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# Digital dating abuse: a Grounded Theory study

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**Introduction:** Over the past decade, research on digital dating abuse (DDA) has expanded considerably, resulting in the development of multiple constructs and measurement instruments. Despite this progress, a key theoretical question remains unresolved: how should the behavioral multidimensionality of DDA be conceptualized? Moreover, little research has examined how DDA manifests in long-distance romantic relationships, where partners rely almost exclusively on information and communication technologies to interact and maintain their relationship.

**Methods:** In response to calls for more in-depth qualitative inquiry, we employed a constructivist Grounded Theory approach to develop a model accounting for the behavioral multidimensionality of DDA. Specifically, we collected and analyzed 1434 online posts published in Reddit (*r/LongDistance*) between January 2021 and June 2022, in which individuals described their experiences as perpetrators and/or victims of DDA.

**Results:** Findings indicate that DDA can be conceptualized as a multidimensional behavioral phenomenon encompassing two overarching dimensions: covert DDA and overt DDA. Covert DDA includes behaviors such as major changes in communication, deception, and passive control, which may be normalized within romantic relationships yet can function as precursors to more explicit forms of abuse. Overt DDA encompasses active control, hostility, and sexual coercion. The analysis revealed a continuum between covert and overt forms of DDA.

**Discussion:** This study contributes to the literature by extending conceptualizations of DDA to the context of LDRRs and by emphasizing the analytical and clinical relevance of covert abusive behaviors.

### KEYWORDS

digital dating abuse, Grounded Theory, intimate partner abuse, long-distance romantic relationships, qualitative research

## 1 Introduction

From a technological standpoint, the last two decades have been marked by significant advancements. These advancements were primarily driven by the widespread availability of internet access (e.g., wireless internet, third and fourth-generation cellular technologies) and the proliferation of mobile devices (e.g., laptops, smartphones) (Lehr and McKnight, 2003). Furthermore, interpersonal communication has changed considerably, as these advancements enabled the development of new electronic channels (e.g., Messenger, Snapchat, WhatsApp) (Antonucci et al., 2017), which have facilitated communication between individuals regardless of geographic location (Hampton et al., 2017). During the COVID-19 pandemic, the use of technological devices, messaging applications, and social media increased significantly due to social distancing measures and national lockdowns (De et al., 2020). This trend can be explained by the role technology plays in allowing individuals to maintain interpersonal relationships,

particularly romantic relationships (Genoe et al., 2018; Morey et al., 2013). In such relationships, digital communication can contribute to maintaining and nurturing the existing bond (Billedo et al., 2020). This is particularly evident in long-distance romantic relationships (LDRR), where geographical separation limits face-to-face interaction (Janning et al., 2017), positioning information and communication technologies as central mechanisms for relationship maintenance (Tseng, 2016). Nonetheless, over the past decade, research on digital dating abuse (DDA) has shown that the use of technology within romantic relationships may facilitate the adoption of abusive behaviors. For example, frequently sending messages to check on a partner can escalate into controlling and possessive behavior (Reed et al., 2016).

## 1.1 Long-distance romantic relationships

Numerous criteria and definitions have been proposed to characterize LDRRs. For example, some studies operationalize long-distance relationships using geographic distance, defining them according to the number of kilometers separating partners (Carpenter and Knox, 1986; Holt and Stone, 1988; Schwebel et al., 1992; Lydon et al., 1997; Knox et al., 2002). Other studies consider criteria such as living in different countries (Amelia, 2020), living in different cities (Helgeson, 1994), or the amount of time and distance required to travel to be together (Knox et al., 2002). One potential limitation of these criteria is that the same individual could be classified as being in an LDRR or a geographically close relationship (GCR) across different studies (Goldsmith and Byers, 2018). Alternatively, some studies allow participants to self-define their romantic relationships by asking whether they consider themselves to be in an LDRR (Eichler, 2014; Stafford, 2005). In the present study, we follow Stafford's (2005) rationale and conceptualize an LDRR as a romantic relationship in which two individuals maintain intimacy despite geographical constraints that physically separate them. Furthermore, classification as being in an LDRR is based on the individual's self-identification regarding their romantic relationship (Stafford, 2005).

Previous studies have reported that moving to college, work relocation, military deployment, and incarceration may be the main reasons individuals enter an LDRR (Holmes, 2006; Stafford et al., 2006; Murphy, 2018; Ellis and Ledbetter, 2015; Kelmer et al., 2013). The emergence of the internet, social networks, and smartphones has significantly transformed people's romantic lives and substantially increased the prevalence of online dating (Kwok and Wescott, 2020). Hence, LDRRs may be increasingly common, particularly among young adults and college students (Goldsmith and Byers, 2018). A recent study found that approximately one-third of romantically involved college students were in an LDRR (Beckmeyer et al., 2023). LDRRs distinguish themselves from geographic close romantic relationships (GCR) because they involve less face-to-face time, limited physical closeness and intimacy and the challenges in staying connected (Aylor, 2003). Another difference concerns the communication patterns couples use to maintain the relationship. Research shows that frequent and responsive text messaging predicts greater satisfaction in LDRRs and enhances intimacy and emotional connection (Holtzman et al., 2021). Because technology is constantly evolving, these couples tend to rely on digital communication channels to help satisfy their needs and feel closer despite geographical distance. Numerous digital communication options are available, including cell phones, audio and video chats, text messaging, and instant messaging, all of which serve as important tools for staying connected daily and for maintaining

long-distance romantic relationships (Gutzmann, 2018). Drawing on recent findings, individuals in an LDRR tend to prefer communication methods that allow for immediate feedback and interaction with their partner (e.g., phone calls, text messages, and video calls) (Belus et al., 2018). Lastly, despite these technological advancements, it is important to note that individuals in LDRRs face unique challenges, including time zone differences, limited face-to-face interactions, and reduced sexual intimacy (Hammonds et al., 2020; McRae and Cobb, 2020).

## 1.2 Digital dating abuse

Digital dating abuse (DDA) is defined as “a pattern of behaviors that control, pressure, or threaten a dating partner using a cell phone or the internet” (Reed et al., 2016) and encompasses the behavioral dimensions of digital sexual coercion (e.g., pressuring a partner to sext), digital direct aggression (e.g., sending threatening messages to a partner), and digital monitoring/control (e.g., monitoring a partner's whereabouts and activities) (Reed et al., 2017). DDA is often conceptualized as a triadic phenomenon composed of: (1) a digital element (encompassing all possible means of digital communication); (2) a dating element (behaviors occurring in a current or former intimate relationship); and (3) an abusive element (behavioral patterns that harm an intimate partner) (Reed et al., 2016).

As highlighted by previous systematic reviews, the lack of a homogeneous construct may be the main limitation when comparing results across different studies (Brown and Hegarty, 2018; Fernet et al., 2019; Rocha-Silva et al., 2021). Consequently, prevalence rates for the perpetration of DDA tend to vary considerably between studies (Brown and Hegarty, 2018; Muñoz-Fernández and Sánchez-Jiménez, 2020). For example, one systematic review found that perpetration rates ranged from 8.1 to 93.7% (Caridade et al., 2019). More recently, a meta-analysis verified prevalence rates of 44.6% for perpetration and 43.4% for victimization (Li et al., 2023). In contrast another study found higher prevalence rates for perpetration and victimization (Ferrareso and Kim, 2024). These inconsistencies can also be found in results regarding sex/gender differences since some studies have reported no evidence of sex/gender differences in victimization (Borrajó et al., 2015; Brown et al., 2021; Hancock et al., 2017; Ferrareso and Kim, 2024; Lachapelle et al., 2022; Powell and Flynn, 2023; Kim and Ferrareso, 2023; Reed et al., 2021; Smith et al., 2018; Smith-Darden et al., 2017; Takezawa et al., 2023; Wright, 2015; Wolford-Clevenger et al., 2016), while other studies have reported greater victimization of feminine sex/gender (Dick et al., 2014; Felmler and Faris, 2016; Eriksson et al., 2023; Hellevik and Øverlien, 2016; Rodríguez-de Arriba et al., 2022; Semenza, 2019; Storey and Pina, 2025; Yahner et al., 2015; Zweig et al., 2013, 2014) or greater victimization of the masculine sex/gender (Bennett et al., 2011; Cutbush et al., 2018; Durán and Martínez-Pecino, 2015; García-Sánchez et al., 2017; Montero-Fernández et al., 2022; Hinduja and Patchin, 2020). A possible explanation for these discrepancies may lie in the instruments used by authors to measure this phenomenon (Brown and Hegarty, 2018). It is important to note that most of the studies cited focus on experiences of DDA in GCRs. In LDRRs, this phenomenon remains considerably understudied. For example, one study excluded participants who self-reported being in an LDRR (Duerksen and Woodin, 2019). Nonetheless, it is important to acknowledge that DDA can also occur in “atypical” romantic configurations, as some LDRR studies have shown that individuals in LDRRs may also engage in behaviors associated with DDA (e.g., monitoring).

Compared with quantitative literature, the qualitative literature on DDA remains limited. The analysis of a recent scoping review highlights this issue since during the literature assessment, the authors identified 58 qualitative articles for full-text screening (Afrouz and Vassos, 2024). Due to the review's specific research questions and inclusion criteria (e.g., studies with participants aged 10–24), only 23 of these articles were ultimately included in the analysis. Consequently, it is not possible to determine the full extent of qualitative research published in this field. Nevertheless, the volume of qualitative studies remains markedly smaller than that of quantitative studies, which contrasts with previous recommendations emphasizing the need for in-depth qualitative research (Brem et al., 2021; Dekeseredy et al., 2019; Douglas et al., 2019; Fernet et al., 2023; Monteiro et al., 2023; Reed et al., 2021; Van Ouytsel et al., 2019; Villora et al., 2019). Considering these recommendations, this study employs the Grounded Theory (GT) methodology to analyze and understand how individuals in LDRR experience DDA, with the aim of developing a theoretical model related to the behavioral multidimensionality of DDA.

## 2 Method

### 2.1 Study design

Grounded Theory (GT) can be defined as a qualitative method with systematic and specific procedures for collecting and analyzing data (Charmaz, 2014). The central aim of this methodology is to facilitate the development of a theoretical explanation for the phenomenon under study (Bryant and Charmaz, 2007). The relevance of developing a GT is related to two conditions: (1) the absence of explanatory theories on DDA, and (2) the fact that research has not yet fully captured the behavioral multidimensionality of DDA, making new theoretical insights necessary for developing a theory that helps explain the phenomenon. Given that the theoretical literature can be characterized as stagnant, the development of a GT is particularly appropriate, as it allows the collection and analysis of data that reflect the perspectives and perceptions of the individuals involved in the issue (Backman and Kyngäs, 1999). The basis of our study aligns with the constructivist GT (Charmaz, 2014). Charmaz (2014) defined GT as “a method of conducting qualitative research that focuses on creating conceptual frameworks or theories through building inductive analysis from the data.” GT methods can be characterized as “systematic, yet flexible guidelines for collecting and analyzing qualitative data to construct theories grounded in the data” (Charmaz, 2014). Given that most DDA research tends to be quantitative, we considered it relevant to study this phenomenon following the principles of constructivist GT, as no pre-existing theoretical framework exists. Compared with other qualitative methods, GT distinguishes itself because it encompasses several specific principles. The primary principle is that the process of data collection and analysis is not straightforward but is instead conceptualized as a circular process that may involve multiple phases of data collection and analysis. This process concludes only when the collection of new data no longer provides additional insights or properties for the categories and subcategories (theoretical saturation). Regarding strategies of data analysis, GT also shares similarities with other qualitative methods. However, in GT the collection and analysis occur concurrently, and the process is neither linear nor sequential. The amount of data selected for analysis is determined not by availability but by saturation.

Moreover, in GT, due to the nature of theoretical sampling, the theory generated from the data guides decisions regarding what types of data should be collected subsequently. Briefly, the analysis process in GT involves labeling concepts, categorizing data, identifying core categories, examining relationships among categories, and generating a theory from these relationships. In contrast, qualitative content analysis comprises selecting the unit of analysis, categorizing data, and identifying themes derived from the categories (Cho and Lee, 2014).

During the early stages of the research, we conducted several preliminary semi-structured interviews with the sole purpose of exploring how individuals experience DDA. We interviewed eight individuals, four in LDRRs and four in GRRs. The analysis of these interviews proved instrumental in highlighting the possibility of distinct dynamics of DDA. In GRRs experiences of DDA often involved controlling and monitoring behaviors, with individuals frequently unaware that they were being monitored or controlled by their partner. In contrast, in LDRRs, experiences of DDA appeared to encompass a broader range of behavioral manifestations. Due to research constraints imposed by the COVID-19 pandemic at the beginning of the decade, and because the preliminary interviews underscored the need to further explore DDA within LDRRs, we decided to focus our data collection on individuals who were currently in, or had previously been in, LDRRs. This decision presented additional challenges, as we needed to identify appropriate contexts through which to reach this population. A review of the literature, specifically on online data collection (Jamnik and Lane, 2017; Shatz, 2017), suggested that one such context was Reddit.

Reddit is a website composed of different communities (subreddits) covering a wide range of topics (e.g., subreddits related to specific countries, particular television series, specific mental health issues, among many others). Within these subreddits, users who have created a personal account can interact with one another by creating posts (where they can share images, text, videos) or by commenting on and voting for content created by other users (Kumar et al., 2021). In the context of academic research, Reddit presents several notable advantages. First, the platform comprises more than 3.5 million subreddits and approximately 430 million active users. These figures represent a significant strength for data collection, as Reddit's structure enables researchers to effectively target, recruit, or access specific populations that may be difficult to reach in traditional research settings (Amaya et al., 2021). Moreover, depending on the strategy employed, substantial samples can be obtained within a relatively short period of time (Shatz, 2017). Finally, qualitative research using Reddit has highlighted its utility for investigating topics that are often sensitive or difficult to study (Mason and Singh, 2022). For example, prior studies have collected data on suicidal ideation during the COVID-19 pandemic (Slemon et al., 2021) and on men who experienced abuse in heterosexual intimate relationships (Sivagurunathan et al., 2021).

Given the wide range of topics covered on Reddit, the first step was to determine whether any subreddits focused specifically on DDA. Our initial search indicated that no subreddit was dedicated to this phenomenon. Consequently, we broadened the search to include subreddits related to romantic relationships. This search yielded a considerable number of relevant subreddits (e.g., *abusiverelationships*, *dating\_advice*, *narcabuse*, *relationshipadvice*). Following identification, we conducted an initial review of the content to assess whether the experiences shared by users were relevant to our research objectives. Over the course of approximately one week, all posts created daily by users were read, and the characteristics of the shared experiences were recorded. Analysis of

these subreddits revealed three key findings: (1) users regularly shared substantial accounts of abusive experiences; (2) users also reported experiences in which they had engaged in abusive behaviors themselves; and (3) posts tended to be detailed and descriptive, providing rich qualitative data. Although these factors supported the feasibility of the project, a limitation emerged: the identified subreddits encompassed both victimization and perpetration across a broad spectrum, with the majority of reported experiences involving face-to-face abuse rather than DDA specifically. Despite the identified limitation, a potential solution emerged with the identification of a subreddit dedicated to the dynamics of LDRR (r/LongDistance; <https://www.reddit.com/r/LongDistance>). The r/LongDistance community (“For couples who cannot be in the same room”) describes itself as a subreddit for and about individuals in long-distance relationships, aiming to provide support and advice to those navigating such relationships. Initial engagement with this subreddit revealed that, although many posts addressed general aspects of LDRR (e.g., suggestions for shared activities at a distance, accounts of closing the distance), a considerable number of daily posts referred specifically to experiences of DDA. During a one-month preliminary observation period (the timeframe established for initial assessment), 103 instances of DDA were identified. In sum, we considered that this subreddit would be an appropriate context to gather data that could help answer our research objectives.

## 2.2 Data collection

Data was collected from Reddit using the Pushshift API. The Pushshift API is a well-established platform that aggregates Reddit posts and comments, allowing researchers to efficiently access historical data, perform full-text searches, retrieve large datasets, and conduct aggregated analyses, facilitating systematic and large-scale data collection for research purposes (Baumgartner et al., 2020). Regarding our data collection strategy, we established a one-year sampling period, from 1 January to 31 December 2021. Using Pushshift, the data search process was relatively straightforward, as the research team only needed to establish the search queries (e.g., search by subreddit, search for posts, and search by timeframe) and copy and save the data from each individual post. Although we had established inclusion and exclusion criteria (Table 1), we did not compare the content of the posts with these criteria during this phase. The only triage required was for posts containing images or videos, as we analyzed only text-based content. At the end of the data collection process, we had gathered 4,966 posts.

After applying our inclusion and exclusion criteria to the 4,966 posts, we retained an initial sample of 1,206 posts. Specifically, 3,301 posts (66.47%) were excluded because they were unrelated to experiences of DDA, and 417 posts (8.39%) were excluded for the following

reasons: (1) the user mentioned being in a LDRR with a minor; (2) the user had deleted the post; or (3) the post length was fewer than ten lines. The criterion of excluding posts shorter than ten lines was established because some users shared experiences of DDA without providing sufficient contextual information for the reader to understand the situation. For example, posts such as “my bf left me on read for five days, and I do not know what to do” were excluded. Nonetheless, such posts are relatively uncommon, as users typically provide detailed contextual information about their experiences. Finally, during the theoretical sampling phase, we established a six-month sampling period, from 1 January to 30 June 2022, and collected 231 additional posts.

## 2.3 Participants

Regarding the participants, our sample was restricted to individuals who self-reported being or having been in a LDRR. Because the data were collected from user-generated content, it was not possible to obtain extensive demographic information. Nonetheless, as the targeted subreddit encourages users to mention their age and gender/sex when creating a post, we were able to collect some demographic data. The ages of the participants ranged from 18 to 53. Reporting the age brackets, the most prevalent was 20–29 ( $N = 544$ ), followed by 18–19 ( $N = 127$ ), 30–39 ( $N = 60$ ), 40–49 ( $N = 6$ ), and lastly 50–59 ( $N = 1$ ). It is important to mention that in 1437 posts only 738 (51.36%) individuals disclosed their age. Regarding gender/sex, 914 (63.60%) individuals self-identified as female, 521 (36.25%) individuals identified as male, and 2 (0.13%) individuals identified as non-binary. Regarding sexual orientation, 1,383 (96.24%) individuals reported being in a heterosexual romantic relationship, and 54 (3.76%) reported being in a same-sex relationship. Lastly, all participants reported that their romantic relationships began online. Accordingly, there were no cases of couples who started dating in person and later transitioned to a LDRR.

## 2.4 Ethics

The current research was submitted to and received ethical clearance from the authors’ institutional ethics committee (Faculdade de Psicologia e Ciências da Educação da Universidade do Porto, Ref. 2022/01-04). Given that online data collection presents several ethical challenges, we carefully reviewed multiple ethical considerations before seeking IRB approval. Because we collected and analyzed a large number of posts, obtaining informed consent from all participants was not feasible. Therefore, we followed the recommendations of the Association of Internet Researchers (AoIR) (Franzke et al., 2020) and sought informed consent only from participants whose posts we intended to quote. This issue is especially important when presenting qualitative disaggregated data (e.g., text excerpts), as researchers should consider that individuals may have expectations regarding the use of their user-generated content for secondary purposes. This consideration is particularly critical in studies involving vulnerable populations, who often hold protective beliefs about their data (Dym and Fiesler, 2020).

Regarding the principles of anonymity and pseudonymization, we followed general guidelines for qualitative studies. Any information that could potentially identify participants was altered or removed. In addition, we adhered to the AoIR recommendation (Franzke et al., 2020) that text excerpts should be modified to minimize the risk of being traced through search engines (e.g., Google). To further ensure this, we attempted to track the original posts by searching for the modified excerpts on search engines and Pushshift. When contacting

TABLE 1 Inclusion and exclusion criteria.

Category	Criteria
Inclusion criteria	<ul style="list-style-type: none"> <li>• Posts in which the user mentions adopting and/or experiencing behaviors that can be characterized as DDA in their LDRR.</li> <li>• The user’s account must be older than 3 months.</li> </ul>
Exclusion criteria	<ul style="list-style-type: none"> <li>• Posts unrelated to experiences of DDA in LDRR.</li> <li>• Posts in which the user mentions being aged 17 or younger.</li> <li>• Posts with a length inferior to 10 lines.</li> </ul>

participants, we asked whether they authorized us to modify their text excerpts to preserve anonymity and reduce traceability, and whether they were willing to review and approve the modifications.

Because data were collected via a Pushshift, we also considered how to handle user-deleted content, which is particularly relevant as Pushshift indexes posts in real-time, including those deleted by users. For example, a Redditor may write a post and delete it a week later. Although the post is removed from Reddit, it can remain indexed on Pushshift (Baumgartner et al., 2020). In our searches, we observed several posts that had been deleted from Reddit. Following previous research addressing this issue (Ravn et al., 2020), we decided not to collect indexed posts that had been deleted. Additionally, before beginning data analysis, we verified that the posts we had collected ( $n = 1,292$ ) were still available on both Pushshift and Reddit.

Lastly, because this research was conducted in the European Union, we adhered to the General Data Protection Regulation (GDPR). Under the GDPR, we were permitted to process these data for research purposes but were required to implement technical measures, such as pseudonymization, to uphold the principle of data minimization. To comply with GDPR standards, we applied pseudonymization practices and modified users' text excerpts to protect participants' identities. By employing these strategies, our research project remained fully aligned with GDPR requirements. Finally, the terms of service of Reddit (including r/LongDistance) do not prohibit the analysis of user-generated content for academic and scientific purposes.

## 2.5 Analytic procedure

In this GT study, we followed the constructivist analytical procedure (Charmaz, 2014), which encompasses three stages: (1) initial coding, (2) focused coding, and (3) theoretical coding (Charmaz, 2014). Although these stages are often presented sequentially, the GT analytical process is iterative and flexible.

During initial coding, researchers are expected to set aside preconceived ideas and focus on interpreting participants' perspectives while remaining open to new theoretical possibilities (Charmaz, 2014). In this phase, we coded the 1,206 initial Reddit posts. Given that most users tended to write short sentences and frequently reported multiple experiences of perpetration and/or victimization by DDA, we decided to code the data sentence by sentence to fully capture the individuals' experiences. While assigning codes, we remained as close as possible to the actions and processes described by participants. By the end of this phase, we had created 5,230 codes (e.g., "asking for space," "being angry," "having feelings for another person," "leaving a message on read," and "asking for more contact"). Since we were analyzing data from a specific group of individuals, we paid close attention to generating *in vivo* codes. These are terms directly used by participants that reflect shared understanding (e.g., participants often described their partner as "MIA"<sup>1</sup> when the partner did not respond for an extended period).

The second phase, focused coding, involves analyzing the initial codes to determine their adequacy while developing preliminary categories and subcategories of the data (Charmaz, 2014). This process is iterative, requiring constant comparison between codes and data to refine analytical insights. While initial codes are closely tied to

participants' discourse (implicit concepts), focused coding requires that codes be made explicit (Charmaz, 2014). Accordingly, we revisited the initial codes, identified those that provided analytical insights into our research objectives, and grouped them into categories and subcategories. Given the considerable amount of codes that were analyzed (5230), the practice of writing daily memos contributed to the development of these categories and subcategories. This practice also allowed us to note changes in subcategories, creating an "audit trail" of modifications whenever new insights emerged from the data. For example, writing memos on controlling behaviors helped identify the possibility of two distinct control categories (e.g., active control and passive control). Once commonly occurring categories were identified, the initial codes were merged into single categories. By the "end" of this phase we had merged the 5,230 initial codes into 19 categories and 279 subcategories.

Finally, theoretical coding serves to specify the relationships between the categories previously developed. In essence, these codes help conceptualize how the substantive codes are connected while advancing their analytical potential in a theoretical direction (Charmaz, 2014). This step allows researchers to enhance the rigor of their analysis and to clarify and refine their findings without imposing a predetermined framework on the data. In our study, theoretical coding helped us elucidate both the general context and the specific conditions related to experiences of DDA. It is also important to note that the phase of theoretical coding coincided with the phase of theoretical sampling. In practical terms, theoretical sampling occurs when the researcher identifies categories and/or subcategories that have not yet reached theoretical saturation or require further elaboration (Charmaz, 2014). In such cases, additional participants are recruited, with data collection specifically aimed at addressing gaps in the previously developed categories and/or subcategories. In our study, this involved returning to r/LongDistance to collect additional posts that could help develop underdeveloped categories and subcategories. We defined a six-month data collection period (1 January to 30 June 2022) and gathered all posts published by users during this timeframe. A coding grid of categories and subcategories requiring further development was then created to guide the screening process. Posts related to saturated categories (e.g., fighting about the frequency and quality of communication, pressuring to change interpersonal behaviors, monitoring social media activity) were excluded, as they did not provide additional insights. Consequently, we focused on collecting and analyzing posts pertaining to categories and subcategories that required further elaboration (e.g., threatening to self-harm, impersonation, sexual coercion). The theoretical sampling involved the inclusion of 231 additional posts. At the end of this process, the previously created categories and subcategories were further refined into 6 categories comprising 18 subcategories. As the collection of additional data no longer contributed to the identification of new properties, we considered theoretical saturation to have been reached. In GT, theoretical saturation is achieved when the concepts, categories, and relationships among the data have been fully identified and the emerging theory is complete (Hennink et al., 2017).

## 3 Results

Through our data analysis, we identified six categories: (1) major changes in communication; (2) deception; (3) hostility; (4) active control; (5) passive control; and (6) sexual coercion (Figure 1). The

<sup>1</sup> "MIA" stands for "missing in action." Participants used this term to describe situations in which their partner stopped responding for an unusually long period.

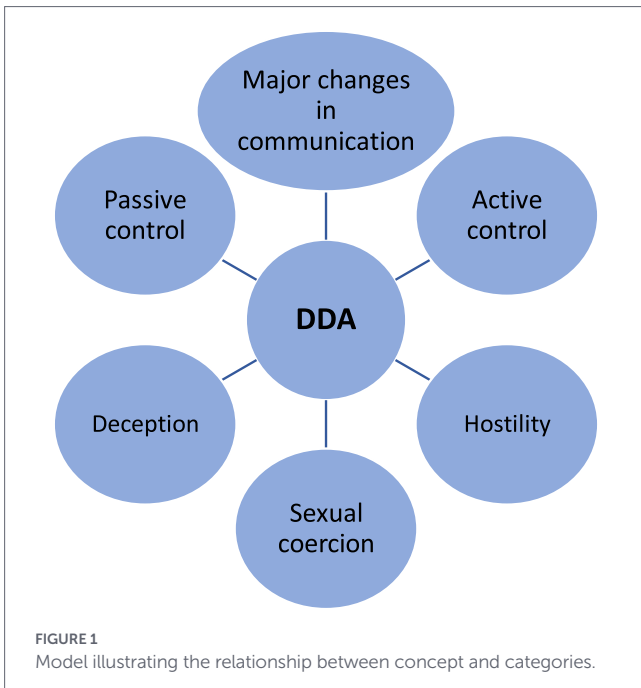


FIGURE 1 Model illustrating the relationship between concept and categories.

following sections present these categories and their respective subcategories.

### 3.1 Major changes in communication

Major changes in communication ( $n = 314$ ) refer to experiences in which an individual deliberately and drastically alters established patterns of daily communication with their partner without providing an explanation for such changes. Although variations in communication frequency do not necessarily constitute abusive behavior, these shifts were described as substantial and resulted in significant disruption of relational communication. Behaviors associated with major changes in communication included blocking and/or deleting instant messaging applications or social media accounts ( $n = 52$ ) (“*Last night we were on video call like usual...we went to sleep and that was the last I heard from him...it’s been one week, and it seems that he blocked me on every messaging app*” F, victim) and disappearing for unusual periods of time ( $n = 262$ ) (“*Last week we talked all day long...we were talking during her lunch break at work. Haven’t heard from her since. It’s been a week, and she just disappeared without saying anything*” M, victim).

When considering these two behaviors, it is important to note that they share a common characteristic: the perpetrator does not provide a justification for their actions (e.g., blocking their partner or ceasing communication for several days). Consequently, these behaviors tend to be ambiguous and emotionally distressing for victims, as they are unable to identify a plausible explanation for the sudden changes. Finally, these behaviors often occur when the perpetrator is contemplating ending the relationship. In such cases, they may function as a form of “soft breakup” characterized by gradual disengagement rather than explicit termination (“*it has been a month of torture... they disappeared and left me in the dark... I feel like ghosting hurts more than a breakup because I did not deserve a proper goodbye*” F, Victim).

### 3.2 Passive control

Passive control ( $n = 292$ ) refers to behaviors deliberately adopted by one individual with the aim of controlling their partner without the

partner’s knowledge. This dimension encompasses behaviors such as: (1) controlling geolocation; (2) controlling online status; (3) controlling social media activity; (4) intrusively logging into social media accounts; and (5) searching for online information. Before examining these behaviors in detail, it is important to emphasize a defining characteristic that distinguishes passive control from active control: passive control occurs without the victim’s awareness and can therefore be characterized as covert. In contrast, active control typically involves some degree of direct confrontation or interaction between perpetrator and victim. Rather than involving overt conflict, passive control functions as a mechanism through which the perpetrator gathers information that may subsequently facilitate the adoption of active control behaviors (e.g., initiating fights or exerting pressure).

Regarding the identified behaviors, controlling geolocation ( $n = 7$ ) refers to experiences in which an individual deliberately monitors their partner’s whereabouts without the partner’s knowledge (“*When she goes out I have this nagging feeling that something is not right, so I check her location...yesterday I saw that she was in a parking lot for at least an hour before going home*” M, perpetrator). Although these behaviors were relatively infrequent, they tended to occur primarily in relationships in which one partner maintained a highly active social life (e.g., frequently going out with friends).

Monitoring online status ( $n = 84$ ) refers to experiences in which an individual deliberately tracks their partner’s online activity indicators (e.g., “last seen” status) on messaging applications and/or social media platforms without the partner’s knowledge (“*It’s currently 5 a.m. for me but I woke up because I wanted to see if he is online, and he is... For the last couple of weeks, I set my alarm to wake early, and every time I check Discord he is always online*” F, perpetrator). Our analysis indicated that this behavior was often driven by the perpetrator’s expectations regarding the frequency and quality of digital communication within the relationship. For example, when a partner reduced the frequency of messaging, individuals frequently engaged in repeated monitoring of their partner’s online status in an attempt to “understand” the change or to determine whether their partner was interacting with others. Notably, these individuals appeared to hold the belief that, if their partner was online, communication with them should be prioritized.

Monitoring social media activity ( $n = 129$ ) refers to experiences in which an individual deliberately examines their partner’s social media accounts to review interactions such as comments, followers, and likes, often without the partner’s knowledge (“*I stopped stalking him a while ago because my mental health was awful... but today I was bored and checked his followers and noticed he is following someone new... I found the profile and it was a random girl... I checked all her pictures and found several likes of my boyfriend*” F, perpetrator). Regarding this behavior, it is important to note that feelings of relational insecurity (e.g., difficulty trusting a partner) often play a central role in its occurrence. In the context of LDRRs, one might argue that these relationships are inherently characterized by relational insecurity. However, our analysis suggests that the perception of insecurity tends to primarily stems from the perpetrator’s personal characteristics (e.g., paranoid ideation, attachment style) rather than from the nature of the LDRR itself.

Intrusively logging ( $n = 28$ ) refers to experiences in which an individual accesses their partner’s personal accounts without permission to review digital activities, such as likes history and private conversations (“*a month ago I came across a conversation where my partner was talking with his ex... I wanted to read the conversation but could not because there was a new message from his ex... after a couple of hours I*

checked it again and he had deleted the conversation” F, perpetrator). Lastly, intrusively searching for online information ( $n = 44$ ) refers to experiences in which an individual deliberately seeks information about their partner online (e.g., personal details, aspects of their personal life, or social media accounts not shared with them) (“Today, I do not know why, I tried to see if she had a dating profile... I created an account on Tinder, set my location to hers and after 7–8 swipes her dating profile appeared... I know it was a stupid thing to do... but we have been dating for almost a year and she has an active dating profile? I do not know what to do... if I confront her she will know that I made this account” M, perpetrator). This behavior is particularly noteworthy because it involves one individual gathering information about their partner without consent. For example, several participants reported spending time attempting to determine whether their partner used specific online dating applications (e.g., Tinder). In other cases, individuals closely examined their partner’s social media to learn about their life history, including previous intimate and interpersonal relationships. Although this behavior may appear unusual, in the context of LDRRs it can be understood as a strategy to mitigate the risk of being “catfished” or deliberately deceived. In some instances, this behavior served the purpose of verifying that the partner was genuine and truthful about their personal life.

### 3.3 Active control

Active control ( $n = 1,159$ ) refers to experiences in which an individual deliberately engages in negative and confrontational behaviors with the aim of actively coercing their partner. This dimension includes behaviors such as: (1) fighting; (2) pressuring; and (3) threatening. These behaviors contrast sharply with those of passive control. Furthermore, these behaviors can be understood as expressions of abusive power, as the perpetrator typically engages in them to enforce their personal needs.

Fighting ( $n = 416$ ) refers to experiences in which an individual actively engages in conflicts with their partner over issues that cause discomfort. These conflicts may arise for multiple reasons, including the frequency and quality of communication ( $n = 258$ ) (“These fights are getting quite frequent lately... it is always the same thing... when we fight she says that she is sorry and that she will start communicating more frequently... she actually tries to make an effort and starts calling me every day... but after a couple of days she goes back to doing the same thing... I’m getting fed up with this topic and her attitude... If she really wanted to change, she would not do the same thing all the time” M, perpetrator), interpersonal friendships ( $n = 43$ ) (“Our relationship deteriorated fast into constant fights... she was constantly jealous of me spending time with my friends... she even got mad because I spent some weekends with my family... It got to the point where I was walking into eggshells to not trigger another anxious meltdown” M, victim), real-life plans ( $n = 77$ ) (“When we started dating we decided that we would close the gap in 6 months... as you might have guessed, it never happened... it has been 1 year of constant fighting about it... it felt like every week we were on the verge of breaking up” F, perpetrator), personal habits ( $n = 3$ ) (“He already knows that it makes me uncomfortable when he drinks... if he wants to drink he must ask me... today we fought for hours because I found out he drank last night without telling me or asking me if he could” F, perpetrator), social media usage ( $n = 11$ ) (“I am pretty sensitive... So, if I saw that he liked another girl’s photo on Instagram it was only normal that I would start drama about it... yesterday we fought again because I saw that he liked a video from an

Instagram model... I will not take this kind of disrespect” F, perpetrator), and interpersonal suspicions ( $n = 24$ ) (“My boyfriend is still friends with his ex and we are constantly fighting about it because it makes me feel uncomfortable... he thinks my feelings are illogical since nothing is going to happen between them... Then why does she message him everyday when she knows that he is dating? Where are the boundaries?... Why send him Tik Tok videos?... My boyfriend said that those things are normal because they are friends... I feel disrespected because it seems that he is more preoccupied in maintaining that relationship than focusing on me... Our relationship is perfect but this topic is causing fights every single day... Why cannot he just block her?” F, perpetrator). Pressuring ( $n = 698$ ) refers to experiences in which an individual persistently attempts to impose their will on their partner, disregarding the partner’s needs and preferences. This behavior includes several specific manifestations: pressuring to communicate asynchronously ( $n = 264$ ) (“the only thing that I look forward are our night calls... if we do not call for a day I feel like the day was wasted... I always have to remind him when it’s time for our calls” F, perpetrator), pressuring to disclose the romantic relationship ( $n = 40$ ) (“Our relationship has an issue that constantly buggers me... up until a few days he lowkey did not want to tell his parents that we were dating... his excuse was that they are old school and do not believe that people can date without seeing each other... Eventually he did mention me to his dad but I feel that he did it just to shut me up... He still did not tell his mother that he is dating me... I know our relationship is between us but it hurts me that he avoids mentioning me... it is like he is ashamed of me” F, perpetrator), pressuring to share social media passwords ( $n = 15$ ), pressuring to close the distance ( $n = 125$ ) (“When I brought up about living together again he said that we could look for a place together next year... now the closing date has been pushed even forward. I said no and that I wanted to move out to live with him... after much discussion he still thinks it’s too early” F, perpetrator), and pressuring to change interpersonal behaviors ( $n = 254$ ) (“He said something like “this guy is going to be a problem for us, so what are you going to do about it? I do not want her in our life,” clearly asking me to distance myself from her... In 2 months, I removed every guy off my friends list and ended up with no one” F, victim). A key characteristic of pressuring involves consistently and frequently bringing up a topic that causes discomfort and insisting that the partner modify their behavior or attitude to reduce that discomfort. This behavior differs from fighting, as it does not entail active discussion or confrontation. Nonetheless, the frequency and intensity of pressuring can escalate into instances of fighting.

Lastly, the behavior of threatening ( $n = 45$ ) refers to experiences in which an individual purposefully threatens their partner to compel them to comply with a certain demand. From our analysis, we identified two types of threatening. The first consists of threatening to break up ( $n = 36$ ) (“our real-life distance never bothered her... but since I got this new job everything feels like an ultimatum... she is constantly nagging me about closing the distance... she said that if we do not find a solution by the end of the month she would break up with me” M, victim). These behaviors tended to occur when one individual could not cope with the prolonged uncertainty of the LDRR and threatened to end the relationship if their partner did not propose a solution to resolve that uncertainty (e.g., making genuine efforts to close the distance). The second type involves threatening to self-harm ( $n = 9$ ) (“After months of feeling disconnected I decided that I would break up with her... she cried a lot and threatened to kill herself if I left her... I tried to reason with her... and she just said that she is feeling suicidal and I am just making things worse... I hung up the call and she started

*sending me messages... she even sent me a photo with her arms and legs with cuts on them*" M, victim). Regarding this behavior, these experiences tended to occur exclusively when one of the individuals stated that they were contemplating a breakup.

### 3.4 Deception

Deception ( $n = 526$ ) refers to experiences in which an individual deliberately attempts to mislead or deceive their partner. Behaviors associated with deception include: (1) cheating; (2) impersonation; (3) instrumentalization; and (4) lying. Cheating ( $n = 137$ ) refers to experiences in which an individual engages in romantic infidelity. This behavior may occur in person ( $n = 110$ ) or online ( $n = 27$ ) ("*I found out my boyfriend has another girlfriend... and she's from my country too... not sure who he plans to visit first, but we started dating first*" F, victim).

Impersonation ( $n = 10$ ) refers to experiences in which an individual deliberately pretends to be someone else ("*Today I got a gut feeling so I decided that I had to test him to check if he was loyal or not... I bought a burner number and used someone else's picture and texted him pretending to be someone from his hometown... he did not answer at first but after one week he answered back... so I acted like I was a girl... he went along with the conversation and a couple of days later he started making sexual comments and even said that he wanted to meet up with me*" F, perpetrator).

Instrumentalization ( $n = 77$ ) refers to experiences in which an individual deliberately engages in a romantic relationship to obtain personal gain. These gains can be categorized as financial ( $n = 50$ ) ("*When we met, I sent her some money to try to help her family... Eventually, this started to become a problem because it seemed that I was paying for all her daily expenses. I decided to put an end to it, and she broke up with me*" M, victim), or sexual ( $n = 27$ ).

Lying ( $n = 302$ ) refers to experiences in which an individual deliberately and actively lies to their partner. Within this behavior, we identified multiple domains in which individuals tend to lie, such as providing false personal information or avoiding synchronous communication ("*One thing that I really hate is when people lie to me... recently my boyfriend has not been honest with the things that he says... he mainly lies to dodge our night time calls and sneak off to play video games... I want to spend time with him and he always comes up with a silly excuse about having work to do or being too tired... but in reality he is playing video games*" F, victim).

In the context of LDRRs, certain contextual aspects are particularly relevant. First, some instances of lying appear to serve the purpose of managing a partner's controlling behaviors. For example, some individuals may face restrictive partner demands (e.g., not wanting their partner to spend time alone with friends of the opposite gender or to go out at night). In these cases, individuals sometimes complied with their partner's requests, while in other instances they employed deceptive strategies (e.g., lying about speaking with someone else or going out) to create the appearance of compliance. In sum, lying in certain domains appears to function as a strategy to balance personal autonomy with maintaining the partner's "happiness."

### 3.5 Hostility

Hostility ( $n = 193$ ) refers to experiences in which an individual adopts a predominantly negative stance while interacting with their partner. This category includes two subtypes: (1) being aggressive and

(2) being passive-aggressive. Being aggressive ( $n = 133$ ) encompasses behaviors such as expressing anger ("*this change in my personality when I get angry scares him... I've noticed that he does not express certain feelings because he's afraid I'll get angry at him*" F, perpetrator), insulting the partner ("*Our anniversary...the day he should do something sweet for me...instead he brought up something I did that bothered him, called me a slutty bitch and told me to die*" F, victim), and yelling. Being passive-aggressive ( $n = 60$ ) includes behaviors such as excessive criticism ("*I stopped sending him selfies because I could not deal with his remarks... I felt like I was being dissected on a fashion TV show... it's as if he is writing an essay criticizing every piece I'm wearing*" F, victim) and mocking ("*When we have video calls, he always makes fun of me... the way I talk and look... I tell him to stop and that it hurts my feelings, but he just keeps laughing*" F, victim).

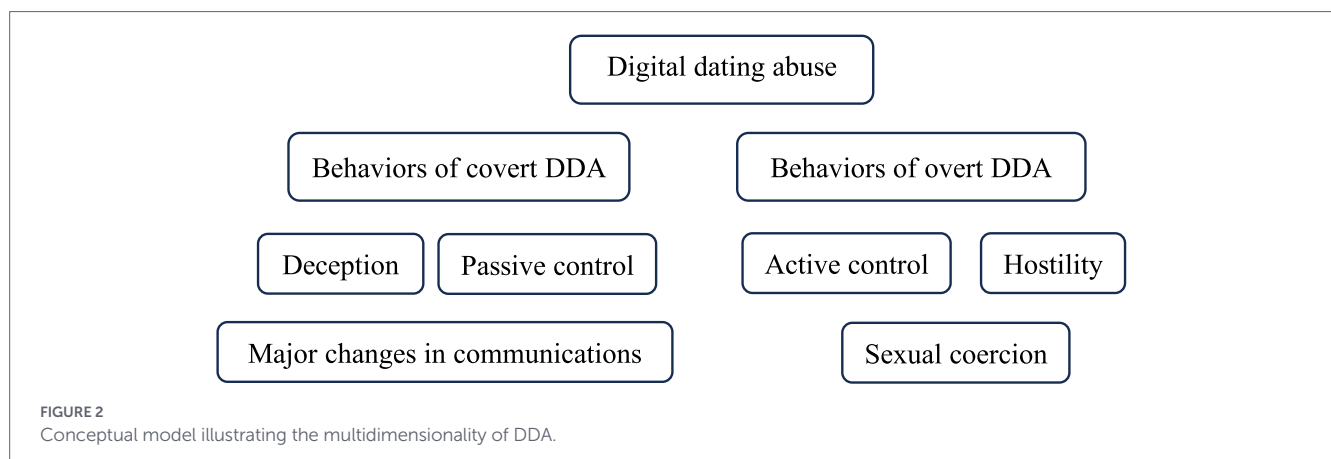
### 3.6 Sexual coercion

Sexual coercion ( $n = 116$ ) refers to experiences in which an individual repeatedly coerces their partner into engaging in digital sexual practices, such as sexting, despite being aware that their partner does not wish to participate. Several contextual factors are particularly relevant to this category. In LDRRs, sexting often represents the only means by which partners can maintain a sense of sexual closeness, making the sharing of sexual content more prevalent. Additionally, individuals in LDRRs often expect their partners to demonstrate spontaneity in sexting (e.g., sending sexually suggestive pictures at night). When this spontaneity or frequency decreases, some individuals tend to adopt behaviors of sexual coercion. Sexual coercion was categorized into two subtypes: sending spontaneous and unsolicited sexual content ( $n = 88$ ) ("*We have been dating for 6 months, and it seems he's not into it anymore... I send him sexy pictures, and he does not say much... I sent him 2-3 sexy pictures last night, and he did not say anything... This morning I sent him a video of me masturbating, and he only said that I was naughty*" F, perpetrator), and pressuring a partner to engage in asynchronous sexting practices ( $n = 28$ ) ("*I'm at a point where the idea of masturbating on camera is like torture for me... I understand that he also has needs, but I feel repulsed by myself after doing it... if I say I'm not in the mood, he just keeps pushing me*" F, victim).

### 3.7 The behavioral multidimensionality of DDA

In the previous section, we presented the six major categories that were conceptualized while analyzing the participants' experiences. In this section, we present the conceptual model that represents the behavioral multidimensionality of DDA (Figure 2).

According to our conceptualization, DDA can be characterized as a multidimensional behavioral phenomenon encompassing two primary dimensions: (i) covert DDA; and (ii) overt DDA. The covert DDA dimension includes major changes in communication, deception, and passive control. In contrast, the overt DDA dimension comprises active control, hostility, and sexual coercion. The distinction between these two overarching dimensions relates to how individuals tend to perceive such behaviors. Our analysis suggested that victims often demonstrated a greater predisposition to provisionally "tolerate" and/or minimize behaviors of covert DDA (e.g., subtle changes in communication patterns or lies intended to avoid asynchronous communication). In contrast, when



perpetrators engaged in behaviors of overt DDA, victims were more likely to interpret these actions as abusive and non-normative. Interestingly, in cases where covert DDA escalated into overt DDA, victims frequently reinterpreted the behaviors they had previously minimized as abusive. Thus, both the frequency of covert DDA and their escalation into more overt forms appears to play a crucial role in shaping how individuals perceive and make sense of their experiences. This rationale is in line with previous research that states that victims typically tend to present difficulties perceiving covert abuse as abusive (Parkinson et al., 2024).

Interestingly, because most users reported experiencing and/or perpetrating multiple behaviors of DDA, it was possible to observe a continuum between covert and overt forms of DDA. This pattern was particularly evident in perpetrators’ and victims’ narratives, which frequently described how covert DDA behaviors gradually escalated into overt behaviors. However, these accounts were especially striking in victims’ narratives, as they tended to provide more detailed descriptions of how the experiences progressively escalated to overt DDA:

“When we started dating everything was perfect. He made me feel loved and secure, like I truly mattered to someone. Over time, though, he started becoming a little clingy...I felt like I had to be constantly available...every time I went online on WhatsApp, I would immediately get a message from him. At first, I thought it was just coincidence. Looking back, I think that was when he started checking up on me. A few months later, things became more intense...he grew increasingly possessive. If I went out, there would be endless calls and constant requests for photos of where I was or what I was eating...As soon as I got home, he would call to question me about everything I had done and tell me I wasn’t prioritizing our relationship...eventually, I stopped going out altogether. It felt easier to stay on the phone with him than to deal with the accusations, the guilt, and the constant pressure” (Female, victim).

This account illustrates how initially subtle and seemingly “caring” behaviors (e.g., checking up frequently) can gradually evolve into explicit monitoring and control, suggesting that covert forms of DDA may operate as early stages in a broader escalation process. Hence, as these behaviors become more frequent and normalized within the relationship, they may intensify into overt forms of abuse, reinforcing a cyclical pattern in the development and consolidation of DDA experiences.

TABLE 2 Most prevalent multidimensional models to analyze DDA.

Authors	Behavioral dimensions
Borrajo et al. (2015)	Direct aggression and, control/monitoring
Reed et al. (2017)	Digital sexual coercion, digital direct aggression, and digital monitoring/control
Brown and Hegarty (2021)	Humiliation, monitoring/control, sexual coercion, and threats

## 4 Discussion

The objective of this study was to develop a model that captures the behavioral multidimensionality of DDA. According to our framework, DDA can be characterized as a multidimensional behavioral phenomenon comprising behaviors of covert DDA and behaviors of overt DDA. This conceptualization aligns with previous research that has similarly described DDA as a multidimensional phenomenon. Considering that a previous systematic review identified a substantial number of multidimensional behavioral models to analyze this phenomenon (Rocha-Silva et al., 2021), we focus our discussion on the most prevalent models (Table 2).

The most prevalent multidimensional model was conceptualized by Borrajo et al. (2015) and comprises two behavioral dimensions: (1) direct aggression; and (2) control/monitoring. When comparing with our model, it is possible to align the dimensions of direct aggression and control/monitoring with our dimensions of hostility, active control, and passive control. Nonetheless, their model can be characterized as incomplete, as it addresses only three of the six dimensions identified in our study, most notably lacking a sexual dimension. Moreover, despite some similarities, there are several conceptual differences in how these dimensions were defined. A clear example is the way Borrajo et al. (2015) equate control behaviors with monitoring behaviors. In contrast, our model distinguishes them as active control and passive control, reflecting the specific characteristics that differentiate these behaviors. One possible explanation for these conceptual discrepancies is that Borrajo et al.’s model was developed as a byproduct of creating a quantitative instrument to measure the phenomenon (Cyber dating abuse questionnaire). Although previous studies have recommended the CDAQ for assessing DDA (Caridade et al., 2019; Lara, 2020; Stephenson et al., 2018; Taylor and Xia, 2018), we emphasize that this instrument has several limitations that restrict its ability

to capture the full behavioral multidimensionality of DDA. Regarding the models conceptualized by Reed et al. (2017) and Brown and Hegarty (2021), some similarities with our behavioral dimensions can be observed (e.g., sexual coercion, hostility, active control, and passive control). Nevertheless, these two models do not include specific behavioral dimensions of covert DDA (e.g., deception and major changes in communication), focusing almost exclusively on the behavioral dimensions of overt DDA. Additional conceptual differences are also apparent, particularly regarding the conflation of control behaviors with monitoring behaviors. With respect to the behavioral dimension of deception (e.g., cheating, impersonation, instrumentalization, and lying), it is important to note that these behaviors are rarely addressed in DDA literature. While certain deceptive behaviors may be more prevalent in LDRRs (e.g., impersonation, instrumentalization), individuals in GCRRs can also engage in digital deception (e.g., lying about going to sleep to have space to communicate with someone else). Regarding major changes in communication (e.g., blocking or deleting messaging applications, disappearing for extended periods), this dimension may be particularly relevant in LDRRs. However, it is also important to consider that most research relies on samples of undergraduate students, for whom digital communication often plays a crucial role in maintaining romantic relationships.

When comparing our model with other qualitative studies, some differences in the conceptualization of behavioral dimensions become evident. Similar to quantitative literature, these differences largely reflect a focus on behaviors associated with overt DDA (e.g., emotional aggression, isolation, mutual violent control, punishment and humiliation, sexual coercion, threats, and harassment) (Boethius et al., 2023; Douglas et al., 2019; Hellevik, 2019; Melander, 2010; Woodlock, 2017). Nevertheless, certain qualitative findings are relevant to discuss. For example, Hellevik (2019) observed that individuals differentiated behaviors of monitorization and control. According to Hellevik (2019), control is characterized by behaviors aimed at preventing a partner from socializing with specific individuals or posting certain content on social media. Monitoring, in contrast, involves behaviors intended to surveil a partner's whereabouts, routines, and digital interactions. Contrary to the prevailing trend in the literature of treating monitoring and control as equivalent, our analysis also revealed that participants qualitatively distinguished between these behaviors. To conclude, it is important to mention that some behavioral dimensions of covert DDA (e.g., major changes in communication, deception) are often perceived as normative or even necessary for the maintenance of a romantic relationship (Smith-Darden et al., 2017; Temple et al., 2016; Ouytsel et al., 2016). Previous research has highlighted that certain behaviors academically characterized as abusive may be interpreted by the general population as normative and non-impactful (Duerksen and Woodin, 2019). For example, sharing social media passwords with a romantic partner is often viewed as normative and indicative of trust (Lenhart and Duggan, 2014). In our data, individuals frequently describe password sharing in this manner. However, instances where a partner refused to share their password were interpreted as signaling secrecy, which could reinforce behaviors associated with covert and overt DDA (e.g., pressuring a partner to share passwords). Moreover, we observed that password sharing, rather than solely promoting relational stability and trust, could facilitate passive control behaviors (e.g., logging into a partner's social media to read private messages). Thus, an act typically perceived as normative can escalate to a situation in which one partner persistently

monitors the other's digital activities. As noted by Reed et al. (2016), the line between normative and abusive behaviors is often thin, and context and relationship dynamics strongly influence how such behaviors are perceived. In our analysis, experiences of overt DDA were consistently characterized as highly impactful, whereas experiences of covert DDA (e.g., lying about going to sleep early) often began as non-impactful but, with repeated occurrence, escalated to the same degree of impact as overt DDA.

## 5 Limitations

Although this project contributes to the theoretical development of this field of research, it is also important to discuss several limitations. The first limitation concerns the use of a nonconventional data collection method (e.g., online qualitative data), as this approach entails specific constraints. For instance, we were unable to report detailed sociodemographic information about the participants. Although the posts allowed us to identify certain key demographic characteristics (e.g., age, gender, and sexual orientation), we could not obtain information regarding education, nationality, or race/ethnicity. Nevertheless, we do not consider the absence of this additional demographic information to have compromised the analytic process.

A further limitation concerns the quality of the data, as online posts cannot be directly compared to data obtained through semi-structured interviews. Nevertheless, this data collection method offers several strengths that help mitigate this limitation. First, it enabled the collection of a volume of information that would have been difficult to obtain through traditional qualitative methods. Importantly, the substantial amount of data gathered helped address potential concerns regarding data quality, as the breadth of participants' accounts provided sufficient depth and detail to support the development of categories and the theoretical model. Moreover, this approach allowed for the collection of naturalistic data concerning the perpetration of intimate cyber abuse behaviors. Given that qualitative research often faces considerable challenges in identifying and recruiting individuals who perpetrate abusive behaviors, this method helped to overcome some of these constraints.

The accuracy of the information reported by participants may also be questioned, as we were unable to ascertain their motivations for creating the posts. Nevertheless, our initial analysis suggested that users generally adopted a sincere tone when sharing their experiences, and their decision to post appeared to be motivated primarily by a desire to seek support from others in similar circumstances (e.g., being in a LDRR). Additionally, some participants shared their experiences after the relationship had ended, either to seek closure or to provide cautionary accounts for others. This interpretation is further supported by previous research indicating that the anonymity afforded by digital environments tends to facilitate honesty rather than intentional deception (Smith et al., 2017).

The second limitation concerns the fact that the data were composed exclusively of individuals in LDRR. Consequently, questions may arise regarding the contextuality and prevalence of some behaviors in GCRRs. As previously mentioned, LDRRs tend to present characteristics that distinguish them from GCRRs, particularly the impossibility of partners interacting face to face. Moreover, in LDRRs, digital communication plays a central role in maintaining the relationship. Thus, digital communication may be characterized as

fundamental within this relational context. As such, certain behaviors of DDA may be more prevalent in LDRR (e.g., major changes in communication and sexual coercion). Nevertheless, when comparing our findings with those of previous studies, we observed substantial similarities, as individuals in both GCRRs and LDRRs appear to engage in comparable DDA behaviors.

## 6 Recommendations

As a recommendation, we strongly reiterate the need to conduct more in-depth qualitative studies on experiences of DDA. Although the number of scientific publications on this phenomenon appears to have declined in recent years, there remains a theoretical need to gather comprehensive data on individuals' experiences of DDA. While the present study offers important contributions, the lack of in-depth data constitutes a significant limitation that should be addressed in future research. More specifically, we recommend that researchers conduct semi-structured interviews to explore how perpetrators and victims experience DDA. We further recommend that future research focus on more diverse samples rather than using the common undergraduate student sample. We make this recommendation because previous studies have shown that these experiences also occur among adults and older adults (Boethius et al., 2023; Branson and March, 2021; Butler et al., 2023; Henry et al., 2020). Considering that some covert DDA behaviors tend to be normalized, we also recommend that future studies adopt strategies to facilitate the collection of data that are typically underreported.

## 7 Conclusion

For nearly a decade, the phenomenon of DDA has been characterized as complex, and several studies have recommended that researchers conduct qualitative investigations to identify which behaviors should be considered when measuring this phenomenon (Wolford-Clevenger et al., 2016). We argue that the theoretical complexity of this phenomenon may be a byproduct of the academic emphasis on quantification rather than on conducting in-depth qualitative studies to understand what is being quantified. Based on the analysis of 1,437 publications, we developed a model encompassing two major behavioral dimensions (covert, DDA and overt DDA) and six specific dimensions (major changes in communication, passive control, deception, active control, hostility, and sexual coercion). Compared with previous models, the theoretical framework we propose is distinguished by its inclusion of behavioral dimensions related to covert DDA. Through this model, we emphasize the importance of examining covert DDA behaviors, as these may serve as precursors to overt DDA behaviors.

## Data availability statement

The datasets presented in this article are not readily available because the dataset contains digital publications from the website Reddit. The availability of the dataset would compromise the principle of the trackability of the participants. Requests to access the datasets should be directed to TR-S, [rochasilva.t@gmail.com](mailto:rochasilva.t@gmail.com).

## Ethics statement

The studies involving humans were approved by Comissão de Ética da Faculdade de Psicologia e Ciências da Educação da Universidade do Porto. The studies were conducted in accordance with the local legislation and institutional requirements. The ethics committee/institutional review board waived the requirement of written informed consent for participation from the participants or the participants' legal guardians/next of kin because the EC deemed that we took methodological steps that justified not obtaining informed consent from the participants. 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

TR-S: Formal analysis, Writing – review & editing, Writing – original draft, Methodology, Investigation, Visualization, Resources, Conceptualization, Validation, Software, Data curation. CN: Validation, Writing – original draft, Conceptualization, Supervision. LR: Conceptualization, Validation, Writing – original draft, Supervision.

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