIP-32, CORE-OM, CASIG, and GAF total as a measurement of social recovery outcome. Higher scores on anxious attachment (respectively, $r = -0.47$, 95% CI: -0.72 to -0.11, $k = 3$) and avoidant attachment ($r = -0.27$, 95% CI: -0.39 to 0.14, $k = 3$) (**Tables 3** and **4**) were related to a lower score on social recovery. In one FEP study that was not included in the meta-analysis, there was no evidence that attachment significantly predicted social outcome measured on the basis of total GAF scores (58).

Personal Recovery

Four studies reported on the association between attachment styles and personal recovery measured with CORE-OM, SERS, RSES or ISMI (43, 45, 71, 73). Higher scores on anxious attachment ($r = -0.39$, 95% CI: -0.49 to -0.28, $k = 3$) and avoidant attachment ($r = -0.31$, 95% CI: -0.42 to -0.20, $k = 3$) (**Tables 3** and **4**) were related to lower scores on personal recovery. One FEP study that was not included in the meta-analysis had used the ISMI to measure the relationship between self-stigma and attachment style (71). Clients with anxious and avoidant attachment styles were more prone to self-stigma than those with a secure attachment style.

DISCUSSION

Overall, this study of the relationship between attachment and recovery found positive associations between both the anxious

TABLE 1 | Instruments for measuring attachment.

Measurement	Type	Scales and dimensions	Categories	Developers
Adult attachment Interview (AAI)	Semi-structured interview	Q sort - Secure vs. insecure - Deactivating (avoidance) vs. hyper activating (anxiety)	CohT - Secure autonomous - Insecure dismissing - Insecure preoccupied - Unresolved	(47) (48)
Adult Attachment Scale (AAS and AAS-R and RAAS)	Multi item self-report	- Discomfort depending on others (avoidance) - Discomfort with closeness (avoidance) - Anxiety about being unloved (anxiety)		(49, 50)
Attachment Style Questionnaire (ASQ)	Multi item self-report	- Discomfort with closeness (Avoidance) - Relationships as secondary (avoidance) - Need for approval (anxiety) - Preoccupation with relationships (anxiety) - Confidence (anxiety)		(51)
Experiences in Close Relationships (ECR or ECR-R or ECR-RS)	Multi item self-report	- Anxiety - Avoidance		(35)
ESM attachment (experienced sampling method with six items from the AAS)	Multi item self- report	- Secure - Insecure		(46)
H and S, Hazan and Shaver's Adult Attachment Prototypes	Single item self-report		- Secure - Anxious - Avoidant	(52)
Psychosis attachment measure (PAM)	Multi item self- report	- Anxiety - Avoidance		(53)
Relationship questionnaire (RQ)	Single item self-report	- Anxiety - Avoidance	- Secure - Dismissive - Fearful - Preoccupied	(23)

and avoidant attachment styles and psychotic and general symptoms. We found weak associations between both these attachment styles and negative symptoms. Higher scores on anxious attachment and avoidant attachment were also related to lower scores on social and personal recovery.

The positive associations we found between both these attachment styles and positive psychotic symptoms are in line with those in previous reviews (11, 25–27) and with a previous meta-analysis (24). In our meta-analysis and review, however, we found stronger positive associations in two FEP studies (62, 66) and no associations in three other FEP studies (42, 58, 64). These stronger positive associations may be related to the properties of the Green Paranoid Thought scale (GPTS). The GPTS measures both non-clinical and clinical paranoia, probably making this scale more sensitive than the PANNS for purposes of detecting paranoia in the FEP population. The absence of associations in the other FEP studies (42, 58, 64) can be attributed to the good symptomatic recovery in the first-episode group. The way attachment relates to psychotic symptoms can be understood by the fact that insecure attachment styles are accompanied by beliefs about self and others that fuel paranoid thinking (74). The relationship between attachment and voice hearing is more complex. While the attachment theory does not in itself offer an adequate account of the complexity of voice hearing, the onset of voice hearing commonly occurs during an important transition in attachment relationships. This suggests that there is a mutual relationship between them (74).

With regard to the negative symptoms, other reviews and the meta-analysis report equally inconsistent and weak findings in this field (11, 24–27). However, one longitudinal FEP study in our review, did find a positive association after 12 months (64). This variance in outcome may be explained by an earlier finding of a higher prevalence of negative symptoms in first-episode psychosis (50–90%) than in a population with schizophrenia (20–40%) (75). Some studies have attributed the lack of an association to a low score on negative symptoms in the research population (62, 68). It has also been argued that negative symptoms reflect

TABLE 2 | Overview of included studies.

Nr	Study	Study design	*N*	Population	Mean age (SD)	Gender (%F)	Attach-ment measurement	Attachment construct	Recovery outcome measurement	PS	NS	GS	PR	SR	Included in the meta-analysis
1	(54)	CS	24	RP	32.9 (8.65)	37.5	PAM	DIM	CDSS PSYRATS	•		•			Yes
2	(55)	CS	35	RP	31.1 (7.86)	37.0	ECR-R	DIM	PANSS	•	•	•			Yes
3	(56)	CS	60	RP	40.2 (11.7)	63.3	RSQ	DIM	PC	•					Yes
4	(30)	L	96	RP	44.0 (12.8)	31.0	PAM	DIM	PANSS IIP-32	•	•	•		•	Yes
5	(57)	CS	73	RP	39.1 (11.3)	17.2	PAM	DIM	PANSS	•					Yes
6	(43)	CS	25	RP	NR	36.0	PAM	DIM	CORE-OM			•	•	•	Yes
7	(58)	CS	52	FEP	24.0 (12.33)	9.6	PAM	DIM	GAF					•	No
8	(59)	CS	588	RP	36.7 (12.33)	19.6	PAM	CAT	PSYRATS	•					No
9	(60)	CS	37	RP	37.1 (7.27)	19.0	ECR-RS	DIM	PC	•					Yes
10	(61)	CS	63	RP	40.4 (10.00)	30.0	ECR-R	CAT	PANSS	•					No
11	(29)	CS	96	FEP	23.7 (4.7)	34.0	ASQ	DIM	CASIG					•	Yes
12	(62)	CS	39	FEP	17.0 (1.21)	41.4	PAM	DIM	PANSS GPTS	•	•				Yes
13	(63)	CS	41	RP	52.5 (9.6)	36.6	AAS-R	DIM	PANSS	•	•				Yes
14	(64)	L	79	FEP	24.6 (7.08)	31.6	AAI (CohT)	DIM	PANSS (12 months)	•	•				No
15	(65)	CS	28	RP	41.6 (10.05)	29.0	AAI	CAT	BPRS			•			No
16	(66)	CS	32	FEP	17.1 (1.3)	40.0	PAM	DIM	GPTS	•					Yes
17	(67)	CS	500	RP	37.5 (11.7)	19.6	RQ	CAT/DIM	PANSS	•	•	•			Yes
18	(68)	CS	127	RP	44.6 (11.53)	34.0	PAM	DIM	PANSS CDSS BDI-II	•	•	•			Yes
19	(42)	CS	34	FEP	23.32 (7.59)	42.0	AAI	CAT	PANSS	•	•	•			No
20	(69)	CS	55	RP	42.16 (11.33)	20.0	PAM	DIM	PSYRATS	•					Yes
21	(28)	CS	30	RP	38.4 (10.2)	0.0	H and S	CAT/DIM	PANSS	•	•	•			No
22	(70)	CS	100	RP	40.3 (11.2)	30.0	RQ	CAT	PANSS	•					No
23	(45)	CS	52	RP	46.64 (9.15)	0.0	ECR	DIM	PANSS BHS RSES	•	•	•	•		Yes
24	(71)	CS	48	FEP	35.3 (8.71)	52.1	RQ	CAT	ISMI				•		No
25	(46)	L (6 days)	20	RP	41.05 (12.53)	NR	AAS (ESM)	DIM	PDS(ESM) Hallucination (ESM)	•					No
26	(44)	CS	47	RP	NR	36.3	RQ	CAT	SCL-90R			•			No
27	(72)	CS	50	RP	33.8 (12.0)	38.0	RAAS	DIM	PANSS	•	•				Yes
28	(73)	CS	176	RP	37.6 (11.8)	30.0	RQ	DIM	PANSS PaDs SERS	•			•		Yes

Summary of included studies.

CS, cross-sectional; L, longitudinal; RP, recurrent psychoses; FEP, first episode psychosis; DIM, dimensional; CAT, categorical; PS, positive symptoms; NG, negative symptoms; GS, general symptoms; PR, personal recovery; SR, social recovery; SD, standard deviation; N, number of included clients.

Attachment measures*; AAI, Adult Attachment Interview; AAI (CohT), Adult Attachment Interview (Coherence of Transcript); AAS, Adult Attachment Scale; AAS-R, Adult Attachment Scale revised; AAS (ESM), experienced sampling method with items from the AAS; ASQ, Attachment Style Questionnaire; ECR, Experiences in Close Relationships Scale; ECR-R, Experiences in Close Relationships Scale Revised; ECR-RS, Relationship Structures questionnaire of the Experiences in Close Relationships-Revised; H and S, Hazan and Shaver's Adult Attachment Prototypes; PAM, Psychosis Attachment Measure; RAAS, Revised Adult Attachment Scale; RQ, Relationship Questionnaire.*

Recovery outcome measures; *BDI-II, Beck Depression Inventory-II; BPRS, Brief Psychiatric Rating Scale; BHS, Beck Hopelessness Scale; CDSS, Calgary Depression Scale for Schizophrenia; CASIG, Client Assessment of Strengths Interests and Goals; CORE-OM, Clinical Outcomes in Routine Evaluation—Outcome Measure; GAF, Global Assessment of Functioning; GPTS, Green Paranoid Thought Scale; IIP-32, Inventory of Interpersonal problems-32; Hallucination ESM (Experienced Sampling Method), hallucination items for ESM (experienced Sampling Method); Inventory of Interpersonal Problems-II; ISMI, Internalized Stigma of Mental Illness Inventory; PaDs, Persecution and Deservedness Scale; PC, Paranoia Checklist; PANNS, Positive and Negative Syndrome Scale; PDS (ESM), Persecution and Deservedness Scale items for ESM (Experienced Sampling Method); PSYRATS, Psychotic Symptom Rating Scale; RSES, Rosenberg Self-Esteem Scale; SCL-90R, Symptom Checklist-90-Revised; SERS, Self-Esteem Rating Scale.*

TABLE 3 | Anxious attachment and recovery outcome.

Recovery	*N*	Mean ES	*P*	95% CI	I^2	Homogeneity (Q, df)
Symptomatic						
Positive Symptoms	15	0.24	<0.001	0.16 to 0.33	40%	Q (df = 14) = 24.9, $p = 0.035$
Negative symptoms	8	0.02	0.477	−0.04 to 0.09	1%	Q (df = 7) = 6.83, $p = 0.088$
General symptoms	7	0.28	<0.001	0.17 to 0.37	35%	Q (df = 6) = 11.3, $p = 0.079$
Social	3	−0.47	0.0116	−0.72 to 0.11	86%	Q (df = 2) = 15.7, $p = 0.000$
Personal	3	−0.39	<0.001	−0.49 to 0.28	1%	Q (df = 2) = 3.37, $p = 0.186$

N, number; mean ES, mean effect size; P, significance; CI, confidence interval; I^2, I^2 *statistic; Q, Cochrane Q test.*

TABLE 4 | Avoidant attachment and recovery outcome.

Recovery	*N*	Mean ES	*P*	95% CI	I^2	Homogeneity (Q, df)
Symptomatic						
Positive Symptoms	15	0.20	<0.001	0.14 to 0.26	9%	Q (df = 14) = 12.8, $p = 0.540$
Negative symptoms	8	0.09	0.0045	−0.03 to 0.16	1%	Q (df = 7) = 11.1, $p = 0.133$
General symptoms	7	0.20	<0.001	0.11 to 0.29	25%	Q (df = 6) = 6.45, $p = 0.374$
Social	3	−0.27	<0.001	−0.39 to 0.14	0%	Q (df = 2) = 1.59, $p = 0.453$
Personal	3	−0.31	<0.001	−0.42 to 0.20	0%	Q (df = 2) = 0.10, $p = 0.952$

N, number; mean ES, mean effect size; P, significance; CI, confidence interval; I^2, I^2 *statistic; Q, Cochrane Q test.*

a neurodevelopmental disorder, and are not therefore associated with attachment related-disruptions (76).

The positive associations found between the anxious and avoidant attachment styles and general symptoms support the idea that insecure attachment is a risk factor for psychopathological symptoms in general (9). Attachment insecurities contribute nonspecifically to many kinds of mental dysregulation because of their negative effects on central psychological resources: feelings such as optimism, hope and self-worth; and intra- and interpersonal regulatory skills (9). Although many insecurely attached people do not suffer from a mental disorder, attachment insecurity seems to amplify the impact of other pathogenic factors (9). In previous reviews, only Gumley et al. (26) addressed affective symptoms in relation to insecure attachment and found positive associations. In our review, two studies, including one FEP study, reported that the severity of general symptoms was not associated with a particular attachment style (28, 42).

With regard to social and personal recovery, higher scores on anxious attachment and avoidant attachment were related to lower scores on social and personal recovery. The associations found in both domains, were stronger than in the symptomatic recovery domain. In one FEP study, however, no evidence was found that insecure attachment significantly predicted social outcome measured by total GAF scores (58). As Berry states, although the relationship between attachment style and social functioning in psychosis is a potentially important area of research, it is seldom investigated (74). It is important particularly because outcomes in social recovery lag behind those in other recovery domains (77). Attachment and social functioning are related concepts. It has been shown that insecure attachment is characterized by negative views about acceptance, reassurance and safety in interpersonal relationships, and that the continued presence of an insecure internal working model of relationships can lead to poor social cognitive skills and result in social difficulties (25).

We found only limited operationalization's in the domain of personal recovery (self-esteem, hope, and self-stigma). As with social recovery, there is an overlap in the concepts of attachment and personal recovery as the inner representation about the self (or self-esteem) is a part of both concepts. Although we found associations between the anxious and avoidant attachment styles and personal recovery, too little research has been conducted to date to allow us to draw conclusions in this area.

Limitations

The primary aims and research questions varied widely between the studies we included and did not necessarily focus on the relationship between attachment and recovery. Although the data extracted from these studies were relevant to our study, they were—from the point of view of the primary authors—sometimes an incidental finding. The research in the included studies was also relatively heterogeneous, with little methodological consistency or overlap. Attachment was measured in various ways using a variety of questionnaires. The issue of attachment is complicated by the number of terms or labels used to distinguish its different forms, with different names often being used for the same constructs.

With regard to the outcomes, we have discussed the terminology and the applicability of the term "recovery" and have concluded that recovery implies an improved state of functioning and wellbeing relative to an earlier state. Since attachment was assessed after the diagnosis of psychotic disorder, we also cannot rule out the effect of the psychotic disorder on the scoring of the attachment scales.

Finally, we found not only that very few studies had examined the domains of social and personal recovery, but also that the examination of social and personal recovery had not captured all possible aspects of the concept.

CONCLUSIONS AND RECOMMENDATIONS

Overall, the available evidence provides support for the role of attachment in the process of symptomatic, social and personal recovery. However, as a large majority of the studies were cross-sectional, and over half were rated as poor, the evidence needs to be interpreted with caution. In addition, the concepts of social and personal recovery are underexposed and research has failed to focus on all their aspects. Further research is necessary if we wish to generate greater understanding of prognosis and to improve treatment efficacy for clients who have undergone a psychotic episode. When we make the step to clinical practice, not only the process needed to achieve recovery is important but also the process necessary to maintaining it. If better long-term recovery is to be achieved, this will require greater insight and appropriate interventions, particularly regarding the process of recurrence and stagnation.

It is important that future research examines the domains of recovery as an entire, fully balanced concept. Given the interaction between the domains (symptomatic, social, and personal recovery), recovery in one domain can be supportive or protective of recovery in another domain. To provide greater insight into the ways in which attachment supports or hinders the process and long-term maintenance of recovery, there is also a need for longitudinal research.

The distinction between the first-episode population and the recurrent-episode population is important, as the two may differ with regard to the ways in which attachment affects prognosis. More data on how attachment influences recovery will support clients and professionals in improving diagnostics and treatment efficacy. Given that mentalization is seen as a mediator between attachment and psychosis, current therapies for psychosis and the recovery process may be improved by developing interventions that focus on helping clients to repair their understanding of their own mental states and those of others (11).

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

AUTHOR CONTRIBUTIONS

EB and NN have written this systematic review and meta-analysis, under the direct guidance of AW, BA, IW, and CM. All authors have commented on multiple versions of this manuscript. All authors have read and approved the final manuscript.

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BRIEF RESEARCH REPORT
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Implementation of Psychodynamic Multifamily Groups for Severe Mental Illness: A Recovery-Oriented Approach

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Background: Among Family-Based Services for the treatment of severe mental illnesses, multi-family models gained particular attention, given the potential usefulness of mutual feed-back, motivation and encouragement among families.

Methods: The Psychodynamic Multi-Family Group Model has been proposed since 1997 in some Community Mental Health Services in Rome. Since 2011 multifamily groups are held weekly in all the six Districts of the Department of Mental Health that serves a population of more than one million people, and data have been collected since 2015 in three Districts. A total of 794 individuals attended the meetings in the period 2015–2019.

Results: Eighty-six percent of those who started, attended more than one meeting. The mean of occurrences of participation among patients was 18.6, among mothers 25.6 and among fathers 21.6. The 794 participants belonged to 439 family units, among which 180 comprised only the patient, 76 only parent(s) or other close person(s), and 183 comprised parent(s) or close person(s) with the patient. Patients participating alone were older than those of families who participated as a whole. Families including the patient showed the longest duration of attendance and the highest prevalence of a diagnosis of schizophrenia in the index patient. Families who had been attending the multifamily groups since a long time maintained a high rate of attendance.

Conclusions: Multifamily groups represent a setting where patients can meet with other people and professionals in a free still structured way, and with not strictly therapeutic objectives. The high number of patients who attended alone suggests that such participation corresponds to a self-perceived need of open and free setting facilitating sharing of problems and solutions. The good tenure of the interventions, the high participation, and the feasibility in the long-term suggest that multifamily groups can be implemented in the mental health services of a large city, are sustainable over many years, and can represent a valuable resource for many patients and families.

Keywords: community psychiatric care, family intervention, implementation, severe mental illness, recovery approach, Psychodynamic Multifamily Groups

INTRODUCTION

Contemporary mental health systems are still challenged by the need to offer adequate answers to people with severe and persistent mental disorders (1). In this area, knowledge and skills have increased enormously, also with the development and assessment of several consolidated models of psychosocial interventions. Among these, Family-Based Services gained particular attention (2). The importance of involving the families lies, on the one hand, in the fact that many mental health users live or are in regular contact with their relatives, often charged with the role of main caregivers with the related material and emotional burden (3); on the other hand, characteristics of the family atmosphere and communication patterns are associated with clinical course and outcome of the patient's disorder (4).

Family interventions may be based on different approaches and adopt different techniques still sharing several characteristics and aims: offering information about the disorder, supporting treatment adherence, assuming a non-pathologizing stance, strengthening communication, avoiding blaming, favoring empathy and mutual respect, sustaining personal growth and self-determination in all family members (5).

The most standardized and manualized models were also most frequently investigated and evaluated for their efficacy: meta-analyses confirmed their effect on relapse and readmission rates, treatment adherence, functional and vocational status, perceived stress among patients, levels of burden and distress and family relationships (6, 7). Their implementation is therefore considered evidence-based and recommended in clinical guidelines for the treatment of psychotic disorders (8, 9) as well as in other areas, like eating disorders (10) and other conditions.

In the last decades, models including more than one family in the same session of treatment gained particular attention (11, 12). One of the potential strengths of such model, compared to other individual or single family approaches, may reside in the mutual feed-back among families being more effective in enhancing support, motivation and encouragement than the therapists' action (13). Amongst such models, the Psychodynamic Multi-Family Group Model originates from the thought and the experiences of Jorge Garcia Badaracco (14), Argentinian psychiatrist and psychoanalyst, who worked in the psychiatric hospital of Buenos Aires since the 1960s. He observed that the discussion occurring in groups including families and patients and coordinated by a therapist was the most natural and useful format in order to promote changes. The group is the setting where it is possible to see what happens in one's own family thanks to the observation of what happens in the other families, different but similar. This allows a process of substantial modifications of the atmosphere in the single families, who are thus prompted to take the responsibility to actively look for solutions to the experienced problems, without any self-blaming for the patient's illness.

In spite of a large dissemination in Italy and Latin America, and a remarkable theoretical production, the model was not assessed empirically, with the exception of an Italian observational study that found a beneficial effect on family burden, particularly in female caregivers (15).

This model was applied in District 1 of the Department of Mental Health of the Health Trust Roma 1 since 1997, to spread out gradually to the other five Districts in the subsequent years. Since 2011 multifamily groups are held weekly in all the twelve CMHCs of the Department of Mental Health that serves a population of 1,041,220 people. Participation to the groups is systematically registered in Districts 1, 2, and 3 since 2015.

METHODS

This is an observational study based on the registry of those who attended the weekly multifamily group sessions. The registry was organized in such a way that for each meeting all the participants were reported. All group participants were identified according to family they belonged to and all had their sex and date of birth recorded. For patients also the diagnosis was recorded. The results presented here are relative to the data systematically collected from July 2015 to November 2019 in all six CMHCs of Districts 1, 2, and 3.

The six CMHCs where the sessions took place were in the Eastern metropolitan area of Rome (Districts 1, 2, and 3) and were part of the Department of Mental Health of the Health Trust Roma 1. According to administrative data relative to 2017, the total population of the three districts was 560,000 people. District 1 had 1,657 people in charge, corresponding to a treated prevalence of 8.94/1,000 inhabitants, and the corresponding figures were 1,958 people and 11.63 in District 2 and 1,579 and 7.70 in District 3. In District 1 the percentage of users with severe mental illness was estimated 66% and in the other two Districts 52 and 71%, respectively. Districts 1 and 2, in Rome central area, although heterogeneous from a sociodemographic standpoint, are among the most affluent areas of the city. District 3, in the North-East of the city, is a less affluent area. In each District there are two CMHCs, where a multidisciplinary team operates, open 12 h/day from Monday to Saturday. They share an asset of rehabilitation residential facilities, Day Centres and other services.

The psychodynamic multifamily groups are based on an open and free dialogue among participants, and employ three simple rules: 1. each participant speaks one at a time about an issue chosen by him/herself and the others listen to without interrupting; 2. nobody's opinion is considered "right" and all participants are requested to listen to and respect other people's point of view, even when it differs from theirs; 3. participants raise their hand in order to take the floor and take their turn accordingly.

Each meeting has two to three facilitators who ensure the ground rules are followed and help to maintain a climate of openness. They never make any diagnostic evaluation, suggest psychological interpretations, or address issues of possible etiopathogenesis of psychiatric disorders. Sessions are held weekly, and last 90 minutes.

In all CMHCs the multifamily groups are known to all service users and professionals. There are announcements in the reception of the CMHCs, and professionals usually present the possibility to access the groups to the new users. This widespread knowledge is also due to the fact that the groups have been holding since several years. There are no criteria to select patients for the groups. Users are free to join if they want to, independently of diagnosis, severity of the disorder, or age, and even without any specific referral from the treating team. Anyway, the team may suggest a client and their family join the multifamily groups at a certain point e.g., after discharge from an acute ward or residential facility, or in cases with a history of repeated hospital admissions, or when a setback in the therapy occurs. In these cases it is recommended that at least one professional of the team accompanies the participant(s) to the first two-three multifamily group sessions. There is no predefined duration and participants can stop going at any time. Generally, 4–6 professionals from the respective CMHCs also attend the meetings.

In each multifamily group there are professionals with different backgrounds and experience. At least one facilitator in each group has specific certified training in multifamily group therapy and receives regular supervision. The delivery of the groups across Rome has become more consistent over time, in part due to a program of international exchange among all the multifamily groups across Argentina, Uruguay, Italy, Spain, and Portugal with Jorge Garcia Badaracco himself, until 2011, when he died.

Duration of participation corresponded to the number of weeks between the first and the last meeting of each participant. The rate of attendance was computed as the percentage of meetings attended in the total number of weeks. Degree of active participation in the meeting was assessed by the facilitators just after the meeting and were based on the frequency of contributions to the discussion.

In the analysis, participants were divided into three groups: family including the patient, only family members without the patient, only patient. These groups were compared as for sex, age and diagnosis of the patient, duration of the participation to the multifamily groups since the first occurrence (divided into quartiles), rate of meeting attendance in the entire period from first occurrence (in quartiles), and degree of active participation shown during the meetings (in quartiles). For the families composed of more than one person, the value used for the duration of participation and the rate of attendance characterizing the family were those of the member who showed the longest duration of participation, and the degree of active participation was the mean of the values reported for each meeting by the same participant.

Associations between the three types of families and diagnosis of the patient, participation and demographic characteristics were tested by means of Pearson's chi-squared test. Analyses were conducted using JMP Pro 15, SAS Institute Inc.

RESULTS

Between July 2015 and November 2019, a total of 1,044 meetings were held in the six CMHCs, with a mean number of participants ranging between 13 and 31 according to the CMHC. The total number of family units who participated to the multifamily group sessions was 439, corresponding to a total number of 794 persons, and representing about 15% of the severe cases of the three Districts. Family units were represented only by the patient in 180 cases (41%), >1 relative or other close person in 76 cases (17%), and >1 relative/other close person and patient in 183 cases (42%).

The mean number of groups attended by patients was 18.6, by mothers 25.6 and by fathers 21.6. Eighty-six percent of families attended the meetings more than once.

Mean age of participating patients (either alone or with their families) was 42.8 (SD 13.9) and the median was 42 years. 43.6% were female. The most prevalent patients' diagnosis was schizophrenia (169 patients, 38.5%), followed by personality disorders (94, 21.4%) and bipolar and depressive disorders (90, 20.5%).

Mean duration of participation was 68.3 weeks (SD 69.3), and the average rate of presence in the period of participation was 56.5% (SD 34.3). One hundred seventy participants (26.7%) were in the highest quartile of degree of active participation, and 90 (21.1%) in the lowest quartile. Brothers or sisters showed the highest degree of active participation, followed by mothers, patients and fathers.

The three groups (**Table 1**) differed according to sex and age. Patients participating alone tended to be older than those of families participating with or without the patients themselves. Family units composition was also associated to patient's diagnosis. The presence of a diagnosis of schizophrenia and, to a lesser extent, personality disorder in the index patient was associated to participation of families including the patient. Families including the patient also showed the longest duration of participation, whereas there were no statistically significant differences in rate of attendance and degree of active participation during the meetings according to family unit composition.

Participation was longer than 122 weeks in 52 family units (31%) where the patient had a diagnosis of schizophrenia, 27 (29%) families where the patient had a diagnosis personality disorders, and 9 (32%) families where the patient had a diagnosis of other disorders. Diagnosis was not associated to rate of attendance. As expected, rate of attendance tended to be higher when the duration of participation was shorter, with very few people being able to maintain a very high rate when their attendance lasted more than 40 weeks. However, 38.5% of families with the longest duration showed a rate between 55 and 88% (**Table 2**).

DISCUSSION

Psychodynamic multifamily groups started in 1997 in several CMHCs in Rome, to be implemented regularly on a weekly basis starting from 2011. Since then, a considerable number of family units and individuals regularly attended multifamily groups every week in each CMHC. We have found a good rate of attendance persisting across the years of observation, with new entries and a portion of long-term participants. The majority of participants had experience of severe and persisting disorders, with the diagnoses of schizophrenia and personality disorders

TABLE 1 | Composition of 439 families according to characteristics of the patient and participation of the family.

	Family composition						
	Patient only (180)		Family member(s) only (76)		Patient and ≥1 family member(s) or other (183)		
	No.	%	No.	%	No.	%	Chi-square *p*
Sex							
Female	83	46.1	30	39.5	78	42.3	13.347
Male	97	53.9	41	54.0	101	55.5	<0.01
Age							
<30	16	8.9	18	25.7	45	24.9	76.975
30–39	22	12.3	23	32.9	61	33.7	<0.001
40–49	59	33.0	9	12.9	50	27.6	
50–59	49	27.4	8	11.4	19	10.5	
≥60	33	18.4	12	17.1	6	3.3	
Diagnosis							
Schizophrenia spectrum and other psychotic disorders	53	29.4	32	42.1	84	45.9	36.109
Bipolar and depressive disorders	51	28.3	10	13.2	29	15.9	<0.0001
Personality disorders	31	17.2	25	32.9	38	20.8	
Anxiety and somatic symptoms disorders	34	18.9	6	7.9	14	7.7	
Others	11	6.1	3	3.9	18	9.8	
Duration (weeks since first meeting)							
>8	52	29.1	29	38.7	40	22.0	8.033
8–40	51	28.5	16	21.3	32	17.6	<0.05
41–122	41	22.9	16	21.3	50	27.5	
≥123	35	19.6	14	18.7	60	33.0	
Rate of participation							
<30%	44	25.0	22	29.3	40	22.1	10.400
30–51%	48	27.3	17	22.7	41	22.7	ns
52–88%	39	22.2	13	17.3	60	33.2	
>88%	45	25.6	23	30.7	40	22.1	
Degree of active participation							
≤1.3 (low)	51	29.0	23	32.4	40	22.2	6.489
1.4–1.9	70	39.8	27	38.0	77	42.8	ns
2.0–2.2	18	10.2	11	15.5	20	11.1	
2.3–3 (high)	37	21.0	10	14.1	43	23.9	

largely represented. These diagnoses were also associated to long duration of participation.

Although the multifamily groups were widely known and easily accessible to all with no waiting list, the families attending the groups corresponded to only the 15% of the severe cases. It is possible that the demand for such interventions exceeds the response from the services, but it is also likely that other factors, not related to the limited offer, can explain the small proportion of families involved, like patients and family members not willing to participate due to wish of privacy, limited trust in the mental health services, fear of a too high emotional demand, or, more simply, for reasons like lack of time and too long distance from home (16, 17).

Patients participating alone were as many as family units including the patient. Family units consisting of family members or close persons without the patient were much fewer and showed shorter duration and lower degree of active participation during the meeting, suggesting that the groups may work better when the patient is there, in agreement with studies assessing the effectiveness of psychoeducation (18). The high number of patients who attended alone suggests that such participation represented a free personal choice and corresponds to a self-perceived need. Anyway, the multifamily groups represent the only setting where patients can meet with other people and professionals in a free still structured way, and with not strictly therapeutic objectives.

Whereas, patients were the most represented among participants, mothers participated more frequently than fathers, and fathers seldom showed active participation to the groups, thus confirming a different attitude in mothers and fathers. This

TABLE 2 | Relationship between duration of and intensity of participation in 375 families with more than one week of participation.

	Duration (weeks)				
Rate of participation	**<8**	**8–40**	**41–122**	**≥123**	**Chi-square *p***
<30%	3 (5.0%)	26 (26.3%)	44 (41.1%)	32 (29.4%)	89.559
30–51%	16 (26.7%)	30 (30.3%)	26 (24.3%)	34 (31.2%)	<0.0001
52–88%	11 (18.3%)	29 (29.3%)	30 (28.0%)	41 (38.5%)	
>88%	30 (50.0%)	14 (14.1%)	7 (6.5%)	1 (0.9%)	

more active participation in mothers may be linked to the effect observed in groups of families of children with a first episode of psychosis, and concerning the quality of participation and coping strategies elicited by mothers and fathers, where, in the framework of overall levels of psychological distress and similar beliefs about the illness, mothers showed more emotion-focused coping strategies, like sharing how they feel (19).

Heterogeneity in rate of attendance, duration, type of participants and composition of the families attending the multifamily groups can be related to the open nature of the setting, where there was no selection or referral procedure and all were free to attend. Moreover, the high participation over the years may reflect that the groups are fulfilling a need for long lasting support for some families and patients that may not be available elsewhere in the mental health system. We also found a remarkable portion of families with long duration of participation who could maintain a reasonable rate of attendance, suggesting that even in the long run families attended rather regularly, likely continuing to perceive a benefit. It was shown that longer duration in itself, more than the actual number of sessions, ensured more improvement in patients (20). This is reassuring, since in this sample long participation was shown by a significant numbers of family units with lower rates of attendance.

The implementation of family interventions in the treatment of severe psychiatric disorders, although considered effective major components of care, is still extremely limited (21). This might be due to severe workload, pressure on specialized services, organization pitfalls, limited staff's training and skills, as well as to a pessimistic view of recovery for people with severe mental illness (22). We have described an experience of systematic implementation of multifamily groups in a metropolitan area with more than one million inhabitants. This was possible thanks to several factors. Specific indications from the Direction of the Department were coupled with wide interest and compliance from services and staff, sustained by a sort of spontaneous cultural osmosis, according to a top-down bottom-up integration. This is suggested by the large participation to the groups of professionals not involved in conduction and facilitation of the groups, that occurred in spite of the increasing pressure on mental health services and the dramatic deprivation of resources. According to data collected on a national basis, service staff of the Region where this experience was conducted was reduced by 68% in the period 2015–2018 (23). This is consistent with the idea that implementation of family-based services is affected not only by structural and organizational factors (5) but also by factors connected to a cultural shift shared by leaders and first line professionals (24). Such process may represent a reframing of the therapeutic alliance in two ways: on one side, by reducing the influence of the paradigm based on biological models of mental disorders and focusing on the social ground where patients and families live; on the other side, by overcoming the blaming attitude toward the dysfunctional aspects in the families, which contributes to "a loss of trust in services and strained relationships between professionals and families" (21, p. 9).

The permanent availability of the multifamily groups also challenges the gap between research and practice. The assessment of long-term effectiveness of family interventions is based mainly on the results of 1–2-year follow-ups, and the issue of whether it is sustained after treatment termination is mixed (24–26). Such a crucial issue likely pertains to all psychosocial interventions, usually offered on a time-limited basis to individuals with persistent long-lasting problems and needs. It has been suggested that, at least in the most complex cases, continuity of such treatment should be assured through ongoing support, even informal (27), or through an open-ended multifamily group structure for families in need (28).

One more issue is related to the need to combine flexibility and continuity in the delivery of the services in order to develop truly community-focused recovery-oriented interventions, dealing with the "real world" of patients and their families and providing treatment that is flexible and tailored to the individual needs (29–31). In this perspective, Glynn et al. (24) envisaged a possible shift in involving families as an influence of the recovery approach, from a "behavioral family management," with the emphasis on negative outcomes rather than building on strengths, to a consumer-driven support approach, with attention to increasing communication and cooperation between mental health professionals and families. The characteristics of continuity and flexibility of the multifamily groups of this study are consistent with a paradigm of dialogue among professionals, consumers and families in a recovery perspective. Consistently with this, the role of the facilitator is closer to that employed in the Open Dialogue approach (32) rather than in psychoeducation. In fact, notwithstanding the multifamily groups share several core strategies with psychoeducation as summarized by Pharaoh et al. (6), like building alliance, reduction of adverse family atmosphere and feelings of guilt, attainment of desirable change in relatives' belief systems, they also show marked differences. Namely, there is no focus on information/education and problem solving, and drug compliance and clinical stabilization are not directly pursued. Rather, change is promoted more through active participation, highlighting and acceptance of the multiple points of view, enhancement of self-righting and self-determination. Consequently, facilitators did not play the role of experts who educate and answer to questions, rather they favored an exchange of views involving as many people as possible, where everybody's standpoint is taken into serious consideration. Moreover, listening and paying attention to different ideas coming directly from consumers and family members in an unfiltered way allow facilitators and professionals to learn about how services could best answer to people's needs as directly perceived and expressed by them.

This study describes an activity as it is conducted in the routine. To our knowledge, few experiences of multifamily groups regularly and persistently available in mental health community services were previously described. Anyway, this report is plagued by several limits. First of all, it is a straightforward account of the implementation of the multifamily groups based on a limited set of variables with no information of outcome indicators, therefore preventing an analysis of effectiveness on patients' and families' mental health and quality of life. Duration is only a proxy of the real one, since data presented only cover the period from 2015 to 2019 and are therefore not comprehensive.

In spite of these limits, our results demonstrate that it is feasible to provide and facilitate well-attended multifamily groups over the long term in an inner city area. More research is needed to establish their effectiveness in terms of clinical and social outcomes.

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 study protocol was approved by the Ethics Committee of Lazio 1 (Comitato Etico Lazio 1, https://www.comitatoeticolazio1.it/, Prot. N.1441, Date 27/11/2020). Informed voluntary written consent was obtained from every individual participants who were screened for study eligibility.

AUTHOR CONTRIBUTIONS

AM, AN, and FR: study design. AM and FR: study coordination and implementation. BD'A, BG, and RE: data collection and analysis. AM and BD'A: drafting the manuscript. All authors contributed to the article and approved the submitted version.

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Targeting Personal Recovery of People With Complex Mental Health Needs: The Development of a Psychosocial Intervention Through User-Centered Design

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Long-term admissions in psychiatric facilities often result in a gradual erosion of the identity of people diagnosed with severe mental illnesses (SMIs) into merely "patient." Moreover, experiences of loss often reduced people's sense of purpose. Although regaining a multidimensional identity and a sense of purpose are essential for personal recovery, few interventions specifically address this, while at the same time take people's often considerable cognitive and communicative disabilities into consideration. This study describes the development process of a new intervention through user-centered design (UCD). UCD is an iterative process in which a product (in this case, an intervention) is developed in close cooperation with future users, such that the final product matches their needs. The design process included three phases: an analysis, design, and evaluation phase. In the analysis phase, the "problem" was defined, users' needs were identified, and design criteria were established. In the design phase, the collected information served as input to create a testable prototype using a process of design and redesign, in close collaboration with service users and other stakeholders. This resulted in an intervention entitled "This is Me" (TiM) in which service users, together with a self-chosen teammate, actively engage in new experiences on which they are prompted to reflect. Finally, in the evaluation phase, TiM was implemented and evaluated in a real-life setting. In a small feasibility pilot, we found indications that some people indeed demonstrated increased reflection on their identity during the intervention. Furthermore, TiM seemed to benefit the relationship between the service users and the mental health professionals with whom they underwent the experiences. The pilot also revealed some aspects of the (implementation of) TiM that can be improved. Overall, we conclude that UCD is a useful method for the development of a new psychosocial

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intervention. The method additionally increased our knowledge about necessary factors in targeting personal recovery for people with complex mental health needs. Moreover, we conclude that TiM is a promising tool for supporting people with SMI in redeveloping a multidimensional identity and a renewed sense of purpose.

Keywords: personal recovery, identity, sense of purpose, user-centered design, severe mental illness

INTRODUCTION

People diagnosed with a severe mental illness (SMI; e.g., schizophrenia, bipolar disorder) frequently experienced meaningful losses [e.g., losing employment/housing/(romantic) relationships/dreams], because of their illness and lengthy admissions. Approximately 20% of people with SMI need these lengthy admissions in psychiatric hospitals or sheltered housing facilities (1–3), because of the severity and persistence of problems in multiple life domains [e.g., treatment-resistant symptoms (4), severe cognitive impairments (5), somatic health problems (6), poor self-care (7), and psychosocial dysfunction (8)]. Unfortunately, these lengthy admissions often lead to losing a sense of purpose, which makes formulating (and thus obtaining) long-term recovery goals extremely challenging (9). Despite the fundamental existential challenges this group of service users faces, the dominant focus during the lengthy psychiatric admissions is on symptom reduction and everyday functioning, so-called clinical recovery. Relatively little attention is devoted to personal recovery, which is the highly individual, often nonlinear, process of learning to live well, despite the consequences of a mental disorder (10, 11).

An important aspect of personal recovery is the transformation process of redefining one's identity from being illness-dominated to a multidimensional self that includes many other self-defining characteristics (12–15). Yanos et al. [(15), p. 2] defined this illness-dominated identity as "…the set of roles and attitudes that a person has developed about him or herself in relation to his or her understanding of mental illness." The importance of (re)developing a multidimensional self-identity that goes beyond the illness identity is also highlighted in a conceptual framework for personal recovery in mental health, the CHIME framework, consisting of connectedness, hope and optimism about the future, identity, meaning in life, and empowerment (16, 17). Supporting service users in their process of personal recovery thus requires (among other highly related concepts as highlighted in the CHIME taxonomy) attention for the (re)development of a multidimensional self-identity.

Self-identity is considered to be an integrated construct and encompasses interpersonal and intergroup identities [Social Identity Approach; (18, 19)]. Interpersonal identity builds upon personal interests, attitudes, and behavior that differs from other individuals, whereas intergroup identity builds upon social group memberships (18, 19). Importantly, self-identity does not refer to one single intergroup/interpersonal identity; rather, it comprises a multitude of intergroup and interpersonal identities that are in constant internal dialogue and are highly embedded in a cultural and historical context (20, 21).

Several factors negatively affect self-identity in people in need of intensive and longer-term psychiatric services [see for a review (22)]. First, as a result of the difficulty to integrate the illness into a multidimensional self-identity, self-identity may be narrowed down to a more or less unidimensional self-identity of mental illness (14). This may be reinforced by the struggles of many people with SMI to self-reflect (23) and to express themselves because of cognitive impairments (24). Second, because of lengthy admissions, social isolation increasingly reduces self-identity to a unidimensional and illness-dominated construct (25, 26). Societal integration is challenging for people with SMI in general (27), and for those living in a residential care setting, the gap with society is even wider (28). Third, (self) stigma negatively affects self-identity if someone considers himself/herself part of a group that is devalued by society (18, 29). In their illness identity model, Yanos et al. (15) describe the impact a unidimensional and illness-dominated identity can have upon multiple recovery outcomes (e.g., hope, vocational outcomes, and even symptoms severity), particularly if combined with good clinical insight. In a recent review, Yanos et al. (30) demonstrated that in the past decade several articles have confirmed various components of their illness identity model, particularly the relationships between self-stigma and diminished self-esteem, hope, and impaired social relationships. However, this review also showed that studies specifically investigating (illness) identity are scarce, both in young adults in the early stages of mental illness, where identity development is still in full swing, and in service users in later stages of SMI. Because of the paucity of studies on identity development in SMI and because acquiring a sense of self is needed to be an active agent in one's own recovery process (31–33), both mental health research and practice should make the (re)development of a multidimensional self-identity a priority.

The literature indicates the availability of a variety of psychosocial interventions and tools that may help mental health workers to support service users with complex mental health needs in their recovery [see for an overview: (34)]. Integrated models of rehabilitation, such as the Boston Psychiatric Rehabilitation Approach [BPRA; (35–37)] and the Strengths model (38), provide tools to gain insight into and work toward recovery goals. Additionally, rehabilitation interventions that focus on recovery in specific (life)domains are available, ranging from cognitive remediation programs with a focus on functional impairment due to cognitive impairments [e.g., (39, 40)], lifestyle interventions [e.g., (41, 42)], and interventions aiming for recovery in the domain of work/school such as supported employment [e.g., (43)] or supported education programs [e.g., (44)]. In the last decade, user-led/user-developed interventions have gained increasing ground, such as Wellness Recovery and

Action Planning [WRAP; (45)], "Recovery is up to you" (46), and Toward Recovery, Empowerment and Experiential Expertise (47). Additionally, digital technological developments, such as virtual reality, provide increasing possibilities for application in psychiatric rehabilitation interventions [e.g., (48, 49)].

Although these psychosocial interventions can be very useful in supporting the recovery process of people with complex mental health needs, these interventions do not explicitly address the recovery of self-identity from a unidimensional "patient only" construct into a multidimensional construct encompassing a wider range of self-identity defining characteristics. One psychological therapy that does incorporate the transformation of self-identity is narrative enhancement and cognitive therapy (NECT) (50). NECT is based on the principles of cognitive behavioral therapy and provides a structured group-based treatment using psychoeducation, cognitive restructuring, and narrative enhancement to target a reduction of internalized stigma that may result in an illness-dominated self-identity. The first results of NECT suggest a reduction of people's self-stigma in people with SMI receiving community care (51, 52) and people with schizophrenia-spectrum disorders receiving community care or partial hospitalization (53), although not all studies confirm the effectiveness of NECT in people with SMI in community or partial hospitalization programs (54). However, NECT still considerably calls upon cognitive and communicative resources of service users and may therefore be less feasible in people with SMI in need of long-term intensive psychiatric care. Another integrative psychotherapy that specifically focuses on improving metacognitive processing (which includes self-reflection) and the integration of a sense of self and others is metacognitive and insight therapy [MERIT; (55)]. Although the first results of MERIT are promising in terms of their effect upon recovery in people with schizophrenia and schizoaffective disorder in community treatment (56, 57), the therapy is highly verbal in nature, making it less feasible for the current target group.

In the present article, we describe the development of a new psychosocial intervention that aims to stimulate the (re)development of a multidimensional self-identity and that is closely tailored to the recovery-related needs of the service users with SMI. In order to do so, the intervention should follow the principles of recovery-oriented care, implying that it should be person-centered and strength-based [e.g., (38, 58)]. Moreover, the intervention should incorporate nonverbal components to meet the cognitive and communicative skills of the designated service users given their considerable impairments in these domains [e.g., (5, 8, 59)]. Examples of existing nonverbal methods include the use of photographs [Photovoice; e.g., (60)] or colored building blocks [e.g., (61)] to visualize a person's lived experience on a certain topic. Moreover, to optimize usability of the intervention, the needs of both service users as well as other stakeholders who support the recovery process (e.g., relatives and mental health professionals) with regard to the usability will be taken into account, as well throughout the development process.

In the development process, we adopted the innovative approach of user-centered design (UCD). UCD is an iterative design process in which the users' needs are central in each phase of the design process (62). UCD includes a variety of research and design techniques, such as the identification of the users and their needs, rapid prototyping, and design simplification (63–65). Although the advantages of the UCD process in the development of psychosocial interventions are increasingly recognized in digital therapies and interventions [e.g., (66–68)], to our knowledge it is only minimally applied in nondigital interventions or therapies. Nevertheless, the advantages of the UCD process are highly relevant for the latter type of treatment as the design goals, such as high learnability, efficiency, memorability, usability, and satisfaction, are very important for psychosocial interventions (64, 69).

It is part of UCD to explore the natural constraints to improve the implementability of an intervention. Therefore, applying UCD to the development of new psychosocial interventions may help to bridge the gap between research and clinical practice (64). This gap may arise from differences between the context in which the intervention is designed (e.g., a university) and the setting in which the intervention will be implemented [e.g., mental healthcare; (64)]. However, when such interventions prove to be efficacious, problems embedding the protocol in service systems, local circumstances, or other unforeseen complications (70) may limit effectiveness in routine clinical practice (71–73). The importance of considering these fundamental factors in the design of an intervention in the treatment of people with SMI becomes apparent upon looking at the success rate of implementing evidence-based treatments (EBTs) in people with SMI. Only 8–32% of the people receive EBT (74), and as few as 0–7% of the service teams offer EBT to more than 70% of the people serviced by the team, despite the availability of EBTs (75).

When looking at factors that impact this implementation success, the usability of the intervention seems to be of great importance [e.g., (64, 76)]. From the review conducted by Lyon and Koerner (64), particularly the design factors flexibility and complexity seem to affect the usability (and implementability) of psychosocial interventions. Flexibility refers to the extent to which an intervention can be flexibly used by (mental) health workers to accommodate individual service users. In the tradeoff between fidelity and flexibility, Cohen et al. (77) demonstrated that more flexible interventions seem to be better implementable, whereas interventions for which fidelity requires strict adherence without room for flexibly adapting to the context may be more difficult to implement. When interventions are too complex, they are also difficult to implement. Considering complexity is particularly important in the context of people with cognitive and communicative impairments because they should be able to understand and use the intervention and its components (78, 79). Proctor and colleagues (80) even suggest that factors such as the acceptability of interventions (e.g., costs, low complexity) may be equally important for successful implementation as treatment effectiveness. That is, interventions with lower effectiveness, which are more acceptable to stakeholders and are less costly, may ultimately achieve more behavior change than interventions with higher demonstrated effectiveness that are more complex and expensive.

The current article aims to describe the UCD development process of an intervention that targets the (re)development of a multidimensional self-identity in service users with an SMI and complex mental health needs, who need long-term intensive psychiatric care (e.g., in residential facilities or institutions for sheltered living). In addition, we will present the results of a qualitative pilot study in which we evaluate whether the developed intervention indeed targets the concept of (re)development of a multidimensional self-identity. Moreover, we will evaluate the feasibility of the intervention as well as determine factors that improve or impede its implementation.

MATERIALS AND METHODS

Development of the Intervention: A User-Centered Design Process

The first step in the UCD process was the formation of a design team, including a peer support worker, family peer support worker, and mental health nurse, alongside a junior and senior scientist, to ensure firm embedding of experiential knowledge in the process of intervention development. The design team was based on the grounds of a long-term psychiatric facility in the North of the Netherlands. In addition to the establishment of a diverse research design team, an ongoing process of expert consultation took place in the project. Upon formation of the design team, the UCD process commenced. Although UCD is a circular and iterative process, three main phases can be distinguished in the design process: (1) analysis phase, in which the primary components of the intervention were identified in close collaboration with the users; (2) design phase, which includes (re)design; and (3) evaluation phase, including implementation and evaluation in a real-life setting (see **Figure 1** for a visual representation of the UCD cycle).

The Analysis Phase

The analysis phase can also be regarded as the "empathy" phase, which is an important step in gaining a deeper understanding of users and their experience. Input for the design phase on specifically the topics identity and personality, life cycle, personal narrative, and wishes and goals was collected through individual meetings with service users, mental health workers from various disciplines, peer support workers, rehabilitation professionals, and professionals in the field of intellectual disabilities, as some of the cognitive and communication needs of people with SMI overlap with the needs of this group. Furthermore, we organized two focus group meetings [one meeting with service users ($n = 5$), researchers ($n = 2$), and one mental health nurse; one meeting with significant others (e.g., family members/friends; $n = 2$), mental health workers ($n = 3$), rehabilitation professionals ($n = 2$), and researchers ($n = 2$)]. All consulted informants emphasized the importance of the focus of the proposed intervention. In addition, they agreed that the intervention should be strengths based. The service user focus group demonstrated that the discussion in itself of topics such as identity was helpful for some participants. For example, when asked to describe her identity, one participant answered, "I do not have an identity, I sleep and that's about it," whereas another participant replied by naming three positive traits that he noticed about her. This triggered her in realizing that she had a nonillness identity, which she forgot. This example also demonstrated that identity is a social construct, indicating that the process should include shared experiences (e.g., with other service users, family, friends, or healthcare professionals). Importantly, some service users preferred not to discuss their childhood or past, because of painful memories and trauma, whereas others like it as this provides others with information about "you as a person (who are your parents, where are you from, what do you like, etc.)." This indicates that choosing what (not) to discuss is a delicate matter and should be an individual choice.

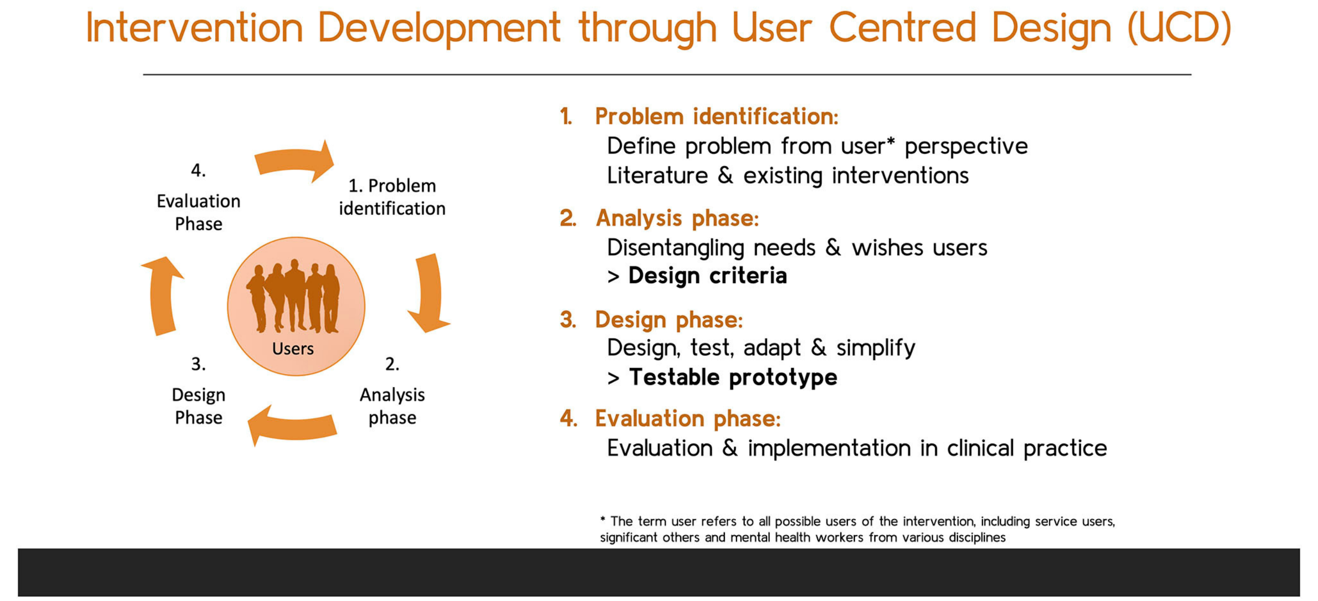
The focus group with significant others (e.g., family members or friends), mental health workers, and rehabilitation professionals/researchers agreed to integrate the five life domains (work and education, social contacts, living, leisure, and finance) of the BPRA as a framework for the intervention [as proposed by the rehabilitation professionals; see for a review: (81)]. Participants agreed to add "health" as a sixth domain and to integrate "finance" in the "leisure and work" areas as financial aspects are often a means for further development instead of a goal in itself. Furthermore, the second focus group, as well as interviewed professionals in the field of intellectual disabilities, emphasized the importance of learning through experience, as discovering talents, qualities, and (dis)likes is often a result of undertaking activities. All participants agreed that experiences should not only entail past experiences and memories, but also include gaining new experiences. Finally, the second focus group underlined the importance of learning through using objects, in addition to learning through experience and language. Externalizing thoughts by using objects or visual aids can be particularly beneficial for service users with communicative and cognitive challenges [e.g., (60, 61, 82, 83)].

Summarizing the collected information from the various sources of information led to the following design criteria: (1) the importance of simplicity as the intervention should be suitable for use by service users, significant others, and healthcare professionals; (2) making use of a group process; (3) a strength-based focus; (4) focus on five life domains; (5) learning through using experience, objects, and language; and (6) equality of the service users and others supporting service users in their recovery process.

The Design Phase

Brain Storm Session

A 1-day creative brainstorming session with two peer support representatives, one service user, one family representative, one music therapist, one art therapist, one psychomotor therapist, one psychologist specialized in the care for people with intellectual disabilities, one psychiatric rehabilitation professional, one student from the institute for positive technical design, two philosophers/artists, one graphical designer/artist, and three researchers was the first step in the design phase. The day followed the principles of "Design Thinking" in which several practical solutions are invented to solve a "problem" [see for a discussion how these principles can be applied to healthcare management and innovation: (65)]. Participants of



Intervention Development through User Centred Design (UCD)

1. **Problem identification:**
   Define problem from user* perspective
   Literature & existing interventions
2. **Analysis phase:**
   Disentangling needs & wishes users
   > **Design criteria**
3. **Design phase:**
   Design, test, adapt & simplify
   > **Testable prototype**
4. **Evaluation phase:**
   Evaluation & implementation in clinical practice

* The term user refers to all possible users of the intervention, including service users, significant others and mental health workers from various disciplines

FIGURE 1 | Visual UCD.

the brainstorm session were challenged to think "out of the box" and to use their ability and experience regarding nonverbal means such as photography, art, or music and to find a solution for the main "problem": "how can we help service users re-discovering their identities while meeting their cognitive and communicative needs?" The ultimate goal of this day was do develop a first prototype of the intervention based on the six design criteria established in the analysis phase. Participants proposed to frame the intervention as a "journey of discovery of my life" in which the service user chooses their own fellow "traveler(s)" (e.g., healthcare professional, peer support worker, relative, friend) and to use language to which people can relate instead of professional jargon. The nonverbal aspect of the journey consisted of collecting tangible and visual souvenirs along the way such as pictures or objects or using nonverbal tools such as pictures, foods, and smells to prompt memories.

Focus Groups Facilitating/Hampering Factors for Recovery

At this point, we aimed to gain important additional information from different perspectives regarding facilitating and hampering factors for personal recovery in an additional round of focus groups (three focus groups with peer support workers in training, who represented the service user perspective, two with mental health nurses, and one with family members). In this phase, we approached peer support workers in training, because of their trained ability to reflect upon their recovery process. These focus groups largely elicited similar information as the focus groups and interviews in the analysis phase, but revealed two additional design criteria that were deemed crucial by all three focus groups. First, there should be room for uniqueness of the service users' recovery process, and second, (self) stigma is an important barrier to the recovery process that should be addressed. Together, this culminated into eight important design criteria that should be considered in the development of the intervention.

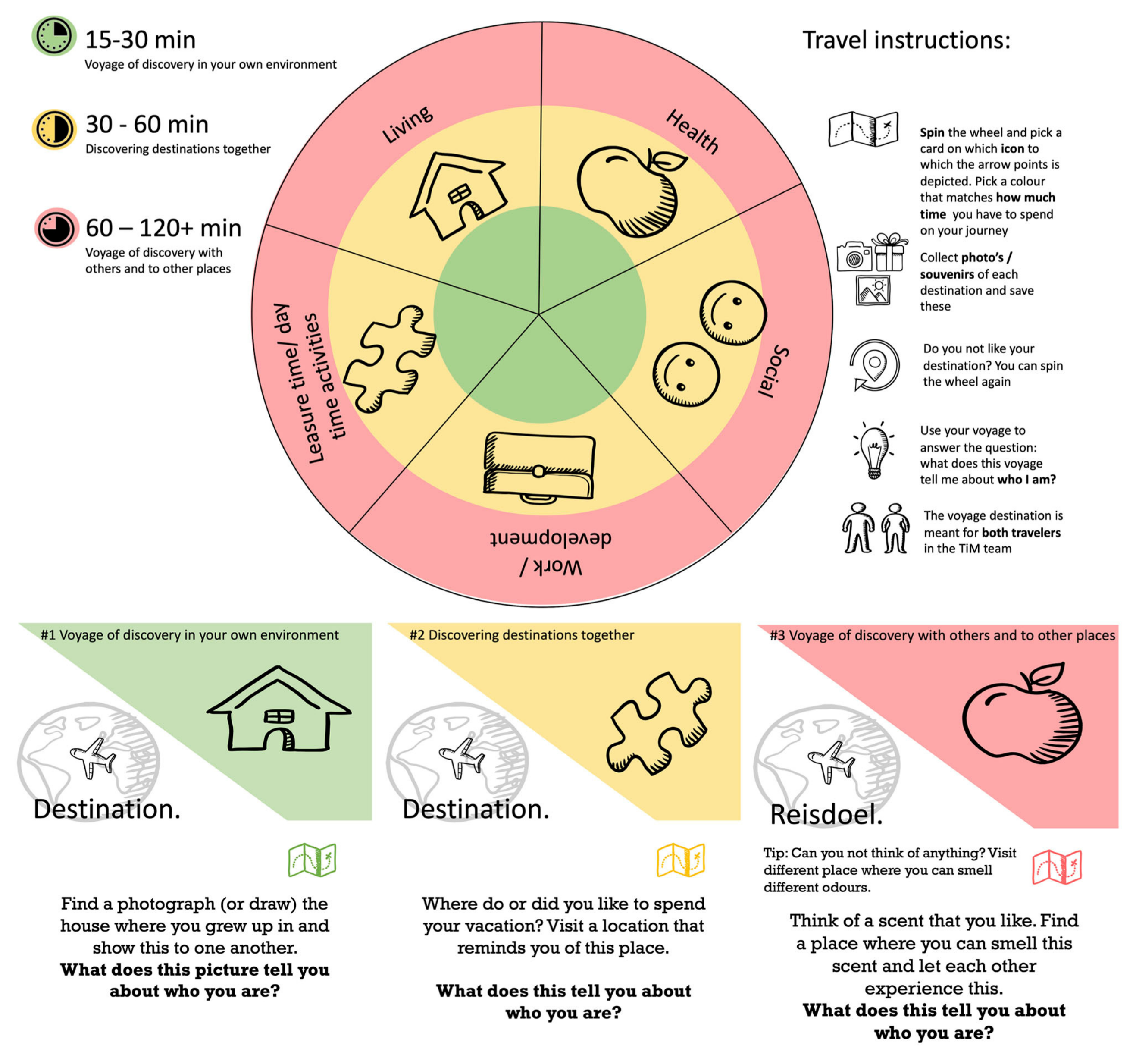
The intervention should

1) be simple and intuitive;
2) allow for the use of a group process;
3) have a strength-based focus;
4) apply a framework of the life domains work, social contacts, living, leisure, and health;
5) facilitate learning through experience, objects, and language;
6) stimulate equality;
7) account for the uniqueness of each individual; and
8) incorporate the topic of (self) stigma;

Development of the First Testable Prototype

Based on the eight defined design criteria and during the brainstorming session developed design concept entitled "the journey of discovery of my life," we developed a first testable prototype of the intervention, which we named "This is Me" (TiM).

TiM commences with the formation of a TiM pair, consisting of the service user and a person of their choosing (e.g., a relative, friend, mental health worker). In the following description of the intervention, we refer to the design criteria defined in *Focus Groups Facilitating/Hampering Factors for Recovery*. Together they undertake an activity aimed at reliving memories from the past or gaining a new experience (criterion 5: facilitate learning through experience, objects, and language). Possible activities are offered by the intervention along the five life domains (criterion 4: domains work and education, social contacts, living, leisure, and health). The content of the activities was designed in cocreation with service users, family, and mental health worker representatives and have a strength-based focus (criterion 3: strength-based). Examples of activities are "Visit your place of residence of in the past," "Introduce the other person to your favorite music," or "Teach the other person something you are good at." In case the activity in question turns out to be unsuitable for (either one of) the pair, or for the moment, the pair will be offered a new activity. This way TiM remains attuned to the wishes of the individual participants (criterion 7: uniqueness of the individual). In addition, both participants have equal control because the activity is assigned based on chance, and neither participant is in the lead (criterion 6: equality). In accordance with the criterion of equality, it is also important that the activity is performed by both team members and not just by the service user (e.g., showing each other your favorite painting). The activities also include topics with the underlying theme (self) stigma and restoring old or establishing new contacts [criterion 8: (self) stigma]. The activities are formulated in a simple and action-oriented manner (criterion 1: simple & intuitive), so that the pairs actually enter into the experience (non-verbal) and not just engage in conversation (criterion 5; facilitate learning through experience, objects, and language). Finally, the journey should be captured and reflected upon by taking a picture or choosing an object that helps remember the specific activity.



Spin the wheel and pick a card on which **icon** to which the arrow points is depicted. Pick a colour that matches **how much time** you have to spend on your journey

Collect **photo's / souvenirs** of each destination and save these

Do you not like your destination? You can spin the wheel again

Use your voyage to answer the question: what does this voyage tell me about **who I am?**

The voyage destination is meant for **both travelers** in the TiM team

Find a photograph (or draw) the house where you grew up in and show this to one another.
What does this picture tell you about who you are?

Where do or did you like to spend your vacation? Visit a location that reminds you of this place.

What does this tell you about who you are?

Tip: Can you not think of anything? Visit different place where you can smell different odours.

Think of a scent that you like. Find a place where you can smell this scent and let each other experience this.
What does this tell you about who you are?

FIGURE 2 | Second prototype.

Although TiM aims to couple two people who engage in activities together, it is possible to organize the selection and sharing of experiences in a group process (criterion 2: group process).

User Evaluation Meeting

In an evaluation meeting with future possible users [service users ($n = 7$), a significant other ($n = 1$), peer support workers ($n = 3$), other mental health workers ($n = 3$), rehabilitation professionals ($n = 2$), and researchers/university teachers ($n = 3$)], we tested and evaluated this first prototype. Participants formed pairs, picked a card describing an unknown activity (switching activities was possible), were given 60 min to execute the activity, and were asked to reflect upon their activity. Participants indicated the activities positively influenced the equality between participants. Undertaking experiences aided the conversation between participants, even when participants knew each other. The reflecting questions were deemed unnecessary, as most of the topics were already discussed during the activity. Some participants indicated they felt uncomfortable leaving the institutional grounds, mostly out of habit or anxiety. Therefore, some activities may not be suitable for all users. Thus, the design should be adapted such that there is variation in challenges related to leaving the current destination and involving other people. Finally, participants felt that uniqueness was accounted for by the opportunity to choose pairs and the possibility to switch activities when desired.

Further Testing in Other Clinical Settings

Experiences of the user evaluation meeting served as input for fine tuning the prototype into a second prototype. We created more cards and activities in order to gain more experience in a clinical setting, where TiM will most likely be used. Moreover, to stimulate equality between users, we transformed TiM into a picker wheel, such that the category of the activity would be determined by chance (**Figure 2**). The categories represented the aforementioned five life domains (work, social contacts, living, leisure, and health). In this phase, in addition to content and form of TiM, the implementation procedure was evaluated in (1) group vs. pairs testing and (2) introduction at a random moment during the day, during a previously organized activity, upon invitation, and in an individual manner to pairs (service user & mental health worker). Five different locations/departments at two Dutch psychiatric rehabilitation facilities (four at Lentis Zuidlaren, in the North of the Netherlands; one at Dijk en Duin, in the West of the Netherlands) participated in testing the prototype.

Importantly, this round of testing taught us that the equality that people experienced in the user evaluation meeting was not always experienced in a similar way in a clinical setting. In many cases, the existing division of roles between client and care provider implied that (nursing) professionals took the lead when choosing activities. Although the picker wheel ensured that category of the activity was now determined by chance, the activities within each category were printed upon separate cards. In practice, mostly the care providers took the initiative in selecting a card, rather than it being a shared decision. Additionally, it appeared necessary to explicitly add the possibility to reject an activity and spin the wheel again in case the activity does not suit either one of the team members. Furthermore, testing the prototype at clinical departments revealed that people were tempted to remain seated and talk about, instead of actively engaging in an activity. We encountered barriers when the activity required people to leave the location. This was sometimes due to service users feeling uncomfortable to leave the home, but also for lack of time of nursing staff to undertake activities elsewhere. Therefore, for each activity, three "challenge" levels in terms of location and involvement of others were created. In terms of location, the most challenging level requires people to leave the premises, whereas the least challenging allows people to stay in their own home. In terms of involvement of others, the most challenging level requires the involvement of other people than the TiM pair, whereas the least challenging does not require this.

The collected results of the evaluation in this phase indicate that, despite the lessons learned, participants were enthusiastic about TiM. They like engaging in the activities, and in all cases, participants learned something new about their TiM partner, even if they had known each other for a long time. Participants also appreciated the opportunity to choose their own activity.

Designing a Third Prototype

We used the results from the previous rounds of testing to adapt TiM into a third prototype. To ensure an attractive and intuitive design, we appointed a graphic designer/artist (present during the brainstorm session) for the prototype design. We transformed the prototype into a larger picker wheel (**Figure 3**), now requiring a standing position and thus stimulating users to adopt an active posture. We also designed a travelogue that TiM team members could use to log (1) with whom they undertook the activity, (2) which activity they undertook, (3) how they experienced the activity, and (4) their experience through a souvenir (**Supplementary Material 1** for an impression of the travelogue). The latter was included to commemorate the experience and reflect upon it by assigning thought and emotions to the experience, as well as the opportunity to share the experiences with others. Moreover, in this third prototype, the activities within the categories were no longer presented upon separate cards, but rather on the picker wheel to ensure the choice of activity would not be decided by the care provider.

Based on the UCD process up to this point, we integrated the "TiM training" in the design for two main reasons. First, simple instructions are imperative to guarantee accessibility for all possible participants (clients, relatives, significant others, mental health workers). In addition, a "professional training" may bring about an unfair advantage for professionals and create inequality between users. Therefore, the following simple instructions were printed on the wheel and in the travelogue: (1) Pick a TiM partner, (2) Spin the wheel, (3) Do the activity, and (4) Log the activity in the travelogue.

Evaluating the Third Prototype

Evaluation Meeting With Users of TiM

The third prototype was tested in two separate group meetings, organized at a central location in two long-term clinical facilities,

1
Laat elkaar het televisieprogramma zien dat je vroeger het liefste keek

2
Ga samen iets doen waarvan je denkt dat de ander dit leuk vindt

3
Bezoek samen een plek die je doet denken aan jouw favoriete vakantie bestemming

Kies een teamgenoot, draai aan het rad, doe samen de activiteit en leg dit beide vast in een foto of aandenken.

FIGURE 3 | Third prototype.

such that service users could also decide to participate on the spot. Participants included service users ($n = 9$), mental health workers ($n = 5$), students' user-centered design ($n = 4$), a significant other ($n = 2$), a researcher ($n = 1$), peer support worker in training ($n = 1$), and the graphic designer responsible for the prototype. The responses indicated that the wheel was inviting and stimulated participants to spin it and read the activities. The appearance of the wheel also triggered the curiosity of nurses and service users who passed by, some of whom participated ($n = 3$). Nevertheless, a number of critical points did emerge. First, participants were confused by the word "travel destination" that we initially used instead of the word "activity," which they associated with a vacation or actual journey. Second, the wheel simultaneously presented three activities, each representing one of five life domains and each at a different challenge level. This was confusing for participants; they preferred organization of activities per theme and to apply the three levels of challenge based upon this activity. Third, the different print color for each challenge level hampered the readability. Fourth, the instructions and game rules page in the travelogue caused confusion, inactivity, and a focus upon understanding TiM instead of engaging in activities. Finally, the verbal nature of the travelogue was not suitable for all participants. Participants preferred a visual log and use photographs, drawing, etc. Finally, two individual TiM pairs who tested TiM separately most importantly indicated that the various activities often resulted in meeting people who (have) play(ed) an important role in the lives of the service users.

Consultation of Rehabilitation Professionals

At this stage, different professionals in the field of research on recovery and rehabilitation ($n = 6$), a peer support worker ($n = 1$), a family peer support worker ($n = 1$), and social innovators ($n = 2$) were consulted to address final issues encountered with the third prototype. First, reflection upon experiences remains a difficult process for the service users as well as their TiM partners.

The various professionals emphasized that verbal reflection may not be feasible, especially as most service users experience difficulties in verbal communication. They noted that not the learning experience, but rather the experience itself should be emphasized to stimulate personal recovery. Reflection upon the experience can be facilitated by enabling users to visually capture the experience (e.g., by taking a photograph) and by valuing this experience (visually). This value assignment should not be an emotional reflection but rather an appreciation of the moment (I liked this experience) that may include a short elaboration why they did (not) appreciate the experience.

Another difficulty we kept encountering was how to activate participants to go out and experience smells, music, interactions, or other activities. The professionals agreed that the activities/experiences should be actively formulated ("visit place X, listen to music, taste food") to make TiM more action oriented. Furthermore, both service users and staff often have a fixed routine and behavior. From our own experience with TiM up to this point as well as from the experience of the professionals, we learned that "breaking routine" is a great way to activate participants and trigger behavior out of the usual pattern. For example, when we tested the prototype in a festival-like meeting outside a clinical setting, most participants were likely to join, to experience, and even to reflect upon the experience. However, when we used the prototype inside a clinical department, people showed mostly the behavior that confirmed the role of patient vs. healthcare professional. Through making TiM movable and placing it on the locations only temporarily, we prevent TiM becoming a fixed object in the usual setting. Thus, TiM can remain to "disrupt" the environment to some extent, attract attention, and possibly trigger different behavior. Finally, the professionals suggested to create different designs of TiM, for example, a pocket-size edition, to facilitate the use of TiM out of a clinical setting (e.g., use by relatives).

Based on the second evaluation meeting and the consultation of rehabilitation professionals, the form and content of TiM were fine-tuned, and a pocket edition was made, which was essentially a smaller version of the large picker wheel. The **Supplementary Material 1** provides a complete overview of activities that were included in the final version of the intervention. Additionally, the form of the travelogue was adapted and now resembled a large handheld fan. The travelogue was organized in the exact same way as the large picker wheel, such that when laid out completely, it formed a large circle (**Figure 4**). The travelogue allowed people to now visually represent the activity and value the experience.

The Evaluation Phase: A Pilot Study

In this phase, we implemented and evaluated TiM in a real-life setting through organizing an implementation tour at 16 residential care facilities for people with SMI in the north of the Netherlands. This entailed a festival-like (including music, food, drinks) introduction event at each location to create an easy-going and activating atmosphere that stimulated other than usual role patterns and to maximize attendance of all parties. At the event TiM was introduced and explained. People had the opportunity to use TiM for the first time and to gain, share, and exchange their experiences. All potential users were invited to these events: service users, family and significant-others, and mental health professionals. At 3 of the 16 locations (one city and two rural), all service users who were present at the festival-like introduction event ($n = 30$) were additionally invited to participate in a qualitative evaluation study. They received verbal information about the study, and if they indicated to be interested, they also received a written information leaflet with additional information. After 1 week, a researcher revisited the location to answer questions. All service users were allowed to participate in TiM, regardless of their decision to participate in the pilot study. Before signing informed consent, participants were informed that they could withdraw from the study at any given moment. Service users received a gift certificate of 15 euros at the start of the study, and another one of 15 euros at the end of the study. The Medical Ethical Testing Committee at the University Medical Center Groningen provided ethical clearance for the study.

Participants

Eleven service users with an SMI (out of the 30 approached) who live in a sheltered living environment agreed to take part in the qualitative evaluation study. One service user withdrew from the study before the interview (reasons unspecified). Of the 10 participating service users, six were female and four were male; the median age was 52.5 years (range, 29–61 years). On average, service users had lived 14 years (range, 1–30 years) in sheltered living facilities or other clinical psychiatric settings. Self-reported diagnoses included schizophrenia, schizoaffective disorder, autism, bipolar disorder, borderline personality disorder, anxiety, and depression. In addition to the service users, three mental health professionals (one social worker, two peer support workers in training; age range, 30–38 years old), who used TiM with the service users, were interviewed. The mental health professionals also signed informed consent, and the service users gave written permission for the professionals to share information about them. Service users and mental health professionals were instructed to use TiM at least once every 2 weeks. However, we did not further control this, as we were interested in the natural usage of TiM.

Materials and Procedure

The semistructured interviews for service users and mental health professionals were created with four questions in mind: (1) how do people use TiM in practice; (2) what is the effect of TiM on the service user, more specifically on identity development and the relationship with the TiM partner; (3) how do service users and mental health professionals evaluate (the separate components of) TiM; and (4) which factors influence the implementation of TiM. The interviews were created by the research team in two consensus meetings. To evaluate to feasibility of the questions of interview, one service user who had used TiM, but did not participate in this study, was consulted for feedback. The questions were only used to guide the interview; participants were free to share their own experiences. Interviews were conducted face-to-face in a quiet room at the sheltered living facilities. The interviews were conducted by a master

FIGURE 4 | Hand fan travelogue.

student in clinical neuropsychology, who also worked as a clinical intern in a residential setting for people with an SMI. In some cases, a mental health worker was present because the service users wanted their support as they did not know the interviewer. The interviews were recorded such that they could be transcribed.

Analysis

Thematic analysis in Atlas.ti 8.0 for Windows (Scientific Software Development GmbH) was used to analyze the transcripts. The analysis was carried out by two authors (LvdM and EvS) who represent different perspectives (respectively, a researcher in the field of SMIs and self-reflection, and a researcher with experience as a mental health service user). *A priori*, the main themes *Usage*, *Effects*, *Evaluation*, and *Implementation* were defined, as they relate to our research questions. *Usage* refers to the manner in which people used TiM, including which subcomponents people used and the usage frequency. *Effects* refers to changes people noticed as a result of their usage of TiM. We anticipated the subthemes *Identity* and *Relationships* within the main theme

Effects, as identity was the target of TiM, and identity change occurs in a social context. *Evaluation* refers to the appraisal of (aspects of) TiM. *Implementation* refers to the circumstances influencing (successful) usage of TiM. Next, EvS did the first round of coding using the Noticing-Collecting-Thinking method described by Friese (84). A recursive strategy was used during this process. After grouping the codes into the main themes, EvS and LvdM discussed and interpreted the results. Finally, EvS did an additional round of (re)coding and (re)grouping, including the induction and division of subthemes, based on this discussion.

RESULTS

No new main themes were derived by induction, in addition to the *a priori*–defined themes *Usage*, *Effects*, *Evaluation*, and *Implementation*. Under the main theme *Effects*, *Activation* was found as a new subtheme, next to the subthemes *Identity* and *Relationships.* Results will be presented per theme, although it should be noted that themes were linked (e.g., positive effects were reasons for positive evaluations; better implementation was associated with more usage, etc.); therefore, links between themes will be described as well. All quotes were translated from Dutch to English. For privacy reasons, proper names were removed, and the pronouns *she*/*her* will be used for third-person singular.

Usage of TiM

Six of 10 service users participating in the pilot study used TiM after the introduction event. The frequency of usage varied from often (five or more times; $n = 3$), to regularly (3 or 4 times; $n = 2$) to once ($n = 1$). All service users who used TiM used it with a mental health professional. Two other service users formed a TiM pair together, but did not use TiM because the activity they had planned was no longer possible because of a physical disability of one of them. As they were not assisted in planning something else, they abstained from using TiM. The final two service users did not use TiM because of health problems and because they were not reminded by the staff to use TiM; the latter becomes clear from the following statement: "Nothing was said to me, nobody said anything. If that does not happen, I don't do it on my own accord, because I don't know how that thing (the TiM picker wheel) works."

Some people also used TiM in a group in addition to individual meetings ($n = 3$), by taking turns in answering questions or doing an activity together (e.g., sharing their favorite music, visiting an outdoor workout park). In other cases, TiM was used one-to-one, and activities took place both inside and outside people's living environment (e.g., visiting the parental house or a relative, visiting a Buddhist monastery, a digital tour of someone's former place of residence, meditating together). In one case, family was involved; they made a short video of the service user's former place of residence, including the old house and school. The travelogue was not used at all locations. One participant said she "did not see the point" of documenting the activities in the travelogue. However, at another location, people used the travelogue instead of the wheel to select activities, because they used TiM frequently and spinning the wheel did not provide them with sufficient variation in activities.

Despite the intention of establishing equality, it was usually the mental health professional who took the lead in the usage of TiM. For example, when picking one activity out of three alternatives, one professional noted:

> "It can be a little bit difficult to make a choice out of three things. I left that choice as much as possible with <name service user>, but sometimes you have to make that choice yourself because she found it somewhat difficult."

At another location, a service user described that the mental health worker usually proposed an activity, but always consulted the users whether they liked the idea. Thus, while the professional took the lead, service users still had an active role in the choices. Spinning the picker wheel itself was done by both the service users and the mental health professionals.

The type of personal information that professionals were willing to share with service users varied. While one professional shared only "superficial things," another shared a lot of personal information, especially related to childhood and family. When asked whether she found it difficult to share personal information, she replied:

> "Not for me personally, I am also a peer support worker in training and then you are more inclined to use personal things in your work anyway. And I find it especially nice that there is more equality in that relationship, or something. I find it harder to navigate when there is more distance. I don't find it difficult, but I can imagine that it is different for other people."

The amount of personal information service users shared with professionals also differed. This may be a personal preference according to one of the professionals: "then I come inside her head, and then I do too much with her… she has that with a lot of people." The personal information shared by service users did not necessarily correspond with what professionals shared, as some service users still shared in-depth personal information when the professional did not.

Effects of TiM

Within the theme *Effects*, we anticipated *a priori* the subthemes *Identity* and *Relationships*, and inductively we also found the subtheme *Activation*, which contains statements about becoming more active as a result of TiM. Regarding the subtheme *Identity*, one service user was very articulate about how TiM helped to deepen and broaden the way she saw herself: "In a certain sense it clarifies things about yourself, you can put things in order… That is nice to know, because maybe you come across thing you never knew about yourself." Furthermore, TiM made this person reflect on her past: "I came more in touch with my youth, I used to think about that already, but now I dwell upon it more." Other service users described how TiM made them think about their past, especially activities such as visiting or drawing their old house or talking about family. Some people said they were emotionally touched by these kinds of activities; someone stated: "You do come across yourself, across your own things; they come up, yes you do feel things…." The most memorable TiM activities that service users reported were activities where people were physically active, like visiting their old house, meditating together, or visiting an outdoor work-out park, although most people said they did not think a lot about the TiM activities. Four service users indicated that TiM did not lead to perceived changes in the way they saw themselves, although one of them said that she still learned something new about herself, namely, "That I should look at the positive aspects and to use my capabilities… That I do not diminish or sideline myself, those kind of things, I am allowed to be there." Regarding the subtheme *Relationships*, four service users mentioned that relationship with the TiM partner became better, closer, and more equal. Another person indicated that the process of getting acquainted was much quicker: "That same connection between me and my mentor, that took more than 2 years, before I thought I can tell them about this and that. With <name TiM partner>, it was two/three weeks." For this person, TiM worked very well to get acquainted with a new mental health professional. The fact is that TiM offered this service user and professional topics where they could talk about "worked wonders." The mental health professionals also noticed changes in the relationship with the service users. One mental health worker described the contact as a result of TiM with the service user in the following way:

> "Much more, well… not really like you have become friends or something, but much friendlier or something. Much more open, easier, barrier-free so to say. That you have made a little bit of a connection in that sense. Because you share things of and with each other."

This mental health worker also noted a change in roles that resulted from the service user learning the professional mediation skills:

> "Normally you are a bit in the role of learning or educating someone about something, or something, and that role turns around a bit. I have noticed about <name service user> that the contact has become much more equal, or something."

This role change was also noticed by the service user who saw the professional differently: "I have seen the possibility that I can see <name TiM partner> as a common-meditator, or something what every that may be, because she also meditates."

Regarding the third subtheme, *Activation*, a professional clearly described changes in the behavior of two service users with whom she used TiM. They would more easily approach her, take initiative, and ask questions. When discussing the openness of service users during a TiM activity this professional said:

> "Oh well, that parental house, there she was very open and honest. Then she told me much more about her past than she normally would. And she said, how did she say that… nobody has ever done this with me. So, you do get appreciation. And they ask can we again sometimes…"

Two service users indicated that TiM had sparked their interest in certain activities. For example, a service user who previously visited an outdoor exercise park said that when cycling through that park, she thought: "Well, let's try that again sometime."

Evaluation of TiM

Most people indicated that it was "fun" to work with TiM. Most service users did not elaborate much, for example, someone said doing TiM was "a nice way of keeping yourself busy." Someone else said she liked it because TiM offers some distraction, and she liked that she was working on the project with others. The service user who used TiM to get acquainted with a new care provider liked that there is no pressure behind TiM, the fact that TiM sets the topic for a conversation, and the element of chance. None of the service users evaluated TiM overall negatively. All service users were positive about the fact they had to use TiM together with someone else.

The mental health professionals were generally positive about TiM as well, one professional said:

> "I am very enthusiastic about the project myself and then you pull residents into it. If you find something very nice yourself it will spread to the residents, because now they already come with things themselves."

Another professional praised the visual aspect of TiM:

> "Well, you make things visual, that is actually always good. Because they are actually very abstract concepts, an old hobby that you have lost, quite abstract, but with this you can make it visual very well. Uhm… I only see the benefit of it."

A number of components of TiM received a mixed evaluation. Some people really liked the travelogue and used it to select activities, whereas others found it redundant. People generally liked spinning the picker wheel, but some service users found it difficult to pick one (of three) activity the wheel provides. Furthermore, one service user indicated that improving some activities on the wheel should be rephrased, and one professional stated that there was too much similarity between activities.

The first impression of TiM yielded anxiety in some service users, as they initially expected that it would be difficult. Someone who ended up not using TiM said: "If I look at it, it looks really complicated." However, someone else ending up not using TiM, but who still intended to do so, indicated she would like TiM because "You do things that you otherwise would not do, not so easily. It's playful so there's no pressure behind it, so that's okay." All professionals and all except one service user found TiM easy to use once using it. A service user summarized: "The wheel itself was wonderfully simple. 1, 2, or 3. Okay if we've already had this one, then we'll continue with two." The person who still experienced difficulties using TiM had particular problems describing the activities she undertook and did not comprehend all the text on the wheel. Most service users said they would recommend TiM to others. When asked why, the service user who had been most articulate about the effect of TiM on identity said, "Well, it forces you to think about yourself, and then you might come across new things and that is quite nice." Two other service users were more ambiguous; they believed everyone should personally decide whether or not they wanted to use TiM.

Implementation of TiM

Within the theme of *Implementation*, several factors were perceived as barriers to or facilitators for the usage and success of TiM, some of which have already been described. First, with regard to barriers at the service user level, TiM was not used when (mental) health reasons or other problems were too prominent or urgent in a persons' life. Furthermore, not knowing how TiM works and a first impression that TiM is too complicated may be barriers to using TiM. Some service users had difficulty selecting an activity from the three options or to come up with an alternative activity when the originally planned activity was no longer possible. Finally, a service user said that the barrier to ask someone to do TiM was too high for her, especially as she was already otherwise engaged.

Some personal characteristics of the service users may also influence the effect of TiM; people may not like it when people come too close, have difficulty to recall experiences due to memory impairments, have difficulty reflecting upon their experiences with TiM, or are hesitant to reflect: "I found it quite nice, but it also made me a bit hesitant, because you are going to think a lot about yourself and I find that quite difficult." Thus, as one of the service users remarked, TiM may not be for everybody: "You have to agree with it, it has to be something for you. You should think about it well before you start."

Another important barrier in using TiM was the lack of someone to use TiM with, as staff was not always available or willing to participate. One service user said that using TiM in a group was not optimal for her: "Because there are more who get a turn, because you have to consider others, then you only have a small opportunity to tell something about yourself." Sometimes, activities were difficult to organize and require substantial planning, a point raised by both a professional and a service user. This may lead to the abandonment of plans or require flexibility, as one professional phrased this:

> "If they really want something… like going to the parental house, then it takes me a few hours… then I need to come back for it, and it costs a few hours of my time… but I write down those hours, it is not really a bother."

Professionals found it difficult to be the only one in the team who used TiM, as nurses and carers were already otherwise engaged. Although according to one professional, this may also be a matter of perspective:

> "For them it is more the idea that it is something extra, that it is not really required and then there is no time for it. While it really can be a nice component of your work, and it is not really seen in that way."

The first facilitator indicated by one service user was the introduction event: "that indeed made the next step with <name Tim partner> a bit easier." Regarding how service users should be approached to engage in TiM, one service user said: "Just approach people really carefully, because they often have a certain image, something like what has someone else got to do with what I know. So, first convince and then the person has to decide for themselves." Another service user said that using TiM should be an individual's choice and not be obligatory. Service users who used TiM as well as those who did not said regular appointments would improve the usage of TiM, because "If I have to do it on my own accord, it will not happen, I know that about myself." This corresponds to the finding that generally someone other than the service user needs to take the initiative, a point raised by multiple service users and professionals. According to a service user, the person you use TiM with should not be just anybody:

> "Well, it is good to do it together with someone, and then with somebody who is interested in you doing it. Because if it is somebody who just sits there, then they are of no use. You have to do it with somebody who thinks along."

Both peer support workers in training who were interviewed suggested TiM would be especially appropriate for use by peer support workers, given their different relationship with the service user. They all did not agree that TiM would be appropriate to use by peer support worker in training. For one person, TiM was part of her learning goals, giving her more room to use TiM, whereas it was difficult for the other to use TiM alongside the large number of assignments within her internship. One peer support worker in training indicated that other colleagues should also make time for TiM, because "Such conversations can bring you a lot in the long run and can also bring the clients further, I think." Finally, a professional noted that the importance of positioning TiM within a team of professionals:

> "So maybe it is an idea that these methods, TiM, are less profiled like a standard method, but more like an extra tool that can be used, and then it must continue to receive attention."

DISCUSSION

The aim of the current article was to describe the UCD process and the qualitative pilot study of an innovative psychosocial intervention to support recovery of a multidimensional self-identity in people with an SMI. Most importantly, the process of UCD proved to be a thorough and inspiring process that leaves ample room for adaptation and improvement according to wishes and needs of its users (be it service users as well as people supporting service users). The pilot study demonstrated that the final product, TiM, seems useful and promising. Service users indicated that they enjoyed TiM, and some noticed effects, although some challenges with regard to the implementation and design remain.

Understanding the problems and the needs of the end-users for whom the product is developed is a core principle of UCD (62) and the main goal of the analysis phase of this project. Subsequently addressing the defined problem in a way that is meaningful to the user is a basic precondition for the usability of an intervention (64). Therefore, service users were consulted in various ways at all stages of the project. We found that service users with complex mental health problems were able to meaningfully participate and contribute to the understanding of the problem as well as to thinking about the form and content of the intervention. Even people who were less capable to express their needs and wishes regarding the content or design of the intervention were still able to indicate factors that they felt were important to consider. Apart from the service users, we also included other potential users and stakeholders (e.g., family, significant others, mental health workers, researchers, and rehabilitation professionals) in the UCD process. This revealed additional insights into the design criteria of the intervention that we formulated at the end of the analysis phase. These design criteria were used as a basis for developing a first prototype of TiM during the brainstorm session and were considered helpful by the participants. In addition, participants perceived the involvement of creative professionals during this session as helpful in order to stimulate thinking "out of the box." Building upon the insights from the brainstorm session, as well as the subsequent input of focus groups with peer support workers, relatives, and psychiatric nurses, the six initial design criteria were supplemented to a total of eight design criteria (see Focus Groups Facilitating/Hampering Factors for Recovery). The subsequent iterative process of prototyping, testing, evaluating, and redesigning, which is typical of UCD [e.g., (63)], was crucial in adapting and fine-tuning TiM to the needs of the service users as well as mental health workers and family members.

In the pilot study, we investigated four main questions concerning the usage, effects, evaluation, and the implementation of the newly developed intervention. We found that TiM was used, but not with the frequency (biweekly) we originally suggested. People used TiM in various ways, in groups or in pairs, and inside and outside the service user's place of residence. For service users, it turned out important to use TiM in the presence of someone who took the lead, but who was supportive, made appointments, and helped suggest/choose activities. Results additionally suggest that people may abstain from using TiM because they initially had trouble to understand how to use TiM. Some people described their first impression of TiM as complicated, although once using it, almost everyone, including the professionals, found TiM understandable and enjoyable. The introduction event to acquaint people with TiM seemed to lower the barrier for the usage of TiM and helped people understand TiM. The introduction even also stimulated role patterns that deviated from the traditional role patterns, underlining the role of context in which TiM is offered. Upon using TiM, TiM pairs varied with regard to the amount of personal information that they exchanged. This was the case for both service users as well as mental health professionals and may be a matter of personal preference. Effects that were noticed by some participants particularly referred to the quality of the relationship between service users and professionals. Most people experienced that they had gotten closer, and there was more equality than before. One TiM pair used TiM to get acquainted with one another, which worked really well for them. Furthermore, we observed that TiM activated some service users. They demonstrated an increased interest to perform some new activities more often and took more initiative according to the professionals. Questions regarding identity were difficult to answer for most service users; most people did not notice changes. One person indicated to reflect more on himself/herself, whereas another person experienced to learn something new about himself/herself.

The results of the pilot study suggest that TiM may be a useful tool for peer support workers, as it fits well with their role. However, professionals indicated to expect a beneficial effect if other colleagues would use TiM as well, as they could see the benefit for the service users. However, they also expected barriers in this regard, given the many tasks already expected from nurses and caretakers, as well as the belief that an intervention such as TiM was not considered part of their professional profile. The implementation process of TiM thus requires continued attention within mental health teams. It was suggested that coupling of TiM to specific situations (e.g., intake procedure, new case manager) might facilitate implementation. However, as suggested by the service users, using TiM will not be suitable for all service users and thus should remain optional and up to the user.

Both with respect to the UCD development process and the evaluation of TiM, several discussion points can be raised. During the development process, the goal was to create a highly usable intervention, given the importance of usability for the implementation process [e.g., (64, 76)] and given the availability of many effective, but hardly used treatments (74, 75). An important factor in this regard was flexibility, as more flexible interventions tend to be better implementable (77). The importance of flexibility of an intervention is confirmed by the results of the focus group meeting with peer support workers, relatives, and psychiatric nurses in the design phase. In all focus groups, the necessity to adapt to the uniqueness of the individual was underlined. Moreover, the importance of accounting for individual differences in the process of treatment is at the very basis of recovery-oriented practice (17). The final product of the UCD process, TiM, contains high levels of flexibility. Although people are recommended to use TiM biweekly, they can alternate the frequency depending on their own preferences; the pilot study confirms that people indeed differ in their preferences regarding frequency. In addition, TiM includes an element of choice both in the selection of the activity and the manner in which the activity is executed. The pilot study indeed demonstrated variability in the use of TiM (pairs vs. groups), and choices regarding exact nature and location of activities were variable.

The current study confirmed the importance of minimizing the complexity of the intervention, to ensure usability and thus implementability (64). The iterative UCD process revealed the initial complexity of TiM and allowed us to further fine-tune and adapt the intervention. Nevertheless, despite the finding that the final product was perceived understandable and intuitive to all except one user in the pilot, initially a number of people initially believed TiM to be too complex. Although internalized stigma may have (partially) caused this experience (85), it does confirm the importance of the factor of complexity, as well as the importance of prototyping, testing, and redesigning.

When an intervention is found effective, this may facilitate the implementation success of an intervention (64). Although the effectiveness of TiM cannot be evaluated with the current data, the expectation of effectiveness of TiM that some service users and mental health workers expressed stimulated them to use or recommend TiM. In addition, some users reported to experience beneficial effects of the intervention. Interestingly, while the aim of TiM was to stimulate identity development in order to establish personal recovery, the most noticeable effects concerned the improved relationship with the TiM partner and activation of the service users. This may be due to the timely process of rebuilding a multidimensional identity (86), for which the duration of the pilot study may have been too short. Alternatively, changes in the relationship between TiM partners may be more noticeable and concrete, relative to changes in identity. However, it is also possible that changes in the relationship represent a first effect of identity development. Indeed, literature suggests that intergroup identity, which is an important part of self-identity, is something that often arises from a social context (18, 19). The equality that some people experienced as they progressed with the intervention may, in due time, impact the intergroup identity of the services users. In addition, newly gained experiences and roles, as a result of the employed activities, may contribute to the process of rebuilding this intergroup identity and contribute to establishing a sense of purpose. This latter point is particularly relevant for the current target population, people with SMI with both cognitive and communication challenges (24). Difficulties with self-reflection have been described for people with schizophrenia in general (23, 87, 88), and these may be even more substantial in this subgroup of service users. It is possible that changes in identity were too subtle to notice with the current measurements.

STRENGTHS AND WEAKNESSES

Because of the relatively small sample size as well as the fact that not all participants used TiM, we may not have reached data saturation and thus may have missed opinions about TiM. This is something that we need to consider upon the continued UCD process in fine tuning TiM. Furthermore, we run the risk of a selection bias, as people were approached at the introduction event. For some service users, participating in an event like this may have been out of their comfort zone. Additionally, participants volunteered to participate in the study. Possibly people who were unwilling to participate had different opinions regarding the intervention. Although we attempted to involve family members in the implementation process, this was not successful. This may be due to the fact that many service users have lost contact over time with their families, and where there still is contact, people may not always be open to getting involved in the (89). However, there was diversity in the group of included participants. In addition, we included both the perspectives of service users and mental health professionals, which increases diversity of listed opinions. Furthermore, analysis and discussion were done by two authors who represent different perspectives, to improve thorough description and interpretation of the data. A strength of the study design was the uncontrolled usage of TiM (which is typically highly controlled in randomized controlled trials), which gave us a more realistic idea about the usage and implementation of TiM in clinical practice. An important lesson is that, while the UCD process will have substantially improve usability (and thus implementability), we still encountered implementation difficulties. For example, despite involvement of mental health nurses in the UCD process, many mental health nurses indicated that they had no time to use TiM. However, as one professional noted, some mental health workers did not consider TiM part of their task description, lowering the acceptability of TiM for these stakeholders. This observation may also represent a more general difficulty among mental health workers to shift from a symptom-oriented toward recovery-oriented practice. For now, interventions with the focus upon identity development and sense of purpose may be best allocated to peer support workers, who are specifically trained in this recovery-oriented perspective, or occupational therapists, who are involved in supporting service users in establishing different roles in life. Finally, although we developed TiM with a focus upon nonverbal communication, the measurements in the pilot were largely verbal. Upon this point, further research into the development of nonverbal measurement instruments is needed, to be equipped for studying the topic of identity in people with cognitive and communicative impairments.

With respect to the design of TiM we believe that improvements could still be made, particularly regarding the amount of available activities, the nonverbal nature of TiM design, and options for adaptability and personalization. Importantly, these drawbacks may be partly associated with the physical nature of the current design. Exploring the options for digitalization of TiM may be worthwhile in the continued UCD process. A digital interface facilitates sharing experiences with family members or others, and it would increase accessibility for a larger group of people because physical materials are not required. Furthermore, future endeavors may include extending TiM to other target population, who may experience similar struggles with self-identity and sense of purpose (e.g., people with traumatic brain injury or other life-changing physical or mental conditions). The major advantage of a UCD process is that it is circular, which enables us to take the input from the development process and the evaluation study as described in this article into account and use it for the development of an improved (digital) version of TiM in the future. A final strength of the study is that we were able to demonstrate that the process of participating in the UCD process itself contributed to the process of recovery in some service users. People indicated that they rediscovered their ability to help others with their input, a new meaningful role. As one service user put it: “finally somebody asked me to use my brain again.” Although not all service users will be interested or are able to contribute to these kinds of processes, the value of their contribution often remains unrecognized by many, or their capabilities may be underestimated as a result of stigma. Overall, we can conclude that UCD process is a useful and usable method for the development of a new psychosocial intervention, as well as increases the knowledge regarding factors that are important in supporting personal recovery for people with complex mental health needs.

DATA AVAILABILITY STATEMENT

The datasets generated for this article are not readily available because Participants did not consent to sharing their data with third parties. Requests to access the datasets should be directed to l.van.der.meer@rug.nl.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Medisch Ethische Toetsingscommissie UMCG. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

LvM was initiator and principle investigator of the study. TJ conducted the study in cooperation with HW, LvM, and CW. CW, JvW, and GP contributed to the project with additional scientific and clinical input to the UCD process. EvS conducted the qualitative pilot and data analysis in cooperation with LvM and TJ. LvM and EvS drafted a first version of the manuscript. All authors contributed to the article and approved the submitted version.

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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.2021.635514/full#supplementary-material

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A Systematic Review of the Characteristics and Efficacy of Recovery Training for Mental Health Staff: Implications for Supported Accommodation Services

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Evidence suggests a link between recovery-oriented practise and service user outcomes in supported accommodation settings. Current clinical guidelines recommend recovery training for supported accommodation staff, however evidence relating to the effectiveness of this type of training is unclear. This review aimed to describe and compare the characteristics and efficacy of existing recovery training packages for mental health staff. The appropriateness and applicability of the interventions was considered in relation to UK supported accommodation services. Initial search processes returned 830 papers. After duplicate removal, inclusion and exclusion criteria were applied to 489 papers, leaving a final sample of seven papers. Data were reviewed using a narrative synthesis approach. The reviewed papers showed variation in the aims, frequency, and duration of the training interventions, although all included content consistent with the five-domains of the CHIME model. All interventions used direct, in-person teaching, and prioritised interactive, experiential learning, however a number were limited by the absence of feedback, the use of one-off, rather than repeated/follow-up sessions, and a reliance on classroom-based, rather than *in-vivo*, training. There was limited evidence to suggest a consistent effect of training on staff or service user outcomes, and there was no clear association between the delivery and design characteristics of the interventions and reported outcomes. In considering the development of recovery training for supported accommodation staff, little guidance can be taken from the reviewed literature. Any training package must be developed with consideration of the unique contextual and organisational characteristics of these services. The authors recommend viewing training as one component of a broader goal of service transformation.

Keywords: supported accommodation, supported housing, recovery, rehabilitation, staff development, training, systematic review

INTRODUCTION

The concept of personal recovery has been established as a central policy focus for mental health services in developed countries. In line with this goal, significant investment has been made to transform services; recovery-orientation, at the service level, seeks to maximise patient autonomy and empowerment, facilitate social and community integration, and build genuine collaborative relationships between providers and service users (1). Structural factors, such as organisational culture, budgets, and leadership, have been shown to influence the recovery orientation of services (2), however research suggests ongoing confusion amongst frontline staff regarding what recovery is and how it should be facilitated (3). Staff training has been shown to influence recovery-related attitudes and knowledge (4), however the impact on service users outcomes is less clear (5).

Operating as community-based services, and staffed by non-clinical workers, mental health supported accommodation services are uniquely placed to support service users' recovery. Although definitions vary, the term supported accommodation typically describes three distinct service types: *Residential care:* time-unlimited, accommodation-based support to service users with high needs, with 24-h staffing and communal facilities; *Supported housing:* tenancies in shared or individual self-contained apartments, with staff based onsite up to 24-h per day; and, *Floating outreach* services: time-limited, visiting support to higher-functioning service users, living in self-contained, individual tenancies. Using the Simple Taxonomy for Supported Accommodation (STAX-SA), Residential care represents a Type 1 service, Supported housing a Type 2 or 3 service, and Floating outreach a Type 4 service (6). While, in the UK, recovery training for supported accommodation staff does exist, it is typically delivered in-house, using non-standardised, non-evidence-based materials. With emerging evidence suggesting a link between recovery-oriented practise within these settings and positive service user outcomes, such as successful progress to more independent (less supported) accommodation (7), interventions designed to support recovery-oriented practise must be considered a priority. Training for staff is regularly proposed as potential method of achieving this aim. Recent policy statements advocate for an urgent investment in staff training in these settings (8), and newly published NICE guidelines (9) recommend that training emphasise recovery principles, ensuring that supported accommodation staff work with a recovery-orientated approach. These positions are mirrored by researchers; as stated by Brunt et al. (10) "*Staff training, with a focus on recovery… is needed to improve the quality of care in these housing facilities*" (p. 705). It is essential, however, that, prior to the development (or adaptation) of any formalised recovery training packages for use in into theses settings, the available evidence is assessed.

A number of systematic reviews have evaluated recovery-focused interventions for mental health service users [e.g., (11)] and the nature of recovery-orientated practise [e.g., (12)], however, only recently have authors attempted to the synthesise the evidence under-pinning programmes that aim to support staff to work in a recovery-oriented manner. Jackson-Blott et al. (13) conducted a systematic review of quantitative studies (including uncontrolled and non-randomised studies) examining the effects of recovery-oriented training programs for mental health professionals; the review identified eligible 17 studies, and analysed findings using a narrative synthesis methodology. The authors highlighted methodological weaknesses of the studies (e.g., pre-post designs, limited follow-up), and variation in training characteristics across the programs, which limited their ability to draw firm conclusions regarding efficacy. The data indicated that recovery-oriented training has the potential to improve staff knowledge, attitudes and skills, in the immediate term, however there was little evidence to support longer-term maintenance, and, notably, limited evidence demonstrating an effect on service user outcomes.

The current review will attempt to extend and expand upon these findings in a number of ways. First, it will include only randomised controlled studies, thus minimising the effects of error and bias, providing a clearer indication of the efficacy of recovery-oriented training packages. Second, the review will evaluate the design and delivery characteristics of interventions from included studies against established evidence-based training methods. Finally, the review will consider the synthesised findings in relation to UK supported accommodation services, thus addressing calls for the identification/adoption of evidence-based training approaches within these settings. Specifically, this review seeks to address the following research question/s: "What is the effect of staff recovery training on service user outcomes? Is there a relationship between program characteristics and efficacy?" To address these questions, the review will: (1). Describe the content, structure and delivery methods of evaluated recovery training programs; (2). Synthesise the available evidence, in relation to service user self-reported recovery and staff recovery knowledge and behaviours; (3). Examine the relationship between training program characteristics and efficacy, and; (4). Consider these findings in relation to UK supported accommodation services.

MATERIALS AND METHODS

This review was prospectively registered with Prospero (CRD42019133559). There were no major changes between the registered protocol and completed review.

Inclusion and Exclusion Criteria

Population

Any study utilising a sample of mental health staff, working in either inpatient or community settings with individuals with severe mental illness, were included. Samples could include either clinical staff (involved in the direct provision of diagnoses and/or treatment; e.g., nurses, clinical psychologists, and psychiatrists) or non-clinical staff (support service users, but do not provide diagnoses or treatment; e.g., support workers and healthcare assistants). Training interventions targeting mental health service users, students, carers, or primary care staff were excluded.

Recovery Training (Intervention)

Descriptions of personal recovery typically rely on the following definition by Anthony (14): "*Recovery is a deeply personal, unique process of changing one's attitudes, values, feelings, goals, skills, and/or roles. It is a way of living a satisfying, hopeful, and contributing life even within the limitations caused by illness*" (p. 527). Due the idiosyncratic nature of personal recovery, operationalising the definition has been challenging; recovery-based practise typically refers to staff practise that supports the personal recovery of service users. To avoid the definitional issues that are prevalent in this field, only training interventions that were explicitly described as "recovery" training, and aimed to effect change in staff recovery knowledge, orientation or practise, were included.

Comparator

No comparator-focused exclusion criteria were used.

Outcomes

As the purpose of staff recovery training is to improve facilitate and support personal recovery, service user, self-reported recovery was selected as the primary outcome of interest. The review also considered the following secondary outcomes: staff recovery knowledge, staff recovery practise, service user symptoms and service user functioning.

Study Type

The current review included randomised controlled trials, including cluster-randomised and stepped-wedge trials, assessing the efficacy of recovery training programs for mental health staff, published in English. Only trials published after 1990 were included, as personal recovery, as a concept, was only formalised after this date. No country-based limitations were imposed.

Search Strategy

An electronic database search was conducted in April 2019. A search strategy was designed according to the PICOS structure of the review. MeSH/thesaurus terms, such as "*Mental Illness*," "*Staff*," (P) "*Training*," "*Education, Continuing*" (I), "*Mental Health Recovery*" (O), "*Trial,*" (S) were combined with free-text searches, using terms such as "*Teaching*," "*Education*," "*Training*," "*Skills*," "*Continuing professional development*." The search strategy was applied to the following databases: MEDLINE (OVID), EMBASE (OVID) PsychInfo (OVID), CINAHL Plus (EBSCO), IBSS (ProQuest), and Cochrane Library. Limits relating to age (18+) and date (>1990) were applied. See **Supplementary Files** for full search strategy. Additional, potentially relevant papers were identified by reviewing reference lists of key papers.

The initial database and search results were collated, and duplicates removed; two reviewers (PM and CDL) then applied the inclusion/exclusion criteria to a random sample of the returns (10%; $n = 49$) to ensure fidelity to the screening procedure. There were no discrepancies between inclusion/exclusion decisions of the raters, indicating a reliable screening process.

Data Extraction

A data extraction form was created, reflecting the aims of the review. The following information was recorded from each article:

- Paper characteristics: Title; Year; Journal; Country
- Study design: Population; Setting; Recruitment methods; Aim; Design; Sampling technique; Sample size/s; Sample demographics
- Experimental groups: Intervention description; Control condition;
- Recovery: Adherence to the theoretical basis of personal recovery was evaluated by examining training content with reference to the five domains of the CHIME model (15). Scores were based on a simple binary, indicating whether training content reflected each of the five domains: present vs. not present. Score (X/5).
- Training characteristics: A comprehensive, integrative review, published by Bluestone et al. (16), identified a range of in-service training design and delivery characteristics that were associated with improved learning outcomes. The findings of this study were adapted into a scorecard to provide a simple evaluation the characteristics of the included training programs: Learner engagement (passive vs. interactive); Feedback (feedback provided vs. no feedback provided); Frequency (delivered once vs. repeated delivery/follow-up sessions); Setting (classroom vs. *in-vivo*). Score (X/4).
- Outcomes: Measures; Time points; Time points reported; Results; Response rate; Unit of analysis; Statistical methods; Weighted results
- Overview: Strengths; Limitations; Conclusions.

Quality Assessment

Quality of the included studies was assessed by the lead author (PM) using Cochrane's revised risk-of-bias tool for randomised trials [RoB2; (17)]. The tool assists the reviewer to evaluate available study information, relevant to bias, across five domains; Randomisation process; Deviations from intended interventions; Missing outcome data; Outcome measurement, and; Selection of the reported result. Based on assessments within each domain, an overall risk of bias rating is provided: "Low risk of bias," "High risk of bias," and "Some concerns."

Data Synthesis

A meta-analysis of pooled mean differences in the primary outcome was initially intended, however the low number of returns, and relative heterogeneity of included studies, in terms of intervention characteristics, made this approach unsuitable. As such, a narrative synthesis approach, informed by published guidelines (18) was used. Broadly, the method is composed of four elements: (1). Developing a theoretical model of how the interventions work, why and for whom; (2). Developing a preliminary synthesis; (3). Exploring relationships in the data, and; (4). Assessing the robustness of the synthesis product. In line with this approach, risk of bias ratings were used to support interpretation of reported data, rather than to formally weight findings or to exclude particular studies.

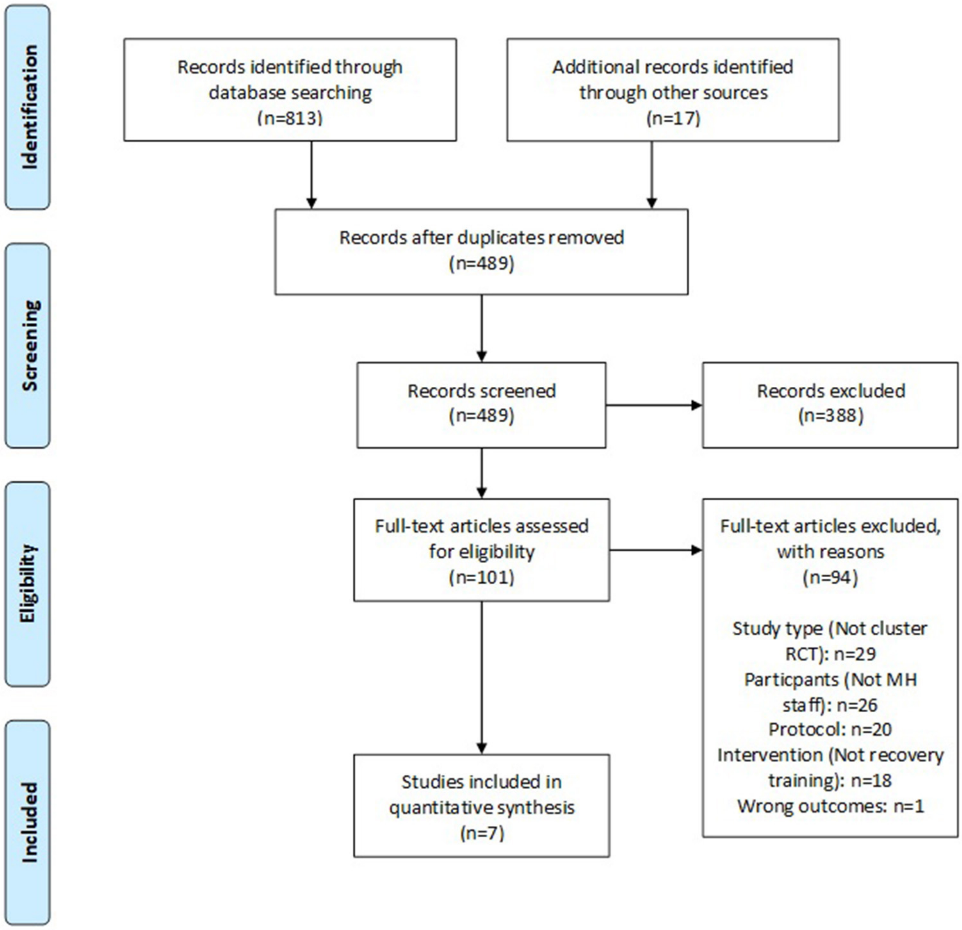

FIGURE 1 | PRISMA diagram.

RESULTS

Descriptives

Initial returns comprised 813 papers from database searches and 17 from additional searches. After duplicate removal, inclusion and exclusion criteria were applied to 489 papers, leaving a final sample of seven papers. A PRISMA diagram is presented in **Figure 1**.

The retained papers varied broadly in terms of country, settings, service types and samples. Three were derived from work in the Netherlands [$n = 3$; (19–21)], while the remaining papers were from Hong Kong [$n = 1$; (22)], Australia [$n = 1$; (23)], Israel [$n = 1$; (24)], and England [$n = 1$; (5)]. Training programs were most commonly delivered in community ($n = 6$), rather than inpatient, settings, with samples comprised clinical staff ($n = 3$) or combined clinical and non-clinical staff ($n = 4$). No training was delivered exclusively to non-clinical staff groups. The majority of papers were based on cluster-randomised trials, with two papers based on stepped-wedge designs. Follow-up periods varied according to outcome, and ranged from simple pre-post measurement (22) to 2 year follow-up (23). Details of the included studies, including quality assessment ratings, are presented in **Table 1**.

Characteristics of Recovery Training

A table providing a summary of the training program characteristics, according to the adapted scorecard domains is presented in **Table 2**. The scorecard was based on the following evidence-based design and delivery techniques identified by Bluestone et al. (16): (1). A delivery method that prioritises learner engagement and stimulation, rather relying on passive transfer of knowledge (*Learner engagement*); (2). Provision of targeted and individualised feedback to the learner (*Feedback*) (3). Ongoing exposure to material, through repeated training or follow-up sessions (*Frequency*), and (4). *In-vivo*, or clinically integrated, teaching to allow for practise within the work environment (*Setting*).

Aims of the Training Programmes

Although all training programs self-identified as "recovery" interventions, or comprised of recovery-oriented components, the stated aims varied. These were largely split between those that aimed to improve outcomes for service users, and those

TABLE 1 | Details of included studies.

Study	Country	Design	Setting	Population	Total sample	Outcome/s*	Assessment	RoB2 rating
Bitter et al. (19)	Netherlands	Cluster RCT	Sheltered and supported housing	Social workers; nurses	14 teams/*N* = 631 SUs	SU: Recovery SU: Functioning	Mental Health Recovery Measure (MHRM; (25)) Social Functioning Scale (SFS; Birchwood et al. (26))	Low risk of bias
Bitter et al. (20)	Netherlands	Cluster RCT	Sheltered and supported housing	Social workers; nurses	14 teams/*N* = 631 SUs	Staff: Knowledge	Recovery Knowledge Inventory (RKI; Bedregal et al. (27))	Low risk of bias
Mak et al. (22)	Hong Kong	RCT	Community based services	Non-governmental "mental health service providers"	*N* = 111	Staff: Knowledge	Recovery Knowledge Inventory (RKI; Bedregal et al. (27))	Some concerns
Meadows et al. (23)	Australia	Stepped-wedge cluster RCT	Community based services	Staff from various public and community MH services	*N* = 942	SU: Recovery Staff: Knowledge	Questionnaire about the Process of Recovery (QPR; (28)) Recovery Knowledge Inventory (RKI; Meehan and Glover, (29))	Low risk of bias
Pollard et al. (24)	Israel	RCT	Inpatient units	Staff in acute and chronic inpatient units	*N* = 54	Staff: Knowledge	Practitioners' Beliefs, Goals, and Practises in Psychiatric Rehabilitation Questionnaire (PBGPPR; Casper et al. (30))	Some concerns
Slade et al. (5)	England	Cluster RCT	Community mental health teams	Multidisciplinary CMHT staff	27 teams/*N* = 403 SUs	SU: Recovery Staff: Knowledge Staff: Practise SU: Symptoms SU: Functioning	Questionnaire about the Process of Recovery (QPR; (28)) Recovery Knowledge Inventory (RKI; Meehan and Glover, (29)) Recovery Practise Scale Brief Psychiatric Rating Scale (BPRS; Overall and Gorham, (31)) Global Assessment of Functioning Scale (GAF; APA, 2013)	Low risk of bias
Wilrycx et al. (21)	Netherlands	Stepped-wedge RCT	Mental health network (inpatient and outpatient services)	Combined clinical and non-clinical staff	*N* = 210	Staff: Knowledge	Recovery Knowledge Inventory (RKI; Bedregal et al. (27))	Some concerns

Only outcomes examined in the current review study are listed.

TABLE 2 | Training design and delivery characteristics of the included studies [scorecard adapted from (16)].

Study	Learner engagement (Passive vs. interactive)	Feedback (Provided vs. not provided)	Frequency (Delivered once vs. repeated delivery/follow-up)	Setting (Classroom vs. *in-vivo*)	Score
Bitter et al. (19)	Interactive Delivered in person; Direct instruction by trainers; Sessions are participatory, including both theory and "on-the-job" training	Feedback Provided as part of "training on-the-job" and coaching sessions	Repeated Seven sessions; follow-up coaching provided after training completed	Both Combination of "theory meetings" and "training on-the-job"	**4/4**
Bitter et al. (20)	As above	As above	As above	As above	**4/4**
Mak et al. (22)	Interactive Delivered in person, with a single video presentation; Combination of didactic teaching, interactive games, discussion, quiz; Includes service user/carer presentation	Unclear Unclear if feedback provided as part of training	Delivered once Two, three-hour sessions; delivered once; no follow-up sessions	Classroom-based Classroom-based psychoeducation; no *in-vivo* training provided	**1/4**
Meadows et al. (23)	Interactive Delivered in-person, by various trainers, including clinicians and "consumer academics"; Coaching sessions were experiential in nature; Training described as "Active learning sessions"	Feedback Provided as part of coaching	Unclear Unclear if follow-up telephone support and booster sessions included (as provided in REFOCUS trial)	Unclear Unclear if *in-vivo* element included	**2/4**
Pollard et al. (24)	Interactive Delivered in person, with single video presentation; Combination of lectures, group discussions, service user/carer presentations and site visits	Unclear Unclear if feedback is provided as part of training	Delivered once Six sessions and six site visits; delivered once; no follow-up sessions	Classroom-based Includes community visits, but no active, *in-vivo* training provided	**1/4**
Slade et al. (5)	Interactive Delivered in-person, by various trainers, including professionals and ex-service users; Participatory training sessions; Reflective group sessions	Feedback Provided as part of direct instruction and reflective group sessions	Repeated Multiple sessions, with follow-up telephone support; Booster sessions; Reflective group session; Structured supervision	Unclear Unclear if *in-vivo* element included	**3/4**
Wilrycx et al. (21)	Interactive Delivered in person, by expert by experience, and rehabilitation professional; Highly interactive; Group discussions; Group exercises; Homework assigned	Unclear Unclear if feedback is provided as part of training	Delivered once Two, two-day sessions; delivered once; no follow-up sessions	Classroom-based Classroom-based; no *in-vivo* training provided	**1/4**

that aimed to change the beliefs/attitudes/behaviours of staff. The CARe methodology aimed to "*to support a client in his/her recovery and to improve his/her quality of life, (through) realising goals and wishes; handling vulnerability; and improving the quality of the client's social environment*" [(19), p. 2]. Both the REFOCUS (5) and the REFOCUS-PULSAR interventions aimed to "*promote recovery through changes in the skills, knowledge, behaviour, and values of staff and their relationships with consumers*" [(19), p. 104]. The intervention assessed by Wilrycx et al. (21) aimed to "*to create and promote a new culture toward recovery from serious mental illness*" by changing treatment and relationships between providers and service users. The program assessed by Mak et al. (22) aimed to "*promote recovery knowledge and attitudes*" amongst mental health staff, while Pollard et al. (24) examined an intervention designed to improve "*staff attitudes and knowledge regarding psychiatric rehabilitation and recovery.*"

Duration/Frequency

The examined recovery training programs varied in terms of duration and frequency. The psychoeducation program assessed by Mak et al. (22) consisted of 2, 3-h sessions (6 h total). The remaining programs ranged from two, 2-day sessions (∼16 h total) (21) to seven meetings, including three full-day theory meetings and four half-day "training on-the job" sessions (∼40 h total), and follow-up coaching sessions every 4–6 weeks (20).

Model of Delivery

All training interventions utilised a combination of didactic methods and experiential learning approaches, including classroom-based lectures, workshops, quizzes, supervision/coaching sessions, community visits, structured dialogue with service users, and feedback. The majority of interventions had training content delivered, in part, by service users/carers.

Content and Learning Outcomes

All reviewed training programs contained content that reflected the five domains of the CHIME model (15); Connectedness, Hope, Identity, Meaning, and Empowerment. Though varying in their focus, all training programs, either directly or indirectly, sought to effect change

TABLE 3 | Training content of the included studies*.

Study	Recovery knowledge	Attitudes toward recovery	Staff skills	Recovery-supporting behaviours	Staff-service user relationship
Bitter et al. (19)	Theoretical principles of the CARe methodology (Recovery; Presence; Strengths-orientation Social participation; Resources)	*No explicit emphasis on modifying attitudes*	Explicit instruction in the CARe methodology (Relationship building; Strengths assessment; Goal identification; The "recovery worksheet"; Supporting goal attainment)	Explicit instruction in the CARe methodology (Relationship building; Strengths assessment; Goal identification; The "recovery worksheet"; Supporting goal attainment)	Partnership building Importance of the support relationship Safety and equality within the support relationship Importance of frequent contact
Bitter et al. (20)	As above	As above	As above	As above	As above
Mak et al. (22)	Aspects of recovery "Medical and rehabilitation models of recovery" vs. "consumer-oriented recovery" Best practise Challenges to the implementation of recovery-oriented care	*No explicit emphasis on modifying attitudes*	*No explicit emphasis on skill development*	How to apply recovery "elements" in various scenarios	The relationship, and the role of carers, family members, and support staff
Meadows et al. (23)	Recovery-related knowledge (Meaning; Clinical vs. personal recovery; Stigma etc)	Recovery supporting beliefs and values Identity beyond illness Use of pro-recovery language	Coaching skills Care planning Identify and utilise patient strengths and available resources "Life maps"	Importance of patient preferences in care planning Supporting patient goals Empowering patients	Emphasis on recovery-promoting relationships Understanding patient values "Coaching for recovery"
Pollard et al. (24)	Understanding client-centred and strengths-based approaches Evidence-based rehabilitation practises Awareness of community services The "recovery mission"	Increase hope Belief in patient autonomy Sensitivity to service user/carer experience	Strategies for increasing motivation	Inclusion of consumers and families at all stages	"Listening to the consumer" as a strategy Avoiding paternalism
Slade et al. (5)	Recovery-related knowledge (meaning; clinical vs. personal recovery; stigma etc)	Recovery supporting beliefs and values Identity beyond illness Use of pro-recovery language	Coaching skills Care planning Identify and utilise patient strengths and available resources "Life maps"	Importance of patient preferences in care planning Supporting patient goals Empowering patients	Emphasis on recovery-promoting relationships Understanding patient values "Coaching for recovery"
Wilrycx et al. (21)	Treatment, rehabilitation, and recovery Recovery processes Barriers to recovery Characteristics of recovery support	Beliefs about recovery The importance of service user autonomy and empowerment Workers reflecting on their own recovery processes	Methods to "stimulate and facilitate recovery within the client" Contributing to, rather than directing, client's journey	How to apply principles to practise Professional as a support for the client's "own storey"	Professional as a support for the client's "own storey"

**These are examples only, and may not provide a complete summary of all training components.*

TABLE 4 | Summary of effectiveness data, across outcome variables (group x time effects, unless otherwise indicated).

	Service user: **Self-reported recovery**	**Staff:** **Recovery knowledge**	**Staff:** **Recovery practice**	**Service user:** **Symptoms**	**Service user:** **Functioning**
Bitter et al. (19)	Not significant $\chi^2 = 1.28$; $p = 0.53$	–	–	–	Not significant $\chi^2 = 4.64$; $p = 0.10$
Bitter et al. (20)	–	Not significant $\chi^2 = 4.19$; $p = 0.12$	–	–	–
Mak et al. (22)	–	**Significant** $F = 35.19$; $p < 0.001$	–	–	–
Meadows et al. (23)	**Significant (S1)** ADif = 3.7; $p = 0.023$	–	Not significant ADif = 2.0; $p = 0.65$	–	Not significant ADif = 0.9; $p = 0.80$
Pollard et al. (24)	–	**Significant** $F = 25.7$; $p < 0.001$	–	–	–
Slade et al. (5)	Not significant $b = 0.63$; $p = 0.55$	Not significant $\chi^2 = 2.95$; $p = 0.23$	Not significant $b = -2.43$; $p = 0.41$	Not significant $b = 1.85$; $p = 0.15$	**Significant** $b = 5.90$; $p < 0.0001$
Wilrycx et al. (21)	–	Not significant $\chi^2 = 1.64$; $p = 0.65$	–	–	–

across one or more of the following five areas; recovery-related knowledge, staff attitudes toward recovery, staff skills, recovery-oriented behaviour, and staff-service user relationships. See **Table 3** for content summaries for the included studies.

All assessed programs included an emphasis on improving staff understandings of recovery, recovery principles, and the fundamentals of recovery-oriented support. Some studies explicitly sought to influence staff attitudes, beliefs, and values; targets included pro-recovery values (5, 23), beliefs about recovery (21), hope, and belief in "patient" autonomy (24). In others, the intention of transforming staff attitudes was implied through the training content [e.g., (19, 20)]; for example, presentations by carers and service users about their recovery journey modelled service user/carer involvement, a key component of recovery orientated practise (22). The focus on skill-development varied across studies. Mak et al. (22) evaluated a psychoeducation intervention, thus skill-development was not an emphasis. The remaining studies aimed to develop staff skills in relation to specific support interventions, such as assessing service users' strengths, life mapping and care planning (5, 19, 20, 23) and the style of engagement with service users, such as coaching and motivation-enhancement (5, 23, 24). Similarly, the relative emphasis on staff behaviour change and recovery promoting behaviours varied across studies; training programs targeted social inclusion, patient preferences and empowerment (5, 23, 24), and provided guidance on how to support goal attainment (19, 20) and apply recovery-principles more generally (21, 22). Reflecting the socio-environmental nature of personal recovery, staff-service user relationships were also a prominent target of the training interventions; all programs addressed this aspect of practise.

Outcomes

A summary of findings, stratified by outcome, is presented in **Table 4**.

Service-User Self-Reported Recovery

Of the seven included papers, three examined service-user, self-reported recovery as an outcome of the intervention. Results were mixed: one of the three trials reported positive results. Bitter et al. (19) assessed change in personal recovery, as measured by the Mental Health Recovery Measure [MHRM; (25)], at baseline and 10- and 20-months post intervention. Using a linear mixed modelling approach, no significant time by intervention effect was identified ($X^2 = 1.28$; $p = 0.53$). This non-significant finding was replicated when the model controlled for age, gender, having a partner, symptoms, amount of support, recovery-promoting relationship, and recovery knowledge of the professionals. In the REFOCUS trial, Slade et al. (5) used the Questionnaire about the Process of Recovery [QPR; (28)] to examine change in personal recovery. Between baseline and 1-year follow-up, analysis showed no significant effect of REFOCUS on overall recovery (total QPR score): $b = 0.63$ ($p = 0.55$; 95%C = −1.41 to 2.67). However, the REFOCUS-PULASR trial (23) demonstrated a significant effect on QPR scores (ADif = 3.7; $p = 0.023$).

Staff Recovery Knowledge

Staff recovery knowledge was the most commonly assessed outcome, with five of seven papers examining changes in this variable over time. As with personal recovery, the findings were mixed. Non-significant effects were reported by Bitter et al. (20) ($\chi^2 = 4.19$; $p = 0.12$), Slade et al. (5) ($\chi^2 = 2.95$; $p = 0{\cdot}23$), and Wilrycx et al. (21) ($\chi^2 = 1.64$; $p = 0.65$), over follow-up periods ranging from 6 to 20 months. Both Mak et al. (22) and Pollard et al. (24) demonstrated a significant improvement in staff recovery knowledge, using the Recovery Knowledge Inventory (RKI; $F = 35.19$; $p < 0.001$) and the Beliefs, Goals, and Practises in Psychiatric Rehabilitation Questionnaire (PBGPPR; $F = 25.7$; $p < 0.001$), respectively. It must be noted, however, that, in both studies, this staff recovery knowledge was assessed before and immediately after the training, thus the long-term stability of these changes was not examined.

Staff Recovery Practise

Two of the included papers considered the effect of the training intervention on staff recovery practise. Meadows et al. (23) used the Importance of Services in Recovery questionnaire [INSPIRE; (32)], while Slade et al. (5) used the Recovery Practise Scale, a non-standardised instrument, to measure practise change over time. Neither study demonstrated a significant effect of the training intervention on staff recovery practise (ADif $= 2.0$; $p = 0.65$) ($b = -2.43$; $p = 0.41$).

Service User Symptoms

Only one study examined the effect of recovery training on service user symptoms over time. Slade et al. (5) found no significant effect on this variable between baseline and 1-year follow-up; $b = 1.85$; $p = 0.15$.

Service User Functioning

Of the seven included papers, three considered service user functioning as an outcome variable. As with all previously reported findings, the results were mixed. Using the Social Functioning Scale (SFS), Bitter et al. (19) found no significant difference in service user functioning between baseline and 20-month follow up; $\chi^2 = 4.64$; $p = 0.10$. Similarly, Meadows et al. (23) found no change in Global Assessment of Functioning (GAF); ADif $= 0.9$; $p = 0.80$. Conversely, in the REFOCUS trial, Slade et al. (5) demonstrated a significant effect of training on service user GAF scores over time, $b = 5.90$ ($p < 0.0001$; 95%C $= 2.61$–9.18).

Associations Between Training Characteristics, Content, and Efficacy

The synthesised findings showed no clear relationship between training design and delivery characteristics, as measured by the adapted scorecard, training content, and reported outcomes.

DISCUSSION

Summary of Findings

This systematic review aimed to describe and compare the characteristics and efficacy of existing recovery training packages for mental health staff. The included papers showed variation in the aims, frequency and duration of the training interventions evaluated although they all included content consistent with the five-domains of the CHIME model (15). Design and delivery characteristics of the training programs were evaluated using an adapted scorecard, reflecting evidence-based training methods (16). All studies used direct, in-person teaching, and prioritised interactive, experiential learning, however a number were limited by the absence of feedback, the use of one-off, rather than repeated/follow-up sessions, and a reliance on classroom-based, rather than *in-vivo*, training.

The efficacy of the interventions was inconsistent. Only three studies examined service user recovery as an outcome, and, of those that did, only one (23) demonstrated a significant effect. Of the five studies that examined staff recovery knowledge as an outcome, only two demonstrated a significant effect; however, for both, this was assessed using a simple pre-post analysis, and provides limited evidence of longer-term maintenance. There was no clear association between the delivery and design characteristics of the interventions and outcomes. Overall, these data provide limited evidence for the efficacy of recovery-focused training interventions, particularly in relation to service user outcomes. These findings are largely consistent with those of a recent review by Jackson-Blott et al. (13), although, likely due to the inclusion of uncontrolled/non-randomised studies, the authors found more a uniform influence of training on staff knowledge, attitudes and competencies.

Explanations for Findings

These somewhat disappointing findings are not uncommon in the mental health field; staff training interventions frequently fail to demonstrate an effect on staff behaviours and service user outcomes [e.g., (33)]. In attempting to explain their results, authors posited a range of potential explanations, including staff factors (readiness to change, age, existing use of recovery-orientation), service-user factors (degree of illness acuity), structural factors (budget cuts, and service reorganisation), and study-design factors (outcome measure sensitivity and relative brevity of follow-up period).

An explanation that was consistently identified in the reviewed studies related to challenges around implementation. Staff turnover, low morale, poor leadership, and limited "buy-in" were linked to poor fidelity and outcomes. The role of implementation in influencing outcomes was perhaps best demonstrated by the *post-ho*c analyses in the REFOCUS study (5). When a distinction was made between high participation teams, low participation teams and controls (based on attendance and engagement with the training), analyses demonstrated that high staff participation, but not low staff participation, was associated with higher service user self-reported recovery and staff recovery practise. Implementation science has produced a vast array of models describing factors that should be considered when embedding new ways of working [e.g., (34–36)]; it is beyond the scope of the current review to examine these in detail, however it is important to emphasise that staff, organisational and ecological analyses, identifying barriers and facilitators of change, prior to the implementation of new ways of working (such as recovery training), are essential. An a priori examination of potential implementation issues may allow researchers to identify, and manage, potential issues prior to the commencement of training-focused studies, thus ensuring more consistent outcomes. Parallel or nested implementation studies that evaluate implementation outcomes, such as acceptability or appropriateness, are also recommended (see (37) [REFOCUS]). Separating intervention outcomes from implementation outcomes provides additional insights regarding non-significant findings, and can assist in distinguishing between an ineffective intervention, and an effective intervention that had been implemented unsuccessfully (38).

Another important, though less frequently discussed, reason for our findings is the possibility that the training interventions themselves cannot address broader factors that may influence service user recovery. Typically, the change model for recovery training interventions suggests that by improving staff practise, service user experience is enhanced, which in turn supports service user recovery. However, this model is likely too simplistic, and overlooks the fact that staff practise may, in fact have a limited impact on the recovery processes of individual service users. Various social determinants of health, commonly experienced by individuals with SMI, such as unemployment, poverty, isolation, and stigma (39) are likely to have an important impact on service user recovery, beyond staff practise. Indeed, common critiques of the recovery concept focus on the individualistic/neo-liberal conceptualisation of personal recovery, and its inadequacy in addressing the social, cultural, and systematic obstacles faced by marginalised groups [see (40, 41)].

Recovery Training for UK Supported Accommodation

With a growing evidence-base highlighting the association between recovery-oriented practise and service-user outcomes, a pressing questions remains: How do we equip the supported accommodation workforce to deliver this form of support? Training interventions that aim to develop the skills, knowledge, behaviour, and values of staff appear to be a logical approach to addressing this issue, however the findings of the current review highlight the significant challenges currently faced. To maximise the potential benefit of any recovery training developed for use within this sector, attention must be paid to content, characteristics and delivery of the intervention, alongside a detailed consideration of the context and composition of these services.

Considerations: Training Content, Characteristics, and Delivery

Although debate still exists regarding the exact nature of personal recovery, how it to be understood, how it should be reflected in service design, and how recovery-processes can be supported by staff, carers, and families, there is a striking consistency in the literature regarding its central tenets (see (42) for a recent review). The CHIME model (15), emphasising concepts of connectedness, hope, identity, meaning and empowerment is widely endorsed, and, reassuringly, all training programs included in this review include content that reflect the model. However, as described, the training programs did not consistently lead to desired outcomes, suggesting that the inclusion of these recovery-specific elements may not be sufficient to generate benefits for service users. This observation must be considered when developing any recovery training intervention for use in supported accommodation settings; looking beyond the content, to consider the characteristics and delivery methods of an intervention, is imperative.

In a recent integrative review of 37 systematic reviews and 32 RCTS, Bluestone et al. (16) identified a range of evidence-based training approaches that supported the development of knowledge, skills and practise of health staff. *In-vivo* approaches and learner feedback were found to be effective, while passive methods, such as lectures and self-directed reading, had little impact on outcomes. Interventions that were repeated, rather than delivered within a single session, were more effective. These findings are similar to those reported by Lyon et al. (43), however, the authors observe that it is "*unlikely that the use of traditional workshop models or any single strategy will result in success*" (p. 248). Indeed, combining delivery approaches appears to have a cumulative impact on the effectiveness of staff training. Although design and delivery characteristics of the training programs included in this review did not appear to be associated with outcomes, the most commonly neglected (or unreported) training components were provision of feedback to learners, repeated delivery/follow-up sessions and *in-vivo* training. Researchers should ensure that future interventions attempt to include these elements, and may consider the inclusion of additional behavioural components shown to improve the quality of care in health settings, such as regular supervision (44). In the absence of strong efficacy data, researchers must rely on the broader evidence to inform the design and delivery of new approaches.

Considerations: Resources

The impact of austerity and budget cut-backs on mental health services has been well-documented (45, 46). The supported accommodation sector in the UK has not been immune to this shift; recent data has highlighted a progressive reduction in funding for support costs in supported accommodation over time (47). Budget restrictions inevitably impact how services are delivered and the development opportunities made available for staff. In a recent report on skills, training and employability issues in the mental health sector, "*limited budget for training*" and "*limited time for training*" were cited by providers as the primary reasons for skills deficits amongst staff (48). As stated by a provider: "*with reduced funding, zero hour contracts and lack of staff time it is becoming a luxury to provide anything more than mandatory training*" [(49), p. 18].

These resource constraints must be taken into account when considering recovery training for supported accommodation staff. The majority of the training approaches reviewed in this paper include multiple group sessions and follow-up support; it is unclear whether these time and cost burdens could be tolerated by supported accommodation providers. As noted above, however, for training to be effective, extended/repeated contact must be prioritised (16). In developing recovery training for this sector, researchers must manage the tension between resource limitations and evidence-based practise; creative approaches to training delivery, utilising low-cost methods, such as peer-coaching or computer-delivered interventions, could be considered (50).

Considerations: Workforce

A recent systematic review of the views of mental health staff highlighted the persistence of symptom-focused and biomedical conceptualisations of recovery amongst clinically trained staff (51). Due to their non-clinical background, supported accommodation staff may, therefore, be uniquely positioned to deliver recovery-oriented care; indeed, supported accommodation services in the UK demonstrate higher recovery-based practise scores when compared to inpatient rehabilitation units (as measured by the Quality Indicator for Rehabilitative Care) (52, 53). Support provision within supported accommodation settings is typically psychosocially-focused (54), with clinical tasks, such as medication management and symptom monitoring, managed by statutory services; thus, the core remit of these services shares a natural overlap with recovery-supporting practise.

Despite these potential strengths, a number of workforce issues, pertinent to the supported accommodation sector, should also be considered. Staff turnover in these settings is a significant problem. Though accurate and precise data is difficult to access, trends in the broader adult social care sector are likely applicable to supported accommodation settings. Recent statistics suggest that the staff turnover rate in the English adult social care sector was 30.8% in 2018/19, equating to 440,000 people leaving their jobs (55), with younger workers and those paid less more likely to leave their role. Turnover represents a challenge for providers, whereby training may be viewed as a "waste" if staff are deemed likely to leave. Training packages must therefore be flexible and designed in such a way that new staff are able to access evidence-based materials quickly, in order to develop or enhance relevant skills.

Research repeatedly highlights that many "soft skills" that are essential to recovery-oriented practise, such as empathy and effective listening, are considerably more difficult to teach than "hard skills," such as care planning (48). The centrality of these "soft skills" to recovery-based practise suggests that recruitment of appropriate candidates, who already possess many of these proficiencies, rather than using training to embed or develop these skills, may be an appropriate way to ensure that supported accommodation staff have the prerequisite attitudes and values to deliver recovery-oriented support. These observations also have implications for training development. Although attitude change was a common intervention target amongst the reviewed papers, it is possible that training staff in simplified, task, or skill-focused interventions that can support service user recovery, such as shared decision making (56), may be more beneficial for service user outcomes than explicit attempts to modify values. This is particularly relevant in a sector where brief training interventions will likely be necessary, due to the resource limitations described above.

Recovery Training for Supported Accommodation: Future Research

With the continued emphasis on personal recovery, supported accommodation services have an obligation to deliver evidence-based, recovery-oriented support. As described, however, the sector is facing significant pressures which directly impact its ability to deliver high-quality services; financial restrictions, increasing service-user demand, and high turnover and poor remuneration for staff are some of the difficulties currently faced. A challenge for researchers, therefore, is to develop recovery training interventions that are evaluable and take account of these barriers, whilst still maintaining a focus on comprehensiveness, rigour, and feasibility. One resource-conscious approach may be to build on the strengths of the workforce, aiming to optimise existing, psychosocially focused practises, rather than attempting to introduce new ways of working. As reported above, however, the success of such an intervention will likely depend on the effective integration of a range of evidence-based design and delivery methods.

It must be acknowledged however, that a singular emphasis on recovery training in these settings is unlikely to lead to the desired outcome of improved service user recovery. There is a wealth of literature demonstrating that staff training alone does not consistently result in improved practise (57); essential elements, beyond staff training, include a context that supports the desired behaviour change, visible organisational support, active and engaged leadership, and the redesign of workflows to "*build new practise into the fabric of daily work*" [(58), p. 361]. Indeed, some of the more robust training packages reviewed here have attempted to address these factors by including multi-level interventions that target frontline staff, supervision procedures and team culture; this approach reflects best-practise, and should be a consideration for any intervention developed for supported accommodation services. More broadly, the sector may consider adopting Quality Improvement (QI) methods to improve practise and service user outcomes. QI takes a systematic and data-driven approach to "problem-solving"; solutions to problems are identified, tested and implemented at a local level, with an awareness of the complexities of the immediate environment (59). These methods are becoming more common in statutory mental health services in the UK (60), and could be incorporated into, or delivered alongside, novel recovery training programmes within the supported accommodation sector.

Ultimately, in order to support service user recovery, staff behaviour change should be seen as a component of the broader goal of service transformation, rather than the sole driver; training for the supported accommodation workforce will be an essential element, but must be part of an array of interventions designed to support the full spectrum of recovery needs of individuals. A large body of research has highlighted factors that may influence service user recovery in supported accommodation settings, beyond staff competencies, such as the physical design and restrictiveness of the environment, level of integration with other mental health services, privacy, security, service-user relationships and loneliness (61–63). These elements may represent meaningful targets when undertaking a service redesign that aims to improve recovery outcomes for service users. Although quantitative evaluations of service reorganisations are uncommon, a number of case studies and service models exist that can guide and support providers in enacting such systemic change [e.g., (64)].

STRENGTHS AND LIMITATIONS

The current review has a number of strengths. We developed a thorough search strategy, including only randomised designs, and applied it to a large number of databases; these decisions increase confidence in the comprehensiveness of the search itself, and the quality of the included studies. We used an adapted scorecard, based on current quantitative evidence, to assess the design and delivery characteristics of the included interventions, allowing us to identify elements of the training programs that may have impacted their efficacy. To avoid definitional issues, we opted to include only studies that evaluated interventions that were identified by the authors as "recovery" training. It is possible that by using this approach, we may have overlooked relevant training interventions that did not use the term "recovery" to describe the nature or focus of the programme. Relatedly, due to this decision, the current review did not include training interventions that target specific aspects of personal recovery (for example, social inclusion [Connectedness]). In interpreting the findings of the review, it is important to highlight that none of the included studies delivered training to an exclusively non-clinical staff group; as supported accommodation services in the UK are staffed by non-clinical staff, data from the included studies may not be fully generalisable to these settings. in addition, although we assume that many of the observations reported above (particularly relating to resource and workforce issues) will be applicable to supported accommodation services internationally, it must be acknowledged that housing models and approaches to service organisation vary between countries; the conclusions reported here were drawn specifically relation to the UK supported accommodation context. Finally, although we are confident in the thoroughness of the search strategy, the strategy itself was developed without input from a specialist librarian and may not be fully comprehensive.

CONCLUSION

Currently, the evidence-base supporting recovery training for mental health staff is underdeveloped and inconsistent. The current review, examining the characteristics and effectiveness of these interventions, found limited evidence to suggest an impact on service user and staff outcomes; no clear conclusions can be drawn from the available data. This highlights a clear gulf between aspirations of embedding the concept of recovery within mental health policies and the realities of operationalising recovery in training and staff practise; recovery-oriented services, as a goal of mental health systems, is commendable, however these findings raise questions regarding how we best equip the workforce to deliver this form of support.

In considering the development of recovery training materials for supported accommodation staff, little guidance can be taken from the reviewed literature; as described, there is no clear association between recovery training content, duration and delivery method, and outcomes. Any training, therefore, must be informed by learning theories and evidence relating to training effectiveness taken from other fields, and developed with consideration to the unique contextual and organisational characteristics of these services, and of the individuals, they support.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/**Supplementary Material**, further inquiries can be directed to the corresponding author/s.

AUTHOR CONTRIBUTIONS

PM, HK, and BL-E designed the study. PM undertook searches, extracted and analysed the data, and drafted the manuscript. CD-L assisted with screening and critically commented on draughts of the manuscript. HK and BL-E supervised the study, contributed to interpretation of the data, and critically commented on draughts of the manuscript. All authors read and approved the final manuscript.

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyt.2021.624081/full#supplementary-material

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