

**What the Phub? A Scoping Review on Partner Phubbing and Mental Health in
Romantic Relationships**

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Abstract

Introduction: Romantic relationships are crucial for an individual's mental health, especially for sexual minorities who are confronted with a variety of unique challenges. These relationships can buffer against the negative impact of such challenges. However, partner phubbing (Pphubbing) displays a threat to the positive outcomes related to romantic relationships and is linked to various adverse mental health outcomes. Despite these potential effects, research on Pphubbing and mental health outcomes is limited, particularly concerning sexual minorities. Therefore, this scoping review aims to describe the current scope of literature on Pphubbing and mental health outcomes, focusing on the diversity of samples and the representation of different sexual orientations and relationships. **Methods:** A scoping review was conducted following the PRISMA guidelines. Three databases have been systematically searched (Scopus, Web of Science, APA PsycInfo), using a relevant search string. Based on formulated inclusion criteria, articles were screened for relevance using Covidence. A total of 8 studies were selected and information was extracted regarding the year of publication, author(s), study sample, study design, mental health variable, outcomes measures and outcomes. **Results:** The studies were published between 2016 and 2023. Study designs differed between correlational studies ($n = 6$) and longitudinal studies ($n = 2$). Sample sizes ranged from 75 to 346. Sample characteristics and the amount of detail reported varied but only one study included sexual minorities. Pphubbing was negatively associated with life satisfaction, depression, negative emotions, anxiety, well-being, and anger/frustration. **Discussion:** The findings highlight that Pphubbing has been associated with various adverse mental health outcomes among different samples, making it a serious issue of modern-day relationships. Further, a lack of detailed reporting regarding sample characteristics, such as sexual orientation or relationship form was observed. Thus, future research is needed that specifically focuses on the effect of Pphubbing on the mental health of sexual minorities.

Keywords: Phubbing, sexual minorities, romantic relationships, mental health

Introduction

Social relationships are one of the most prominent sources of happiness and mental and physical health (Argyle, 2013). Thus, smartphones which enable staying in touch with friends and family regardless of physical distance, have become a widespread tool to maintain social relationships. Over the past decade, the number of people owning a smartphone has more than doubled, from 35% in 2011 to 85% in 2021 (Pew Research Center, 2021). Phones allow getting and staying in touch with other people, even in times of social distancing, like during the Covid-19 pandemic (David & Roberts, 2021). Thus, smartphone use can aid social connectedness, which is associated with higher psychological well-being and moderates the negative effect of social distancing (David & Roberts, 2021). Furthermore, Yang and colleagues (2016) investigated how social relationships are linked to longevity and health across lifetime and their research supports a positive link between them. Moreover, they argue that social isolation enhances risks of inflammation similar to physical inactivity in adolescents and hypertension in the elderly, even more strongly than known risk factors, like diabetes. There are many different forms of social relationships, like friendships, family relationships, or romantic relationships, with varying degrees of importance for mental health. This study will focus on a phenomenon linked to smartphone use that displays a potential risk factor for such relationships.

The Importance of Romantic Relationships

A particularly important form of relationship are romantic relationships. Braithwaite & Holt-Lunstad (2017) describe in their paper the positive association between romantic relationships and mental health, especially in more established relationships, like marriage, compared to less committed forms of romantic relationships. They argue that romantic relationships are of key importance for human functioning with the capacity of influencing a wide range of mental health outcomes. That is in line with the findings of Braithwaite and colleagues (2010) who revealed that college students who were engaged in committed romantic relationships,

suffered from fewer mental health problems compared to single students. In their study, students in romantic relationships engaged less in risky behaviours, such as drunk driving or binge drinking and were less likely to be overweight. Furthermore, a scoping review conducted by Navaneetham and Kanth (2022), reviewed 64 studies examining the association between personal relationships and physical and mental health. They summarized that good romantic competence, relationship quality and satisfaction, partner support and intimacy display protective factors associated with increased psychological well-being and happiness while lowering the likelihood of clinical problems and risky behaviours. These might include depression, substance use, loneliness, suicidal ideation, and risky sexual behaviours. Further, romantic relationship transitions, such as in on-off relationships, are associated with impaired mental health functioning and enhanced psychological distress symptoms (Monk et al., 2018). Overall, romantic relationships display an important factor in promoting good mental health and reducing mental health problems.

Sexual Minorities and Romantic Relationships

One group that appears to be especially vulnerable to experiencing mental health problems, such as depression, anxiety, substance misuse, and suicide attempts or suicide, are sexual minorities in comparison to their counterparts identified as heterosexual (Plöderl & Tremblay, 2015). Based on their research, Lee and colleagues (2016) suggest that the experience of discrimination based on one's sexual identity might be a crucial factor for sexual minorities in developing diagnosable mental health or substance use disorders. Further, they reported that sexual minority women were associated with experiencing internalized mental health problems, while men were associated with externalized substance use problems. Sexual minorities comprise various sexual and gender identities or expressions, differing from the culturally set norms, typically including individuals who identify as gay, lesbian, bisexual and transgender (Cochat Costa Rodrigues et al., 2017). It should be noted that the relationship quality in romantic relationships has the potential to alleviate the negative impacts associated

with minority stress (Sarno et al., 2022). A study conducted by Baams and colleagues (2014) investigated same-sex attracted individuals and revealed involvement in a romantic relationship as an associated buffer against the negative impact of expected rejection on their psychological well-being. Moreover, being in a same-sex relationship among gay men was associated with psychological and sexual health benefits and less substance use, compared to single gay and bisexual men (Parsons et al., 2013). Additionally, similar to the findings of Braithwaite & Holt-Lunstad (2017), who describe a positive relation between more established relationships and mental health, Kornblith and colleagues (2016) report higher levels of commitment in romantic relationships protective against depression for women, independent of their sexual orientation, and marriage associated with decreased depressive symptoms for lesbians. Since romantic relationships are associated with buffering against the vulnerability of sexual minorities regarding the experience of mental health problems, it is crucial to identify possible factors that can influence or harm those relationships.

Phubbing and Pphubbing

Within this digital age, relationships are not solely based on interactions in the real world but include digital encounters, such as through smartphones. Therefore, the question arises whether the two worlds of online and offline communication can interfere at times. A phenomenon that is related to this question is phubbing. Phubbing can be defined as “the act of snubbing someone in a social setting by looking at your phone instead of paying attention” (Wolf, 2014, p. 3). Phubbing can manifest in various settings and situations, such as during routine tasks, lectures, meals, meetings, or other social gatherings and can take the form of chatting, web surfing, time checking, answering a call, etc. and those who engage in phubbing tend to neglect to communicate with those around them, disregarding their relationships (Ugur & Koc, 2015). In the context of romantic relationships, Roberts & David (2016) define partner phubbing (Pphubbing), as the degree to which a person utilizes or becomes preoccupied with their mobile phone while spending time with their partner. Pphubbing might be a

threatening factor for romantic relationships and mental health. Different studies can be found investigating the effect of Pphubbing on romantic relationships. Thus, it has been shown that Pphubbing can be associated with reduced relationship satisfaction, well-being, intimacy and closeness and enhances jealousy and conflict (Utami et al., 2021). Moreover, Yam (2022) investigated the mediating role of relationship satisfaction and perceived relationship quality in the relationship between Pphubbing and life satisfaction. The results revealed a full mediating role of relationship satisfaction and quality, suggesting that relationship satisfaction and perceived quality both diminish in individuals who experience Pphubbing exhibited by their partners, which can reduce their life satisfaction. Additionally, a daily diary study was conducted in which partners that experienced higher levels of Pphubbing, reported lower life satisfaction and higher levels of anger/frustration, resentment and retaliation (Thomas et al., 2022). Furthermore, a study conducted by Wang and colleagues (2017) explores the indirect effect of Pphubbing on depression through a reduction in relationship satisfaction and their results indicate that Pphubbing might undermine relationship satisfaction and contributes to an increase in depression due to that reduction in relationship satisfaction. Moreover, research conducted by Zhan and colleagues (2022) reveals that reduced romantic relationship satisfaction was associated with increased phubbing behaviours, mediated by increased loneliness. Further, they show that individuals with higher empathy felt increased loneliness based on reduced romantic relationship satisfaction, which then led to increased phubbing behaviours. Additionally, it has been theorised that Pphubbing evokes feelings of being unimportant compared to the digital content the partner is focusing on, which can lead to conflicts in romantic relationships (Papacharissi, 2018). In summary, Pphubbing might seem to be associated with multiple adverse effects in romantic relationships, which can potentially threaten the mental health of partners.

However, since sexual minorities seem especially vulnerable to suffering from mental health problems, attention should be paid to protective factors for their mental health (Plöderl

& Tremblay, 2015). Regarding the discussed literature, romantic relationships are important for mental health and are associated with a buffering effect against the adverse effect of minority stress for sexual minorities. Nonetheless, phubbing might interfere with this buffering effect by negatively influencing romantic relationships and fostering negative mental health outcomes. Even though there is a growing body of research considering the relationship between Pphubbing in romantic relationships and its potential consequences, it seems as if sexual minorities have received little to no attention in the existing literature. Most literature seems to be limited to heterosexual couples, potentially neglecting, or underrepresenting the romantic relationships of sexual minorities.

Purpose of the Study

Since there is a growing body of literature investigating the potential consequences of Pphubbing on partners' mental health, a question about the inclusivity of the included samples arises. To be able to translate the findings of these studies to a variety of romantic relationship forms and sexual orientations, it is important to consider whether such diverse minorities have been included in such research. Romantic relationships display an important factor for happiness and mental health (Braithwaite & Holt-Lunstad, 2017). Therefore, it is important to identify potential risk factors that might inhibit these beneficial associations. Furthermore, there are a variety of romantic relationships and sexual minorities that are confronted with unique challenges for their mental health related to their sexual orientations (Cochat Costa Rodrigues et al., 2017; Lee et al., 2016; Plöderl & Tremblay, 2015). Therefore, the aim of this literature review is to systematically map and synthesize the existing literature that explores how phubbing behaviours might be linked to different mental health outcomes for partners in romantic relationships and further, to explore the diversity of the used samples. This information is used to describe the current scope of literature on Pphubbing connected to diverse mental health outcomes and to inform about potential gaps regarding the studied

samples, that require further attention in future research. To achieve this aim, the following objectives will be addressed:

1. What are the mental health outcomes that have been studied as associated with phubbing in romantic relationships?
 - 1.1. What mediating and moderating variables have been explored in this association?
2. What samples have been studied in research investigating the link between phubbing in romantic relationships and mental health outcomes?
 - 2.1. What are the sample characteristics including sexual orientation, relationship form, age, and gender?

Methods

Research Design

To be able to address the formulated objectives, a scoping review will be conducted. A scoping review is “a form of knowledge synthesis that addresses an exploratory research question aimed at mapping key concepts, types of evidence, and gaps in research related to a defined area or field by systematically searching, selecting, and synthesizing existing knowledge” (Colquhoun et al., 2014, pp. 2-3). This methodological approach seems appropriate for the chosen objectives at hand, not only due to their broad and explorative nature but also because scoping reviews display a promising tool for identifying gaps in the existing literature and can examine the relevance of conducting a full systematic review or other research in a specific field (Arksey & O’Malley, 2005). Moreover, scoping reviews can be used as a source of information for guiding practice, policymaking, and further research endeavours (Daudt et al., 2013). Overall, a scoping review enables the synthesis of the current state of the art, potentially uncovering trends or gaps that require further exploration in future research. Within this review, the six-stage framework for conducting a scoping review proposed by Arksey and O’Malley (2005) is being used. Within the first stage, the research questions or objectives are formulated. In the second stage, relevant studies are being

identified. Next, studies that will be included in the review are selected in stage three. Within stage four, data is charted and in stage five, the results are collated, summarised, and reported. The last and sixth stage is optional and entails the consultation of relevant stakeholders to further enhance the review. Further, the process and results are reported in accordance with the PRISMA Extension for Scoping Reviews (PRISMA-ScR) as formulated by Tricco and colleagues (2018).

Search Strategy

Before searching for literature, a search strategy has been developed. To begin with, many websites entail unregulated material which threatens reliability, therefore, reputable databases should be used (Bolderston, 2008). Thus, three popular and reputable databases have been selected, namely Scopus, Web of Science and APA PsycInfo.

Next, search terms and the resulting search string were formulated. Firstly, according to Aromataris and Riitano (2014), synonyms or alternative terms for the keywords of the research question or objective should be formulated and written down in a logic grid, whereby reading related literature can provide further ideas and insights about the vocabulary that is used in the research field. Therefore, the three keywords “*romantic relationship*”, “*mental health*”, and “*phubbing*” have been identified and synonyms and related words have been written down (see Table 1).

Table 1

Keywords and alternative terms for the search strategy

Romantic relationship	Mental Health	Phubbing
Couple	Well-being	Phone snubbing
Loving relationship	Emotional stability	Partner phubbing
Romantic Partner	Life-satisfaction	Pphubbing
Marriage	Happiness	
Romantically involved	Mental illness	
Romantic partnership		
Intimate relationship		

To develop a search string using the keywords and alternative terms, Boolean operators and wildcards were used. Therefore, the terms in the separate columns were combined using “OR” and finally, the three different columns were combined, using “AND”, as well as parentheses. Furthermore, to filter out more irrelevant results, “TITLE-ABS-KEY” is used which ensures that the keywords or chosen synonyms are to be found in either the title, abstract or keywords of the resulting articles. Thus, the search string was:

TITLE-ABS-KEY (“romantic relationship” OR “couple” OR “loving relationship” OR “marriage” OR “romantic partner” OR “romantically involved” OR “romantic partnership” OR “Intimate relationship”) AND (“mental health” OR “well-being” OR “emotional stability” OR “life-satisfaction” OR “happiness” OR “mental illness”) AND (“phubbing” OR “phone snubbing” OR “partner phubbing” OR “Pphubbing”)

The final search was conducted on March 23rd, 2024, and resulted in a total of 118 articles.

Eligibility Criteria

Next, to ensure that the included articles in this review are thematically and methodologically relevant for addressing the proposed objectives, multiple inclusion and exclusion criteria have been formulated to exclude irrelevant papers while keeping as many relevant ones as possible. To check that the used material is high in standard, only peer-reviewed journal articles are included in the review, published within the last 10 years, to ensure recency (Bolderston, 2008). To answer the first objective, the topic of those articles must consider Pphubbing in romantic relationships linked to mental health. Further, the articles must be written in English to guarantee that the researcher can fully understand them. Furthermore, participants included in the articles must be 18 years or older. Finally, to ensure that the variable of interest is included in the way this research intends it, phubbing must be clearly defined. In summary, studies published within the last 10 years which provide qualitative, quantitative, observational, or mixed-method data, investigating the association

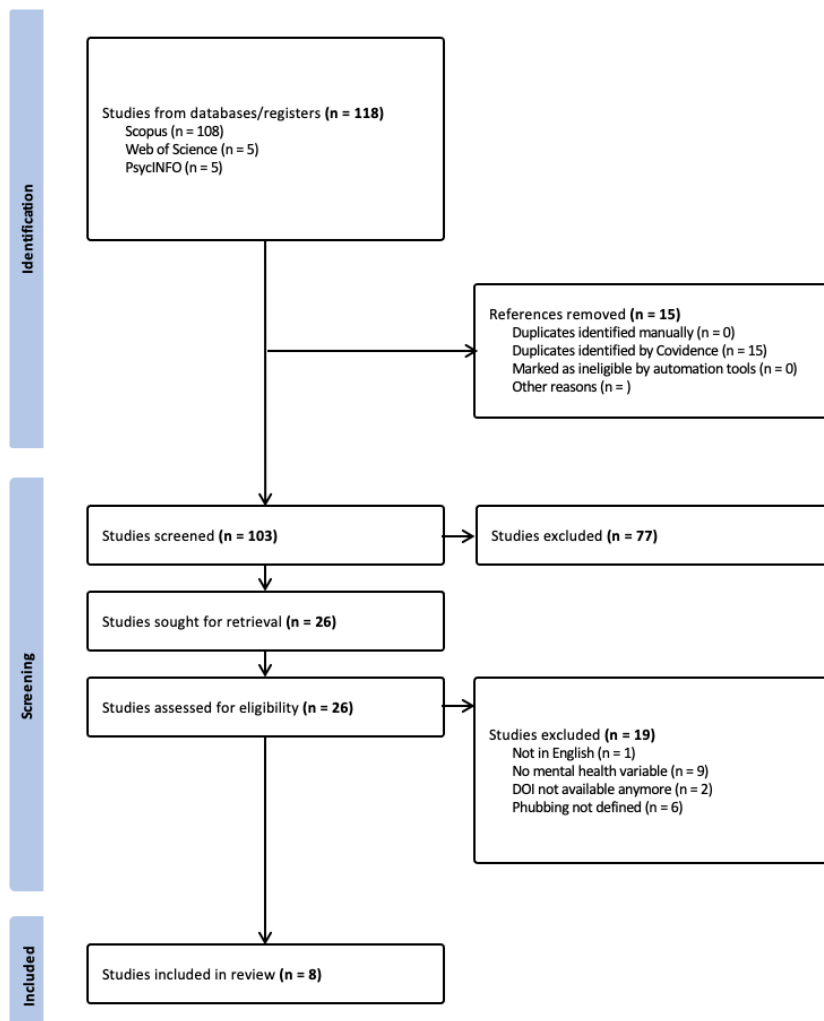
between Pphubbing and mental health in adults involved in a romantic relationship were included in the review.

Study Selection

The website Covidence was used to structure the screening process of the obtained articles (see Figure 1). First off, the titles and abstracts were screened for eligibility. Within this process, a total of 77 studies were excluded as they could be categorized as irrelevant based on their titles and abstracts, such as the paper “How Adolescents Use Text Messaging Through their High School Years” by Ehrenreich et al. (2019). Next, the full texts of the remaining articles were read and a final decision about their eligibility was made based on the formulated criteria.

Figure 1

PRISMA flowchart of the selection process for the scoping review



Data Extraction

Within the process of data extraction, the selected articles were thoroughly examined by a single researcher to extract relevant information on both, the characteristics of the participants and the studies. From each article, data was extracted about the year of publication, author(s), study sample, study design, mental health variable, outcome measures and outcomes. The first objective considered the mental health outcomes that have been studied in association with phubbing in romantic relationships. This was presented in Table 2, including the investigated mental health variable, outcome measures and outcomes. Additionally, to provide a comprehensive overview of the included studies, information about the study designs was extracted and added to Table 2. The second objective was concerning what samples have been studied in research investigating the association between phubbing in romantic relationships and mental health outcomes. This was presented in Table 3, including information about the sample size, population, gender, and mean age.

Results

Overview

Based on the proposed inclusion and exclusion criteria, a total of 8 studies are included in this scoping review, published between 2016 and 2023. Characteristics of the studies, including study design, mental health variables, outcome measures and outcomes are presented in Table 2. Six cross-sectional correlational studies ($n = 6$) and two longitudinal studies ($n = 2$) could be identified. Sample characteristics are displayed in Table 3, including sample size, population, gender, mean age, and forms of romantic relationships present in the sample. The sample sizes of the listed studies range from 75 to 346.

Mental Health Outcomes Associated with Pphubbing

The first point of exploration concerns the mental health outcomes that have been studied in association with Pphubbing. Therefore, information has been collected regarding the different mental health variables studied as well as the used outcome measures and the

obtained outcomes. Within the included studies, *life satisfaction* ($n = 2$), *life satisfaction* together with *depression* ($n = 1$), *negative emotions* ($n = 1$), *well-being* ($n = 1$), *anxiety* ($n = 1$), *depression* ($n = 1$), *personal well-being* together with *anger/frustration* ($n = 1$) have been investigated in association with Pphubbing.

Life Satisfaction

Firstly, Mahmud et al. (2023) conducted a cross-sectional study researching the relationship between Pphubbing and *life satisfaction* through conflict, relationship satisfaction and communication quality. In their model, Pphubbing was theorised to be associated with smartphone conflict. Further, smartphone conflict was theorised to be associated with communication quality and relationship satisfaction. And communication quality as well as relationship satisfaction were theorised to be associated with *life satisfaction*. *Life satisfaction* was measured with the Satisfaction with Life Scale (SWLS) on a 5-point Likert scale. Their results reveal multiple significant relationships. Namely, Phubbing has been positively associated with conflict. Further, conflict has been negatively associated with relationship satisfaction. Suggesting, that individuals experiencing higher levels of Pphubbing can experience higher levels of conflict which further, might be related to lower levels of relationship satisfaction. Finally, relationship satisfaction was significantly positively associated with *life satisfaction*. Based on these findings, they conclude that Pphubbing can be associated with the experience of conflicts regarding smartphones which was related to reduced relationship satisfaction, which, in turn, was associated with a reduction in *life satisfaction*.

Secondly, Yam (2022) investigated the possible mediating role of perceived romantic relationship quality and relationship satisfaction in the relationship between Pphubbing and *life satisfaction*. He conducted a cross-sectional correlational study, measuring *life satisfaction* using the SWLS on a 5-point Likert scale, the results show that both, romantic relationship quality and relationship satisfaction play a significant mediating role in the association

between Pphubbing and *life satisfaction*. Especially those who experienced higher levels of Pphubbing perceived lower relationship quality and satisfaction, which was negatively associated with *life satisfaction*. These findings suggest that individuals who are exposed to Pphubbing might experience a reduction in both, relationship quality and satisfaction, which can lead to reduced *life satisfaction*, especially if the perceived levels of Pphubbing are high.

Life Satisfaction and Depression

Moreover, Roberts and David (2016) conducted a cross-sectional study, researching the potential indirect negative impact of Pphubbing on *depression* through *life satisfaction*, cell phone conflict and relationship satisfaction, proposing a sequential moderated mediation. They measured *depression* with the Patient Health Questionnaire – 4 (PHQ-4) and *life satisfaction* with two self-constructed items. Their results show a significant positive association between Pphubbing and cell phone conflict. Further, Pphubbing and cell phone conflict significantly negatively predicted relationship satisfaction and cell phone conflict mediated the relationship between Pphubbing and relationship satisfaction. Moreover, relationship satisfaction was significantly positively associated with *life satisfaction*, which was significantly associated with *depression*. In conclusion, Pphubbing had an indirect effect on *depression* through cell phone conflict, relationship satisfaction and then *life satisfaction*. Thus, individuals who are exposed to Pphubbing might experience increased cell phone conflict, which can lead to lower levels of relationship satisfaction which, in turn, might decrease *life satisfaction* and increase *depression*.

Depression

Furthermore, Wang et al. (2017) conducted a cross-sectional study, investigating the indirect effect of Pphubbing on *depression* through relationship satisfaction. Additionally, relationship length was added as a moderating variable of the proposed indirect effect. Using the Center for Epidemiologic Studies Depression Scale, *depression* was measured using a 4-point Likert scale. Their results reveal a significant relationship between Pphubbing and

depression. Further, testing the mediating effect of relationship satisfaction on the relationship between Pphubbing and *depression* showed a partial mediation. Relationship length did significantly moderate the relationship between Pphubbing and relationship satisfaction. Specifically, the path between Pphubbing to relationship satisfaction was significant for those married seven years or longer, but non-significant for shorter durations of marriage. Further, the indirect effect of Pphubbing on depression via relationship satisfaction was only significant among partners who have been married for over seven years. These findings suggest that individuals who are in a romantic relationship for at least seven years and are exposed to Pphubbing might experience a reduction in relationship satisfaction which can lead to higher levels of *depression*.

Negative Emotions

Next, Frackowiak et al. (2023) did a longitudinal daily diary study, researching the relationship between Pphubbing and *negative emotions*, including *anger*, *loneliness*, *sadness*, and *feeling upset*. Additionally, they hypothesised that this relationship would be mediated by feeling understood or validated by the partner, as well as perceived Pphubbing intensity. Using a modified version of the Discrete Emotions Questionnaire (DEQ), *negative emotions* were measured on a 5-point Likert scale. Their analyses reveal that levels of *anger* were significantly higher on those days, where participants reported Pphubbing compared to days without Pphubbing. The same holds for the other *negative emotions*, namely experiences of *loneliness*, *sadness*, and *feeling upset*. Further, they tested whether the perceived Pphubbing intensity predicted higher levels of *negative emotions*. Their results show that Pphubbing intensity predicted *sadness* positively on both levels, between- and within-person. Regarding *anger* and *feeling upset*, a significant prediction of Pphubbing intensity could only be found on a within-person level. And it could not be recognised as a significant predictor for *loneliness* on either level. Finally, understanding and validation were included as moderating variables. Even though both, understanding and validation were associated with lower *sadness*

on both levels, the interaction between the two variables and Pphubbing intensity were non-significant. *Anger* was negatively predicted on both levels by understanding as well as by the interaction between intensity and understanding. The obtained results suggest that high levels of Pphubbing intensity and low or average levels of understanding might lead to stronger feelings of *anger*. Validation also predicted *anger* negatively on both levels, however, Pphubbing intensity and validation did not interact significantly. Next, understanding predicted *feeling upset* negatively on both levels, but the interaction between intensity and understanding was non-significant. Further, validation also predicted *feeling upset* negatively on both levels and the interaction between intensity and validation was significant. The results suggest that the highest levels of *feeling upset* might be reported when Pphubbing intensity is high and the level of perceived validation by the partner is average or low. Lastly, *loneliness* was negatively predicted by understanding and validation on both levels. However, only the interaction between Pphubbing intensity and validation was significant and the results indicate that feelings of *loneliness* can be stronger when the intensity of Pphubbing is high, and the partner is perceived as less validating.

Anxiety

Moreover, Schokkenbroek et al. (2022) investigated the mediating effect of *anxiety* and partner responsiveness on the relationship between Pphubbing and electronic partner surveillance (EPS), in a cross-sectional correlational survey study. They measured *anxiety* with an abbreviated version of the Generalized Anxiety Disorder Scale (GAD-7), on a 4-point Likert Scale. The results show that Pphubbing was positively associated with *anxiety* and negatively associated with partner responsiveness, as well as a negative relationship between *anxiety* and partner responsiveness. Testing for mediation, their analysis revealed that *anxiety* did not mediate the association between Pphubbing and EPS significantly by itself. However, a partial mediation of the relationship was found by *anxiety* through decreased partner responsiveness. These findings suggest that the occurrence of EPS caused by Pphubbing

might be partially explained by experiencing a decrease in perceived partner responsiveness, which, in turn, might increase *anxiety* in the partner who is being phubbed.

Well-Being

Further, David and Roberts (2021) conducted a cross-sectional correlational survey study to investigate the proposed negative effect that Pphubbing, attachment anxiety and their interaction have on *well-being* through romantic jealousy. *Well-being* was measured using PHQ-4. Their results show a significant interactive effect of Pphubbing and attachment anxiety as predictors of romantic jealousy. More specifically, the conditional effect of Pphubbing on romantic jealousy was only significant among those individuals, who scored as anxiously attached. These findings suggest that anxiously attached individuals experience higher levels of romantic jealousy when confronted with Pphubbing, compared to their less anxiously attached counterparts. Moreover, testing the associations between Pphubbing, attachment anxiety, jealousy and *well-being* showed a significant moderating effect of jealousy on the relationship between Pphubbing and *well-being*. However, this effect was only significant among anxiously attached individuals. Thus, the presented results indicate that those high in attachment anxiety might experience lower levels of *well-being* when confronted with Pphubbing, as it can increase their levels of romantic jealousy.

Personal Well-Being and Anger/Frustration

Finally, Thomas et al. (2022) conducted a longitudinal daily diary study, to investigate the potential consequences of Pphubbing regarding relationship satisfaction, *personal well-being* and *anger/frustration*. Additionally, they paid attention to how one reacts to being phubbed and the motivation to engage in any retaliation behaviours. *Personal well-being* was subdivided into *depressed mood*, *anxious mood*, and *self-esteem*. *Depressed mood* and *anxious mood* were measured using a modified version of the PHQ-4 on a 4-point Likert scale. Further, *self-esteem* was measured with the Single-Item Self-Esteem Scale (SISE). And lastly, *anger/frustration* has been measured using a three-item self-constructed scale by the

research team on a 5-point Likert scale. Their results reveal no significant associations between Pphubbing and *depressed mood*, *anxious mood*, or *self-esteem*. However, participants did report significantly higher levels of *anger/frustration* on days they perceived higher levels of Pphubbing. Additionally, as reactions to being phubbed, participants did report significantly higher levels of curiosity, resentment, and retaliation and further, on days with high levels of Pphubbing, they reported significantly higher agreement with various motivations for retaliation, including revenge, need for support, and need for approval. These findings suggest that individuals who experience Pphubbing might feel increased levels of *anger/frustration* which can lead them to react by behaviours related to curiosity, resentment, and retaliation, possibly guided by feelings of revenge, or a need for support or approval.

Conclusions

Overall, the included studies entail information about Pphubbing and its association with different mental health outcomes, including *life satisfaction*, *depression*, *negative emotions*, *anxiety*, *well-being*, and *anger/frustration*. Pphubbing was linked to adverse mental health outcomes, namely reduced *life satisfaction* and *well-being*, increased levels of *depression*, *negative emotions*, *anxiety*, or *anger/frustration*. Furthermore, the included research did highlight some mediating and moderating roles of various additional variables, including relationship satisfaction, romantic relationship quality, attachment anxiety, partner responsiveness, cell phone conflict, or jealousy in an attempt to shed light on the complex associations between Pphubbing and the presented mental health outcomes.

Table 2*Study Characteristics and Mental Health Focus*

	Author	Study Design	Mental Health Variable	Outcome Measures	Outcome
1	David and Roberts (2021)	Cross-sectional correlational study	Well-being	PHQ-4	Conditional indirect effect of Pphubbing on well-being through romantic jealousy is only significant among anxiously attached individuals
2	Frackowiak et al. (2023)	Longitudinal	Negative emotions (anger, loneliness, sadness, feeling upset)	Modified version of the DEQ*	Levels of negative emotions are significantly higher on days with Pphubbing compared to days without Pphubbing; Phubbing intensity predicts sadness positively;
3	Mahmud et al. (2023)	Cross-sectional correlational study	Life satisfaction	SWLS	Pphubbing associated with affected life satisfaction through smartphone conflict and relationship satisfaction
4	Roberts and David (2016)	Cross-sectional correlational study	Life satisfaction; Depression	Life satisfaction: self-constructed scale Depression: PHQ-4	Negative impact of Pphubbing on depression partially explained by its effects on relationship satisfaction, which in turn influences life satisfaction

Author	Study Design	Mental Health Variable	Outcome Measures	Outcomes
5 Schokkenbroek et al. (2022)	Cross-sectional correlational study	Anxiety	Abbreviated version of the GAD-7	Pphubbing was positively associated with anxiety; The relationship between Pphubbing and EPS was partly mediated by anxiety through decreased partner responsiveness
6 Thomas et al. (2022)	Longitudinal	Personal well-being (including depressed and anxious mood, and self-esteem); Anger/frustration	Modified version of the PHQ-4 and SISE; Self-generated scale for anger/frustration	No significant associations between Pphubbing and anxious or depressed mood; Significantly higher levels of anger/frustration on days with higher Pphubbing
7 Wang et al. (2017)	Cross-sectional correlational study	Depression	The Centre for Epidemiologic Studies Depression Scale	Pphubbing had a significant indirect effect on depression through relationship satisfaction
8 Yam (2022)	Cross-sectional correlational study	Life Satisfaction	SWLS	Relationship satisfaction partially mediated the association between Pphubbing and life satisfaction

Note: PHQ-4 = Patient Health Questionnaire, DEQ = Discrete Emotions Questionnaire, SWLS = Satisfaction with Life Scale, GAD-7 = Generalized Anxiety Disorder Scale, SISE = Single Item Self-Esteem Scale

Study Samples

Inclusion Criteria

Considering the second objective the selected study samples are of interest (see Table 3). Within the included studies, samples involved in various forms of romantic relationships have been included. Firstly, most studies specified being in a romantic relationship as an inclusion criterion for participants ($n = 6$). One study did not specify anything about their participants besides being US adults (Roberts & David, 2016). Further, another study did not include any inclusion criteria regarding involvement in a romantic relationship, but they did specify that 66% of participants were currently in a romantic relationship and that the remaining participants were instructed to think of their most recent relationship when answering their survey questions (David & Roberts, 2021). Within those studies that did formulate being in a romantic relationship as an inclusion criterion, some further specifications can be found. Firstly, Frackowiak et al. (2023) limited their focus on heterosexual relationships and further required a minimum of two years of relationship duration as well as no children. Moreover, Thomas et al. (2022) required a minimum of six months of relationship duration from their participants. Additionally, Wang et al. (2017) focused only on married adults.

Diversity of the Samples

However, half of the studies did not provide any information regarding the kind of romantic relationships and sexual orientations that are present in their sample ($n = 4$). Two studies could be found that provide some information regarding the form of relationship ($n = 2$), namely the paper by Frackowiak et al. (2023) requiring heterosexual relationships without children and a minimum duration of two years and Wang et al. (2017) who included only married individuals in their study. However, two studies do provide more detailed information about the included romantic relationships ($n = 2$). Firstly, Yam (2022) differentiates between dating relationships, being engaged, and being married in the included sample. Secondly,

Thomas et al. (2022) provide additional information about their sample. Thus, they share the sexual identities of their participants, differentiated as straight, bisexual, lesbian, gay, asexual, and pansexual as well as the type of relationship, including dating relationships, committed relationships, and being married and how many participants have children.

Gender and Mean Age

Finally, five of the included studies specified the mean age of their participants ($n = 5$). The provided mean ages vary from 31.06 to 40.5 years. Additionally, considering the representativeness of the included papers, over half of the studies, had mostly female participants included in their samples ($n = 5$), only one study could be found with fewer females than males ($n = 1$) and another study had the same amount of male and female participants ($n = 1$). One study did not indicate the gender of participants ($n = 1$).

Conclusions

In summary, most studies formulated an inclusion criterion requiring their participants to be in a romantic relationship. While half of the included studies did not further specify the form of a romantic relationship, the other half provided further details regarding relationship duration, sexual orientation, or marital status of their participants. Variations in the included relationship durations and forms, from dating relationships to marriage, could be observed. Additionally, participants from diverse sexual orientations were included, such as heterosexual, homosexual, bisexual, asexual, and pansexual individuals. However, only one study provided detailed information regarding the sexual orientations present in their sample and another study had heterosexuality as an inclusion criterion. The remaining studies did not report any information regarding the diversity of sexual orientations of their samples. Next, five studies included information regarding the mean age of participants, which ranged from 31.06 to 40.5 years. Finally, gender distribution within the studies varied, with five studies having more female participants while others displayed a more balanced gender distribution. One study did not provide information regarding the gender of the included participants.

Table 3*Sample Characteristics*

	Author	Sample Size	Population	Gender	Mean Age	Relationship Forms and Orientations
1	David and Roberts (2021)	$n = 300$	Adults over 18 who are or were in a romantic relationship	50% female	$M = 35, SD = 9.46$	n.a.
2	Frackowiak et al. (2023)	$n = 133$	Adults over 18 in a heterosexual relationship (>2 years) without children	51.9% female	Females: $M = 33.7, SD = 10.39$ Males: $M = 31.06, SD = 10.35$	Heterosexual relationship without children
3	Mahmud et al. (2023)	$n = 150$	Adults over 18 in a romantic relationship	43% female	$M = 37.5, SD =$ n.a.	n.a.
4	Roberts and David (2016)	$n = 145$	Adults over 18	n.a.	n.a.	n.a.
5	Schokkenbroek et al. (2022)	$n = 346$	Adults over 18 in a romantic relationship	75.7% female	$M = 40.5, SD =$ 15.84	n.a.

Author	Sample Size	Population	Gender	Mean Age	Relationship Forms and Orientations
6 Thomas et al. (2022)	$n = 75$	Adults over 18 in a romantic relationship (> 6 months) living with their partner	69.3% female 2.7% non-binary 1.3% transmasculine 1.3% did not disclose	$M = 32, SD = 10.24$	Sexual Orientation: 75% straight; 15% bisexual; 5% lesbian; 3% gay; 1% asexual; 1% pansexual Relationship status: Dating (3%); Committed relationship (52%); Married (45%); Children: With children (29%)
7 Wang et al. (2017)	$n = 243$	Married adults over 18	64.2% female	n.a.	Married
8 Yam (2022)	$n = 308$	Adults over 18 in a romantic relationship	78.9% female	$M = 31.1, SD = 7.93$	Dating (37.7%); Engaged (6.2%); Married (56.2%)

Note: n.a. = not available

Discussion

This scoping review aimed at providing an overview of the different mental health outcomes that have been studied in association with Pphubbing in romantic relationships, as well as the different samples that have been included in this research. Previous literature suggested a link between Pphubbing behaviours and adverse mental health outcomes in romantic relationships (Papacharissi, 2018; Thomas et al., 2022; Utami et al., 2021; Wang et al., 2017; Yam, 2022; Zhan et al., 2022). Further, sexual minorities could be found especially vulnerable to suffering from mental health problems, thus, evaluating potential risk factors for their mental health is important (Plöderl & Tremblay, 2015). However, since these minorities seem unrepresented in the research on Pphubbing and mental health outcomes in romantic relationships, providing an overview of the inclusivity of different samples and diverse forms of romantic relationships in the existing literature displays a crucial step for informing future research. Therefore, two research objectives have been formulated. First, what mental health outcomes have been studied as associated with phubbing in romantic relationships, and second, what samples have been studied in this research. In total, eight papers have been evaluated regarding their sample characteristics, sexual orientations, relationship forms, age and gender of participants, study characteristics, mental health variables, measures, and outcomes.

Main Findings

Mental Health Outcomes

The first point of exploration considered what mental health outcomes have been studied in association with Pphubbing. The findings of this review reveal that the studied mental health outcomes were diverse, including general mental health variables such as *life satisfaction*, and *well-being*, as well as mood-related constructs like *anxiety*, *depression*, *negative emotions*, and *anger/frustration*. This variety shows that Pphubbing can affect not only one but multiple aspects of mental health, reflecting its potential impact on the mental

health of individuals who are being exposed to Pphubbing in their romantic relationships. Further, Pphubbing was consistently linked to various negative mental health outcomes within the included studies, such as reduced *life satisfaction* and *well-being*, increased levels of *depression*, *negative emotions*, *anxiety*, or *anger/frustration*. This list of outcomes emphasises the potential that Pphubbing has in displaying a relational issue associated with a broad variety of negative mental health outcomes. Thus, individuals who are exposed to phubbing behaviours by their partners might be more prone to suffer from such mental health problems, compared to their counterparts who are not experiencing Pphubbing. However, further research is needed to confirm this assumption. Nonetheless, the reported findings of this review are in line with previous research which pointed out that Pphubbing was associated with different negative consequences, such as feeling unimportant compared to the digital content or reduced relationship satisfaction (Papacharissi, 2018; Thomas et al., 2022; Utami et al., 2021; Wang et al., 2017; Yam, 2022; Zhan et al., 2022).

Additionally, several moderating and mediating variables could be found in the papers included in this review, such as relationship satisfaction, romantic relationship quality, attachment anxiety, partner responsiveness, cell phone conflict, or jealousy. Seven out of the eight studies included such variables, which is interesting as it suggests a rather consistent recognition of a more complex relationship between Pphubbing and mental health outcomes across the available research. This highlights the awareness that the associations between Pphubbing and mental health outcomes are likely influenced by other factors. Furthermore, discovering mediating and moderating variables can shed further light on the underlying mechanisms of the relationships between Pphubbing and negative mental health outcomes. Of course, future research is needed to establish these assumptions. For example, relationship satisfaction could be found as a mediator between Pphubbing and depression, suggesting that Pphubbing could first be associated with a reduction in relationship satisfaction, which in turn can lead to increased depression (Wang et al., 2017). Similarly, attachment anxiety was found

as a moderator, revealing that individuals high in attachment anxiety might experience the negative effects of Pphubbing more intensely (David and Roberts, 2021). Therefore, it seems as if the proposed consequences of Pphubbing can be influenced by changes in relationship dynamics and moderated by individual differences, however, future research is needed to clarifying causality in these associations. Thus, the relationship between Pphubbing and adverse mental health outcomes might be indirect and influenced by several intermediate factors. Exploring such factors and, in future steps, clarifying the causality of these associations, can provide valuable information about the impact of Pphubbing on individuals.

Included Samples

For the second point of exploration, the included samples were of interest. The studies displayed considerable variations regarding their sample characteristics. Considering the inclusion criteria, most studies specified that participants had to be in a romantic relationship. Overall, little focus could be found regarding the sexual orientations of participants or the diversity of their relationship forms. Only two studies could be found that differentiated between types of romantic relationships such as dating, engaged, and married relationships but they did not specify the sexual orientations of the samples, as well as one study that focused on married couples only without specifying any sexual orientations (Thomas et al., 2022; Wang et al., 2017; Yam, 2022). Therefore, five out of eight studies did not report any information about the romantic relationship types of their participants. And further noticeable, only two studies provided information about sexual orientations of their samples. Regarding inclusivity and the representation of sexual minorities in research, these results emphasise a lack of awareness. This is interesting since the papers included in this review are all focusing on research on phubbing in romantic relationships and the potential consequences for partners. However, there seems to be little attention paid to the added value of differentiating between types of relationships or sexual orientations.

Two studies did specify the sexual orientations of their samples. Frackowiak and colleagues (2023) did include heterosexual participants only. Therefore, it is apparent that they did not include any sexual minorities in their research. However, by specifying their focus, this information can be collected, and they enable the evaluation of inclusivity in research. Furthermore, only one study reported including diverse sexual orientations, such as straight, bisexual, lesbian, gay, asexual, and pansexual (Thomas et al., 2022). In addition to the mentioned value for evaluating the inclusivity of sexual minorities, including this information also allows to compare how many participants identify as a sexual minority group. This provides an opportunity for research to compare the found associations between the differentiated sexual orientations, which could bring further insights and inform future research or practice. In summary, the lack of information regarding sexual orientations and the diversity of the included samples potentially limits the generalizability of the studies' findings and makes it difficult to understand what kinds of romantic relationships and sexual orientations are being represented or neglected in this research and require further attention. This shows an important gap in the existing literature. As emphasised by Plöderl & Tremblay (2015), sexual minorities are confronted with unique challenges related to their sexual orientation and minority stress. Therefore, it is unclear whether the adverse mental health outcomes linked to Pphubbing are the same for them.

Further, sample inclusivity can also be related to other sample characteristics. For example, most studies showed a higher proportion of female participants, displaying an additional threat to generalizability. Overall, a lack of specific information regarding the romantic relationship forms as well as sexual orientations present in the samples could be noted. However, this information could provide additional value to the research findings of the included papers, such as whether and to what extent minorities are being represented as well as potential differences compared to other groups. Sexual minorities might be a more vulnerable group regarding mental health problems and, on the other hand, profit from the

benefits of romantic relationships (Baam et al. 2014; Kornblith et al. 2016; Plöderl & Tremblay, 2015; Sarno et al. 2022). Nevertheless, smartphone usage is on the rise and the influence it might have on such protective factors becomes more important. Pphubbing is still a rather novel topic of interest, but with its potential of decreasing important factors such as relationship satisfaction, particularly for this subgroup, it needs to be studied more inclusively.

Limitations

Even though valuable findings and insights could be gained with this scoping review regarding the diverse mental health outcomes related to Pphubbing in romantic relationships, as well as about the included samples, some limitations should be acknowledged. To begin with, the total number of included articles is rather small, due to multiple reasons. Firstly, the topic of Pphubbing is relatively new in research, the oldest papers that could be found within the included databases were published in 2016, which results in fewer available studies. Further, the search strategy focused on systematically searching relevant databases only, potentially neglecting additional valuable sources of information, such as through snowballing. Even though this method leads to better replicability of the conducted search, relevant sources might have been excluded (Wohlin et al., 2022). Therefore, papers that have been cited within the included articles but are not available in the searched databases or have not been identified with the used search string remain undetected. Overall, the small number of included papers reflects the little research available on Pphubbing in romantic relationships. Nevertheless, factors such as the systematic searching strategy and the used search string might have influenced this as well, however, the search was conducted following the PRISMA guidelines for scoping reviews as formulated by Tricco et al. (2018). Another limitation is that the literature search and evaluation were conducted by a single researcher. Thus, no inter-rater reliability could be provided. As argued by Stoll and colleagues (2019), it is recommended to include at least two researchers in the process of screening to increase the number of relevant articles and ensure that no relevant papers are overseen. The researcher

did provide information about the screening procedure and exclusion of articles, to ensure transparency and replicability. Nevertheless, the reliability of the process of the study inclusion might have been increased by involving another researcher in the procedure.

Recommendations for Future Research

This review did provide an overview of both, the different mental health outcomes that have been studied in association with Pphubbing in romantic relationships, and the samples that have been included in this research. Since providing such an overview, it also points out multiple gaps that should be paid attention to in future research. Firstly, a variety of additional variables could be found that were included as moderating and mediating variables in research on the relationship between Pphubbing and different mental health outcomes. However, there seems to be no clear evidence yet on how exactly Pphubbing influences those mental health outcomes and which variables are of importance. For example, David and Roberts (2021) concluded that individuals high in attachment anxiety might experience lower *well-being* when they experience Pphubbing, as it potentially increases their levels of romantic jealousy. Further, the research by Wang et al. (2017) found that the relationship between Pphubbing and *depression* was moderated by relationship length and mediated by relationship satisfaction only for those relationships seven years or longer. However, these findings need further research to be validated, preferably experimental or quasi-experimental studies to test the causality of the described associations.

A second recommendation concerns the reporting of information about the included samples. The observed lack of specified reporting regarding relationship forms and sexual orientations within the samples points out an important gap. Providing detailed information about the sample characteristics, including age, gender, sexual orientation, and relationship form is a crucial step for future research. By including such information, the representativeness and generalizability of the findings are being transformed since variations in those characteristics might significantly influence the study outcomes. Further, being

specific regarding the relationship forms and sexual orientations helps to identify what groups are represented in existing research and points out gaps. Within the results of this review, it becomes apparent that sexual minorities have not been specifically mentioned in the samples, despite one study. Therefore, future research should specifically focus on sexual minorities, to investigate whether the adverse mental health outcomes that have been linked to Pphubbing differ for these groups. Nevertheless, due to the lack of reporting of information about these sample characteristics, it is difficult to differentiate whether sexual minorities have not been included in the research or whether they simply have not been reported. Thus, both points are of tremendous importance and should be considered in future investigations.

Conclusions

In conclusion, this scoping review aimed at investigating the extent to which Pphubbing has been linked to different mental health outcomes in the context of romantic relationships, and further, what samples have been included in that research. The findings highlight that Pphubbing has been associated with various adverse mental health outcomes among different samples, including *life satisfaction, depression, negative emotions, anxiety, well-being, and anger/frustration*. This highlights the importance of further investigating Pphubbing and its consequences, as it displays a serious issue, potentially harming individuals who are confronted with it. Further, a lack of detailed reporting regarding sample characteristics, such as sexual orientation or relationship form, was observed which threatens the representativeness and generalizability of existing research and underlines the need for future research on Pphubbing and mental health outcomes in sexual minorities.

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