



# Phubbing in romantic relationships and retaliation: A daily diary study

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## ABSTRACT

The term “phubbing” is a portmanteau of “phone” and “snubbing”, representing interruptions in face-to-face interactions due to smartphones acting as a distractor. Phubbing has previously been associated with several negative relational and personal outcomes (i.e., reduced relationship satisfaction, low mood, and increased interpersonal conflict). The present study explored the consequences of partner phubbing on phubbee’s (i.e., the recipient’s) daily reports of relationship satisfaction and personal well-being. To extend current phubbing literature, we assessed how phubbees responded to being phubbed (ignoring, resentment, curiosity, retaliation, conflict) and their motivations for engaging in any retaliatory behaviours. Participants ( $N = 75$ ) completed a 10-day daily diary study, consisting of short baseline and daily measures (perceived partner phubbing, relationship satisfaction, depressed mood, anxious mood, self-esteem, anger/frustration, responses to phubbing, and, if applicable, motivations for retaliation). Results revealed phubbees reported lower relationship satisfaction and greater feelings of anger when daily perceived partner phubbing was high. Likewise, when perceived partner phubbing was high, phubbees reported greater curiosity, resentment, and retaliation. Revenge, need for support, and need for approval were all significant motivations for retaliation. Findings reinforced the emotional and behavioural impact of phubbing on the recipient.

## 1. Introduction

In the modern “digital” era, smartphones have not only become a significant part of one’s personal life, but they have become integral in a society that functions both online and offline. The way in which we interact with others has, as a result, adapted to keep up with the fast-paced digital climate. This may be particularly evident in romantic relationships in which smartphones allow both parties to establish (Cizmeci, 2017) and maintain romantic interest (Jin & Peña, 2010).

The adverse effects of smartphone use on face-to-face interactions are evident, however. Research suggests smartphones interfering with in-person interactions may lead to conflict as individuals become increasingly suspicious of their partner (Cizmeci, 2017). The ease and accessibility of smartphones can, therefore, aid individuals in forming connections where proximity acts as a barrier but hinder face-to-face interactions when one party cannot control usage. Researchers coined this behaviour “phubbing.”

### 1.1. Perceived partner phubbing and conflict in relationships

The term “phubbing”, a portmanteau of “phone” and “snubbing”,

refers to “being snubbed by someone using their cell phone when in your company” (Roberts & David, 2016, p. 134). Although a relatively new phenomenon, since the term first emerged in 2012, academic interest in phubbing behaviour has steadily increased (Capilla Garrido et al., 2021). Phubbing behaviours are related to a wider construct known as “technoference”: “everyday intrusions or interruptions in couple interactions or time spent together that occur due to technology” (McDaniel & Coyne, 2016, p. 85). Such interruptions may be due to the compelling allure of smartphones and seem to be particularly detrimental within romantic relationships. This type of phubbing, i.e., partner phubbing (Pphubbing), has been associated with several negative outcomes. The aims of the present study are threefold: (1) to explore the influence of daily perceived partner phubbing on daily personal and relational outcomes, (2) to assess how participants respond to daily perceived partner phubbing, (3) to understand the motivations for choosing to retaliate against perceived partner phubbing.

According to previous literature, phubbing increases couples’ phone-related conflict, subsequently lowering relationship satisfaction (McDaniel et al., 2018). Likewise, phubbing has been found to significantly reduce marital quality (Khodabakhsh & Ong, 2021). In an experimental study by Chotpitayasunondh and Douglas (2018),

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participants viewed a 3-min dyadic conversation and were asked to imagine themselves as one of the figures in the animation. Afterwards, they were assigned to one of three conditions in which they were: not phubbed at all, partially phubbed, or consistently phubbed. Findings demonstrated that being phubbed threatened individual sense of belonging, which was associated in turn with reduced communication quality and relationship satisfaction.

Being attentive in the presence of one's partner often has a large effect on how the individual perceives the current state of the relationship (McDaniel & Drouin, 2019). Phubbing, however, introduces a third competitor into the relationship. As the displacement hypothesis suggests, smartphones consume valuable time that could otherwise be spent with one's partner (Abbasi, 2018). Not only does phubbing evoke feelings of resentment and jealousy from the phubbee (Krasnova et al., 2016), but it also prompts them to re-evaluate satisfaction within the relationship.

### 1.2. Emotional outcomes of perceived partner phubbing

Research has explored the association between being phubbed and relationship dissatisfaction. Research has also examined the association between being phubbed and its impact on the phubbee's personal well-being. In a study of 243 Chinese married individuals, participants who perceived greater partner phubbing reported significantly lower relationship satisfaction. Additionally, lower relationship satisfaction indirectly predicted greater depressive symptoms (Wang et al., 2017). Another study explored the qualitative responses of 200 university students when phubbed; 83% reported annoyance in response to being phubbed and 66.5% reported feeling angry (Nazir, 2017). Likewise, Krasnova et al. (2016) found mediation effects of jealousy on perceived partner phubbing and relational cohesion; Perceived phubbing induced more jealousy-related emotions (62.3%), including anger in "generation Y" smartphone users. Notably, some individuals reported feeling indifferent (38.1%), implying mixed emotional responses towards perceived phubbing. The association between partner phubbing and lower personal well-being is replicated within the wider technofence literature. A 14-day daily diary study, conducted by McDaniel and Drouin (2019), explored the impact of technofence on couple interactions and individual well-being. Findings revealed that on days when technofence was perceived as high, individuals reported lower quality of interactions, increased conflict, and lower mood. Such findings are consistent with the notion that being phubbed is largely linked to negative emotional outcomes for its recipient.

Negative emotions are often evoked when an individual feels socially excluded or ostracized in some manner (Chotpitayasunondh & Douglas, 2018). Feelings of exclusion, along with perceived partner responsiveness and perceived intimacy, were found to be significant mediators of perceived phubbing and relationship satisfaction (Beukeboom & Pollmann, 2021). Social exchange theorists argue relationships are based on "interdependency". From the first initial meeting to the formation of a committed relationship, individuals often evaluate the costs against the benefits of the relationship via actions displayed by their partner (Burgess & Huston, 2013). Equity theory (Hatfield & Traupmann, 1981) proposes a similar theoretical standpoint: Equal investment in the relationship (rewards/costs) helps to maximise outcomes (satisfaction). When one individual perceives unequal investment, this increases distress, and they work harder to maintain equity. Being phubbed by one's partner may be an indicator of unequal investment. When individuals experience partner phubbing, they perceive lower partner responsiveness, lower intimacy, and greater feelings of exclusion (Beukeboom & Pollmann, 2021; McDaniel & Wesselmann, 2021; Vanden Abeele et al., 2019). These negative evaluations may then be attributed to the failings of the relationship itself, resulting in lower relationship satisfaction (e.g., Chotpitayasunondh & Douglas, 2018; McDaniel et al., 2018; Wang et al., 2017). Alternatively, the phubbee may perceive lower partner responsiveness and greater social exclusion as a sign of

their own shortcomings. Feelings of distress and anxiety then arise due to not being deemed interesting enough to hold their partner's attention (Chotpitayasunondh & Douglas, 2018), resulting in lower self-esteem and emotional well-being (e.g., McDaniel & Drouin, 2019; Wang et al., 2017).

### 1.3. Responses to perceived phubbing

Although the emotional outcomes of partner phubbing on the phubbee have been examined in previous literature, little is known regarding retaliation against Pphubbing. How does the phubbee respond to such behaviour? And what are their motivations to do so/avoid doing so? Research shows that a common response to Pphubbing is to simply ignore it (Kelly et al., 2017). Some individuals chose to intervene when phubbed by their partner, others copied partner's phubbing behaviour (Krasnova et al., 2016). The motivations for each retaliation strategy remain unclear. One benefit of ignoring phubbing may be to retain the peace, regardless of the negative impact on phubbee's own well-being. Imitation of Pphubbing, on the other hand, implies a tit-for-tat strategy. Alternatively, in interviews conducted on Danish college students, participants admitted to phubbing others despite being aware of how annoying it was (Aagaard, 2020). These findings suggest imitation of partner phubbing may, instead, be attributed to a lack of self-control in the presence of technology, coined by Aagaard (2020) as "digital akrasia." Understanding the behavioural responses of the phubbee and disentangling motivations behind why the phubbee may phub others is therefore the primary focus of the current study.

In the present study, we aim to replicate previous findings of daily perceived partner phubbing on personal and relational outcomes (i.e., relationship satisfaction, depressed mood, anxious mood, self-esteem, anger/frustration). We also aim to address novel research questions on whether daily perceived partner phubbing facilitates retaliation behaviour in addition to other previously established responses, and what motivations phubbees endorse for imitating their partner's smartphone use (i.e., revenge, boredom, seeking support, seeking approval). To extend upon previous research which has been largely cross-sectional, we have adopted a daily diary approach.

To summarise, in this paper we explore how perceived partner phubbing influences one's daily reports of relationship satisfaction, anger/frustration, personal well-being, and responses to phubbing, including desire to retaliate, and motives for retaliation. Based on previous research, we predicted that on days when perceptions of phubbing are high, individuals will be more likely to report lower levels of relationship satisfaction (H1) and higher levels of anger/frustration (H2). We also predict on days when perceptions of phubbing are high, individuals will be more likely to report lower personal well-being (H3). In response to perceived partner phubbing, we predict that individuals will respond in the following ways (H4a): ignoring phubbing, feeling resentment, being curious, creating conflict and retaliating. Retaliation, in particular, is our novel prediction; On days when perceptions of phubbing are high, individuals will be more likely to engage in retaliatory behaviour (H4b). As part of this novel hypothesis, we anticipate the individuals who choose to retaliate against partner phubbing will have various motivations for doing so (H4c). Boredom, revenge, a need for support, and a need for approval were the motivations explored in this study. Through this, we gain a novel understanding of why individuals who are phubbed may engage in tit-for-tat retaliation.

## 2. Method

### 2.1. Participants

This study has been pre-registered on the Open Science Framework (<https://osf.io/f3uhn/>)<sup>1</sup>. During preregistration, the target sample size (150) was determined based on previous studies using the daily diary approach (e.g., Kushlev & Heintzelman, 2017). Due to time and cost limitations, however, this was not achieved. A power analysis was conducted using Murayama et al. (2022) “summary-statistics-based power analysis for mixed-effects modelling” web app. This was performed post hoc using multilevel data from the current study ( $N = 75$ ) exploring the effect of daily perceived partner phubbing on daily relationship satisfaction ( $t = -3.03$ ). With an  $\alpha = 0.05$  and power = .80, results proposed a sample of 67 would be required to detect an effect with 80% probability.

Individuals were recruited via social media (e.g., Facebook, Twitter, LinkedIn), online forums, and word of mouth. Inclusion criteria required all participants be: (a) aged 18 or over, (b) currently in a romantic relationship  $\geq$  six months, (c) living with their current partner. Participants who had only completed the baseline survey were not included in the final sample. The initial sample included 77 participants, two of which were excluded due to incomplete baseline data and not meeting required relationship length.

A total of 75 participants ( $M_{age} = 32.00$ ,  $SD = 10.24$ ) completed the baseline diary and at least one daily diary. The majority of participants identified as female (52), with the remaining participants identifying as male (19). Two participants identified as non-binary and one as trans-masculine. One individual chose not to disclose. When asked to describe their sexual orientation, 75% identified as straight, 15% as bisexual, 5% as lesbian, 3% as gay, 1% as asexual, and 1% as pansexual. Participants were also asked to report current relationship status. Dating was the least selected option (3%) with the majority of sample either in a committed relationship (52%) or married (45%); 29% had children whereas 71% did not. The average length of participants' relationship was approximately 8 years ( $SD = 8.08$ ). Relationship length ranged from 6 months to 40 years.

A large portion of the sample stated they were either employed full time (57%) or students (29%). Several participants selected “other” for occupation (8%), for reasons such as working two jobs or living with a disability. The remaining few stated they were employed part time (3%) or homemakers (3%).

Data collection ran from March to August 2021. Due to the COVID-19 pandemic lockdowns during this time, we asked participants to report own and partner remote working status. Fifty-three percent of the sample did not work from home at the time of data collection. However, 45% stated they were currently working from home. Likewise, 45% stated their partner was currently working from home, with 55% stating partner was currently not working from home. Such contextual knowledge is important in understanding how phubbing disrupts the quality of face-to-face interactions during working hours.

### 2.2. Procedure

Ethical approval was attained from the Faculty Ethics Committee at University of Southampton. Prior to participation, participants were asked to read the study information sheet and provide informed consent.

The study was advertised as a diary study on “Mobile Phone Use in Romantic Relationships”. During the study, participants were asked to complete one baseline diary followed by nine short daily diaries. All daily diaries were created and distributed online via Qualtrics. Participants completed an average of 5.11 days, including baseline. In total, the

study took approximately one hour spanning across 10 days (5min/day). The baseline measures (Day 1) consisted of demographic questions (e.g., sexual orientation, employment status, relationship length), and measured both attachment style and narcissistic traits<sup>2</sup>. Individuals who completed the baseline diary and had not met the inclusion criteria were unable to continue with the study. The following daily diaries measured perceived partner phubbing, responses to partner phubbing, relationship satisfaction, personal well-being (i.e., depressed mood, anxious mood, self-esteem), and anger/frustration. The daily measures were randomised to prevent order effects.

Upon completion of the baseline measures, participants were entered into a prize draw to win 1 of 3 £50 Amazon vouchers. They were instructed that each daily diary completed would provide them with an additional five raffle tickets into the prize draw. This incentive was implemented to increase retention. Debriefing occurred once the participant had completed the study. They were provided with the aims and rationale for the study, as well as researcher contact information and relationship counselling signposting.

### 2.3. Measures

#### 2.3.1. Daily perceived phubbing

Daily perceptions of partner phubbing was measured using four items ( $\alpha = 0.81$ ), adapted from the Pphubbing Scale (Roberts & David, 2016). The four items were: “Today, my partner placed his/her mobile phone where they could see it when we were together”, “Today, my partner glanced at his/her mobile phone when talking to me”, “Today, when my partner's phone rang or beeped, they pulled it out even if we were in the middle of a conversation” and “Today, when my partner and I were together, my partner's mobile phone use interfered with our interactions.” Participants were asked daily to report their partner's mobile phone use, using a 5-point Likert scale (1 = *not at all*, 5 = *a great deal*). The original Pphubbing scale was a 9-item measure, high in reliability and validity, devised to assess perceptions of phubbing between romantic partners specifically. The four items chosen for this study were selected to reduce daily burden on participants.

#### 2.3.2. Daily relationship satisfaction

The Perceived Relationship Quality Component Inventory satisfaction subscale (PRQC; Fletcher et al., 2000) was used to measure relationship satisfaction in this study. The PRQC Inventory consists of six domain-specific constructs devised to assess global relationship quality: satisfaction, intimacy, trust, love, passion, and commitment. Participants were asked to report their attitude towards their current romantic relationship that day using the 3-item satisfaction subscale ( $\alpha = 0.91$ ). Items included: “Today, how satisfied are you with your relationship?”, “Today, how content are you with your relationship?”, “Today, how happy are you with your relationship?”. Participants rated these items on a 7-point Likert scale, ranging from 1 (*not at all*) to 7 (*extremely*).

#### 2.3.3. Daily self-esteem

One facet of daily personal well-being assessed in this study included self-esteem, measured using the Single-Item Self-Esteem Scale (SISE; Robins et al., 2001). Each day, participants were asked to rate a single statement regarding how they felt that day: “I have high self-esteem”, rated on a 7-point Likert scale (1 = *not very true of me*, 7 = *very true of me*). Such short form scales were prioritized within this study to avoid participant fatigue and attrition.

<sup>1</sup> Some changes were made to the analysis plan following suggestions from reviewers.

<sup>2</sup> Attachment style and narcissistic traits were two predictors assessed during data collection. However, the focus of the present paper is solely on partner phubbing and retaliation.

### 2.3.4. Daily depressed/anxious mood

Another aspect of daily personal well-being assessed in the present study included depressed and anxious mood. This was measured using the 4-item Patient Health Questionnaire (PHQ-4; Kroenke et al., 2009). The original instructions were modified, replacing “Over the last two weeks, have you been bothered by any of the problems?” with “Today, have you been bothered by any of these problems?”. Items assessed emotional disturbances regarding anxious mood (“Feeling nervous, anxious, or on edge”, “Not being able to stop or control worrying”) as well as depressed mood (“Feeling down, depressed, or hopeless”, “Little interest or pleasure in doing things”). Participants were asked to rate these items using a 4-point Likert scale (1 = *not at all*, 4 = *a great deal*). Scores ranged from 0 to 12, with higher scores representing higher severity. Internal consistency was good for both depressed ( $\alpha = 0.81$ ) and anxious ( $\alpha = 0.88$ ) moods.

### 2.3.5. Daily anger/frustration

Anger/Frustration was measured using three items devised by the research team: “Today, I felt angry”, “Today, I felt irritated”, “Today, I felt annoyed”. Each daily diary required participants to report how they felt that day on a 5-point Likert scale, ranging from 1 (*not at all*) to 5 (*a great deal*). Cronbach’s alpha was .90 demonstrating great internal consistency.

### 2.3.6. Daily responses to being phubbed

If participants reported partner phubbing, they were presented with six questions assessing how they responded. These items were: “I told them I was not happy” (conflict), “I asked them what they were looking at” (curiosity), “I argued with them about their phone use”(conflict), “I felt resentful about their phone use”(resentment), “I ignored their phone use”(ignored) and “I picked up my own phone and used it”(retaliation). Participants were asked to rate the extent to which they responded to being phubbed using a 9-point Likert scale (1 = *not at all*, 5 = *a moderate amount*, 9 = *a great deal*). Since items measured different constructs they were analysed separately during analysis rather than as a composite measure. Due to overlap between “I told them I was not happy” and “I argued with them about their phone use.”, the average of the two items, was used to compute an index of “conflict” in response to partner phubbing.

### 2.3.7. Daily motivations for retaliation

When completing the daily response items, if the participant rated the item “I picked up my own phone and used it” (e.g., retaliation) above a 1 on the Likert scale, they were presented with an additional 4-item scale devised by the research team. Participants were asked to rate, using an 8-point Likert scale (1 = *strongly disagree*, 8 = *strongly agree*), why they chose to pick up their own phone and use it. Items included: “To get back at my partner”, “I was bored”, “To seek support from others”, “To seek approval from others”. These items were treated individually during analysis.

## 2.4. Data analysis

The data in the present study utilised a nested design i.e., days (level 1) nested within individuals (level 2). Therefore, hierarchical linear modelling (HLM) was conducted using R (R Team, 2021). Level 1 variables represented within-person variations (i.e., daily perceived phubbing effects on daily response behaviour, daily relationship satisfaction, daily anger/frustration, daily depressed mood, daily anxious mood, daily self-esteem). This allowed for analysis exploring daily fluctuations in emotions and behaviour based on perceived partner phubbing. Time (scaled to start at 0) was factored in as a covariate throughout. Restricted maximum likelihood (REML) was used to handle missing data. Due to the complexities of multilevel modeling, there has been no clear agreement on appropriate measures of effect size (Peugh, 2010). Therefore, we report marginal and conditional R squared values for

significant effects, as recommended by Nakagawa and Schielzeth (2012).

## 3. Results

During data cleaning, duplicate participant surveys pertaining to one day were removed. Checks for normality revealed skewness for certain variables, including conflict, motivation for retaliation: revenge, motivation for retaliation: support, and motivation for retaliation: approval. These variables were log transformed prior to analysis. Daily phubbing was person-mean centred to test for within-person effects. Table 1 displays descriptive statistics for daily data across nine days.

Several multilevel models were conducted, using the lme4 R package, to explore the nested data at a within-persons level (level 1). All models included both random intercepts and random slopes.

All supplementary materials, including data and R code, can be found on OSF (<https://osf.io/f3uhn/>).

### 3.1. Daily perceived Pphubbing and daily outcomes

#### 3.1.1. Daily relationship satisfaction

On days in which perceptions of Pphubbing were high, participants reported significantly lower relationship satisfaction ( $B = -0.19$ ,  $SE = 0.06$ ,  $t(371) = -3.03$ ,  $p = .003$ ,  $R^2_m = 0.01$ ,  $R^2_c = 0.72$ ), replicating findings of previous literature (H1).

#### 3.1.2. Daily anger/frustration

Participants also reported significantly greater levels of anger/frustration on days when perceptions of Pphubbing were high ( $B = 0.15$ ,  $SE = 0.05$ ,  $t(385) = 2.82$ ,  $p = .005$ ,  $R^2_m = 0.03$ ,  $R^2_c = 0.45$ ), replicating and extending previous literature (H2).

#### 3.1.3. Daily personal well-being

Depressed mood, anxious mood, and self-esteem were analysed as measures of daily personal wellbeing. Results revealed no significant associations between daily perceived Pphubbing and anxious ( $B = 0.03$ ,  $SE = 0.05$ ,  $t(386) = 0.65$ ,  $p = .515$ ) or depressed mood ( $B = 0.05$ ,  $SE = 0.04$ ,  $t(376) = 1.35$ ,  $p = .178$ ). Analysis also revealed no significant association between daily perceived Pphubbing and state self-esteem ( $B = -0.06$ ,  $SE = 0.08$ ,  $t(383) = -0.754$ ,  $p = .451$ ). Such findings failed to replicate that of previous literature which proposed several negative emotional outcomes of partner phubbing, thus our hypothesis was not supported (H3).

**Table 1**  
Descriptive statistics for all baseline and daily measures.

Variable	<i>M</i>	<i>SD</i>	<i>Skewness</i>	<i>Kurtosis</i>
Level 1				
Perceived partner phubbing	2.15	0.98	1.03	0.70
Response: Curiosity	2.95	2.39	0.99	−0.32
Response: Resentment	2.10	2.02	1.91	2.57
Response: Ignored	5.36	2.97	−0.17	−1.47
Response: Conflict	1.65	1.48	1.85	2.14
Response: Retaliation	3.42	2.70	0.70	−0.92
Motivation for retaliation: Revenge	1.71	1.60	1.81	1.89
Motivation for retaliation: Boredom	5.27	2.03	−0.46	−0.61
Motivation for retaliation: Support	1.77	1.65	1.68	1.41
Motivation for retaliation: Approval	1.50	1.36	2.33	4.37
Relationship satisfaction	5.79	1.30	−1.06	0.61
Anger/Frustration	1.68	0.88	1.70	2.82
Self-esteem	4.25	1.95	−0.17	−1.11
Anxious mood	1.69	0.81	1.14	0.55
Depressed mood	1.60	0.75	1.22	0.74

Note.  $N = 75$ . Only conflict, revenge, support and approval were log transformed. The new computed values are reported above for these variables.



### 3.1.4. Daily responses to being phubbed

Several responses towards Pphubbing were analysed: curiosity towards a partner's phone use, resentment, ignoring partner phubbing, conflict towards partner phubbing and tit-for-tat retaliation towards partner phubbing. Analysis revealed that on days when perceptions of Pphubbing were high, participants reported significantly greater curiosity ( $B = 0.62$ ,  $SE = 0.25$ ,  $t(243) = 2.45$ ,  $p = .015$ ,  $R^2_m = 0.03$ ,  $R^2_c = 0.18$ ), resentment ( $B = 0.48$ ,  $SE = 0.21$ ,  $t(238) = 2.31$ ,  $p = .021$ ,  $R^2_m = 0.02$ ,  $R^2_c = 0.28$ ), and retaliation ( $B = 0.75$ ,  $SE = 0.28$ ,  $t(244) = 2.72$ ,  $p = .007$ ,  $R^2_m = 0.04$ ,  $R^2_c = 0.15$ ). Daily Pphubbing was not associated with phubbees responding by ignoring their partner ( $B = -0.18$ ,  $SE = 0.32$ ,  $t(248) = -0.57$ ,  $p = .567$ ) or creating conflict ( $B = 0.05$ ,  $SE = 0.03$ ,  $t(234) = 1.90$ ,  $p = .059$ ). Results imply our hypothesis (H4a) was partially supported; Phubbees do indeed respond in various ways in response to being phubbed. However, this was not found for all assessed responses. Findings do however support our main novel hypothesis (H4b); Perceived partner phubbing was positively associated with phubbee tit-for-tat retaliation.

### 3.1.5. Daily motivations for retaliation

Alongside understanding how phubbees responded to partner phubbing, we assessed why one may engage in tit-for-tat retaliation behaviour (i.e., picking up one's own phone and using it as a response to Pphubbing). This novel research question aimed to address why phubbees retaliated against their partner. Four possible motives were: revenge, boredom, need for support, need for approval. On days when perceptions of Pphubbing were high, individuals reported significantly higher agreement with the following motivations for retaliation: revenge ( $B = 0.04$ ,  $SE = 0.02$ ,  $t(169) = 2.23$ ,  $p = .027$ ,  $R^2_m = 0.01$ ,  $R^2_c = 0.67$ ), need for support ( $B = 0.06$ ,  $SE = 0.02$ ,  $t(167) = 2.90$ ,  $p = .004$ ,  $R^2_m = 0.02$ ,  $R^2_c = 0.64$ ), and need for approval ( $B = 0.04$ ,  $SE = 0.01$ ,  $t(152) = 2.57$ ,  $p = .011$ ,  $R^2_m = 0.01$ ,  $R^2_c = 0.76$ ). The strongest motivator for retaliation was boredom, however this effect was not significant ( $B = 0.19$ ,  $SE = 0.16$ ,  $t(145) = 1.18$ ,  $p = .238$ ,  $R^2_m = 0.04$ ,  $R^2_c = 0.67$ ). Thus, findings suggest phubbees may retaliate by phubbing their partner back due to various motivations but not all (H4c). Although exploratory, such novel findings are important in understanding reasoning behind partner phubbing and how the behaviour may persist in relationships via a need to retaliate.

## 4. Discussion

### 4.1. Perceived phubbing impact on the phubbees' relational and emotional outcomes

The present study aimed to replicate and extend three primary research questions. Firstly, we explored associations between perceptions of partner phubbing and daily reports of relationship satisfaction, anger/frustration, personal well-being (i.e., self-esteem, anxious and depressed mood). Consistent with previous research (Beukeboom & Pollmann, 2021; Chotpitayasunondh & Douglas, 2018; McDaniel et al., 2018; Roberts & David, 2016; Wang et al., 2017), we found daily perception of partner phubbing was associated with lower phubbee relationship satisfaction. Likewise, daily perceptions of partner phubbing was associated with greater feelings of anger/frustration. As previous research suggests, phubbing is linked to various negative relational and emotional outcomes for the recipient. These include, but are not exclusive to, jealousy and anger. Therefore, our findings replicate that of previous literature (e.g., Krasnova et al., 2016; Nazir, 2017).

To explore the relationship between perceived phubbing and personal well-being, we examined several daily indicators: anxious mood, depressed mood, and state self-esteem. Daily perceived partner phubbing was not significantly associated with daily anxious mood, depressed mood, nor self-esteem. Previous phubbing research has explored possible moderator effects of relationship length and relationship satisfaction on the link between partner phubbing and

depression (Wang et al., 2017). Partner phubbing was a significantly greater risk factor for depression only for married couples over seven years. Partner phubbing was also indirectly associated with depression, depending on relationship satisfaction levels. Despite the fact that the majority of our sample was in a committed relationship or married and a significant association between partner phubbing and lower relationship satisfaction was found, we failed to replicate any previously shown associations with depressive symptoms. Likewise, being phubbed did not seem to factor into participants' self-esteem or anxious mood levels. These non-significant findings may be due to the nature of the personal well-being items. Items such as "not being able to stop or control worrying" and "little interest or pleasure in doing things" may be too extreme to be elicited by being phubbed.

### 4.2. Perceived phubbing and Phubbee responses

Our second research question assessed how phubbees responded to perceived partner phubbing. Findings partially supported our initial prediction, implying that daily perception of partner phubbing was associated with greater phubbee curiosity and resentment. It was not, however, associated with increased conflict (i.e., expressing unhappiness and arguing) or ignoring partner's actions. Findings did, however, support our main novel prediction, suggesting that daily perception of partner phubbing was associated with greater tit-for-tat retaliation from the phubbee. This suggests that partner phubbing may elicit a variety of responses from those at the receiving end. These individuals may express more interest in what their partner is looking at, hold resentment for partner's inattention, or ultimately phub their partner back. Effects of daily partner phubbing may, however, not be strong enough to evoke conflict within the relationship. This may also explain why partner phubbing was not associated with personal wellbeing, as participants may report a mix of emotional reactions (e.g., anger, curiosity, resentment) and retaliate in the moment but not internalise such issues for it to significantly affect personal well-being.

Our final research question aimed to extend our understanding of reported phubbee tit-for-tat retaliation behaviour. We aimed to understand, for the first time, motivations behind retaliating against partner phubbing. Proposed motivations included revenge, boredom, a need for support and a need for approval from others. Perceived partner phubbing was positively associated with all assessed motivations, except boredom.

From a theoretical perspective (Hatfield & Traupmann, 1981), phubbing indicates unequal investment of resources (i.e., time and attention) towards the relationship. The phubbing recipient may work to match this level of investment. In the current context, this may have involved engaging in tit-for-tat retaliation behaviour to maintain equity in the relationship. Understanding what motivates the recipient of phubbing to phub their partner is important for understanding the nature of phubbing behaviour. Phubbing begins when one's partner chooses to disengage from the current in-person interaction, marking them as the phubber. The phubbee may perceive this as a lack of attention and choose to phub them in return. As suggested in the present study, this may be motivated by revenge i.e., the desire for their partner to feel how they themselves felt, thus maintaining equity in the relationship. On the other hand, it may be that individuals look to seek social support or approval from others via their smartphones instead of their partner. Despite some previous findings implying phubbing occurs as a means to dispel boredom (Al-Saggaf et al., 2019) and boredom being reported by participants as the strongest motivator, we found no significant associations with daily perceptions of partner phubbing.

Although there may be various motivators for retaliatory phubbing, findings suggest partner phubbing operates as a vicious cycle. This may explain why, over time, phubbing is associated with several negative outcomes (i.e., relationship dissatisfaction, increased anger, resentment and tit-for-tat retaliation). It is important to note, however, that several outcomes of perceived partner phubbing were not detrimental to the

phubbee. There was no significant effect on phubbees' personal well-being. Similarly, some individuals responded to partner phubbing by simply asking their partner what they were looking at. By doing so, they may have mitigated any conflict from occurring (Beukeboom & Pollmann, 2021).

#### 4.3. Strengths

The majority of previous phubbing research has relied solely on cross-sectional designs (e.g., Beukeboom & Pollmann, 2021; Khodabakhsh & Ong, 2021; Wang et al., 2017). Whilst this has formed a solid foundation for our understanding of phubbing and technofence, it is beneficial to explore the outcomes of partner phubbing using daily reports. Few phubbing studies have adopted the daily diary approach (e.g., McDaniel & Drouin, 2019). Utilizing the daily diary design meant we were able to assess outcomes of partner phubbing at both an individual (within-persons) and group (between-persons) level across multiple time-points. Secondly, student samples seemed to be the primary demographic of previous phubbing literature (e.g., Aagaard, 2020; Chotpitayasunondh & Douglas, 2018; Krasnova et al., 2016; McDaniel & Wesselmann, 2021; Nazir, 2017). As romantic relationships impact individuals at all stages in life, use of undergraduate/student samples limits the generalizability of any conclusions made. Thus, the present study addresses this limitation. A final and core strength of the current study is its exploration of responses to and retaliation against partner phubbing. Although research has explored various emotional and behavioural responses to phubbing (e.g., Aagaard, 2020; Krasnova et al., 2016; Nazir, 2017), we have explored this in further depth using a longitudinal approach and assessing tit-for-tat retaliation in particular. Furthermore, we have delved into possible motivations for phubbee tit-for-tat retaliation, a novel contribution to the current phubbing literature.

#### 4.4. Limitations and future directions

There are some limitations to this study, however. Firstly, reliance on self-report measures increases the chance of social-desirability bias. Individuals may not have reported their daily emotional responses or motivations for retaliation truthfully. Alternatively, individuals may have reported dissatisfaction or anger due to other existing problems in the relationship which cannot be attributed to phubbing. A social desirability measure should be included in future research to address this (e.g., Hart et al., 2015). Use of self-report measures also means directionality of associations cannot be accurately inferred. It may be that participants perceive greater partner phubbing when they are already angry or feeling dissatisfied that day. Therefore, findings here cannot make any causal claims regarding the relationship between perceived partner phubbing and subsequent outcomes for the phubbee. A mixed methods approach may be able to partially address this limitation. By incorporating open ended qualitative questions, researchers would be able to disentangle emotional and behavioural consequences due to partner phubbing from other actions displayed by one's partner. Secondly, variables measured within the present study were only assessed from the phubbees' perspective. Longitudinal dyadic data from both individuals in the relationship would allow for a better holistic understanding of perceptions and outcomes of partner phubbing (Lauranceau & Bolger, 2012). Finally, marginal and conditional  $R^2$  values of effect size suggest greater variance was explained by both fixed and random effects rather than fixed effects alone. Some variables, despite being statistically significant, yielded small effect sizes.

#### 4.5. Implications

Sharing one's phone usage with a partner may mitigate any negative outcomes of phubbing (Beukeboom & Pollmann, 2021). When individuals were given an important reason by a confederate partner for

phubbing, they reported lower feelings of exclusion compared to individuals who were given a trivial reason for phubbing (McDaniel & Wesselmann, 2021). An example of this would be the phubber communicating that they were replying to an important email with no direct intention for making their partner feel ignored. The phubbee may then be able to rationalize their perceptions of partner phubbing, mitigating its impact on relationship satisfaction and mood. Partner phubbing, within the present study, was associated with neutral responses (curiosity) as well as negative responses (anger, dissatisfaction, resentment, retaliation) from the recipient. Understanding how phubbing consequences can be mitigated may be especially important for couples hoping to adopt healthier relationship dynamics.

The present study also has implications for the current phubbing literature base. One's partner may indeed respond negatively towards exclusion and unresponsiveness from smartphone-related interruptions (Chotpitayasunondh & Douglas, 2018). Some findings relating to phubbing effects on relationship satisfaction and low mood remain consistent with previous literature (Chotpitayasunondh & Douglas, 2018; Kelly et al., 2017). Partner's inability to disengage from technology did not, however, influence relational conflict nor phubbees' individual well-being. Therefore, outcomes of being phubbed remain mixed: Phubbees do perceive lack of attention in face-to-face interactions negatively, but this may not have a significant long-lasting impact on the phubbee or the relationship.

## 5. Conclusion

To conclude, the present study explored daily perceptions of partner phubbing on reports of relationship satisfaction, anger/frustration, personal wellbeing (self-esteem, depressed/anxious mood). As expected, partner phubbing was significantly associated with lower relationship satisfaction and greater anger/frustration. No effects on personal wellbeing were found. Phubbee responses towards partner's phubbing (curiosity, resentment, conflict, ignoring, retaliating) and possible motives for tit-for-tat retaliation (boredom, revenge, support-seeking, approval-seeking) were also explored in this study. Interestingly, partner phubbing was significantly associated with the following phubbee responses: curiosity, resentment, and tit-for-tat retaliation. Partner phubbing has no significant effect on phubbees ignoring behaviour or creating conflict. Possible motivations for phubbee retaliation, albeit speculative, included using own phone as a means for revenge, support-seeking, or approval seeking. By exploring the consequences of excessive smartphone use, we were able to replicate some or challenge other findings of the existing phubbing literature. To our knowledge, we are the first to explore various retaliatory responses to phubbing using daily diary methods.

## Credit author statement

**Tessa T. Thomas:** Formal analysis, Data collection, Writing – original draft, Writing – Editing. **Dr Katherine Carnelley:** Conceptualisation, Methodology, Writing – review & editing, Supervision. **Dr Claire Hart:** Conceptualisation, Methodology, Writing – review & editing, Supervision.

## Declaration of interest

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