

Research Article

“I Can’t Believe I Phubbed Up Our Friendship!”: Examining Relationships between Loneliness, Problematic Smartphone Use, Friend Phubbing, and Life Satisfaction

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Received 17 August 2023; Revised 12 December 2023; Accepted 27 December 2023; Published 16 January 2024

Academic Editor: Mirko Duradoni

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As one of the dark sides of smartphone use, *phubbing* (i.e., snubbing others during face-to-face interactions by using their smartphones) has drawn increased attention in recent years. A growing literature on phubbing has widely examined psychological and social problems related to phubbing. However, very little is known about how certain psychological states and outcomes—mainly loneliness and life satisfaction—occur in relation to phubbing. This study examined the relationships between loneliness, problematic smartphone use, phubbing, and life satisfaction, particularly within friendships. For this study, college students ($N = 513$; 188 men, 323 women, and two others) aged 18 to 29 ($M_{\text{age}} = 19.85$ years) completed self-report measures online. Structural equation modeling was used to measure the model, and the relationships of this study were conducted via SPSS and AMOS. As expected, the model yielded a good fit, and the findings showed that loneliness positively and indirectly predicted the enactment of friend phubbing through its influence on problematic smartphone use, which negatively predicted life satisfaction.

1. Introduction

Phubbing is a compound word with “phone” and “snubbing,” which indicates a set of behaviors where people snub their partners during face-to-face interactions by giving more attention to using their smartphones than to their partners [1]. For example, if people stare at a smartphone screen with pop-up notifications, check or send messages, and scroll through social media posts in the presence of others, they phub others. They become phubbers when distracted by their device instead of focusing on their partner and communication.

Showing such behavior in any interpersonal setting may be rude, impolite, and inappropriate in that their nonverbal behavior signal indifference and disengagement toward the interlocutor, conversation, and relationship [2]. However, many individuals still phub others in their daily lives. Indeed, in the United States, survey data from the Pew Research Center [3] shows that 82% of adults think phone

use in social settings is against social etiquette and damages conversations. However, 89% still uses their phones at most recent social gatherings.

As phubbing occurs quite often in our daily lives, this topic has received attention from scholars. The phubbing literature has been studied in two distinct ways. First, one strand is to explore possible predictors of phubbing to understand why individuals phub others. Of many studied factors, problematic smartphone use (PSU), such as excessive and impulsive smartphone use, plays a significant role in leading to phubbing (e.g., [1, 4–6]). Personality and psychosocial constructs are also significant predictors of phubbing. For instance, as the Big Five Personality traits, conscientiousness, neuroticism, and disagreeableness are positively associated with phubbing behavior [7, 8]. In addition, individuals with high levels of psychosocial problems such as social anxiety, depression, and fear of missing out tend to phub others more often than those who are not [8, 9]. As such, some evidence demonstrates the psychological

factors in understanding phubbing behavior. However, despite the prevalence of loneliness worldwide [10], very little is known about how loneliness plays a role in predicting phubbing behavior. Thus, our study is aimed at addressing this gap in the phubbing literature.

The other strand of the phubbing literature is its negative consequences. Previous studies have demonstrated that when people phub others, their interaction partners (i.e., phubbees who are phubbed) feel isolated and excluded [11–13]. In addition, phubbing increases conflict over phone use and diminishes the qualities of interpersonal communication and social relationships [14–16]. These negative impacts of phubbing do not occur only to phubbees. Phubbers can also experience detrimental effects such as poor communication and social skills [17]. They also tend to show low levels of relationship satisfaction [8] and life satisfaction [18, 19].

However, many other factors regarding predictors and consequences can be examined in breaking new ground in phubbing research. Of the many psychosocial and subjective feelings that have been studied within interpersonal research, loneliness has become a growing public mental and psychological problem worth exploring [20], as this psychological state influences people's experiences of life satisfaction [21]. Although loneliness and life satisfaction are considered strong predictors and consequences of mobile phone use in prior studies [22–24], they have not been studied in the context of phubbing. Additionally, the majority of phubbing studies have been conducted within the context of romantic and family relationships (e.g., [15, 16, 25]).

To overcome such limitations and broaden the knowledge about phubbing, the current study sought to understand how loneliness and life satisfaction would be associated with phubbing. The relationships between loneliness, problematic smartphone use, phubbing, life satisfaction, and such associations were examined in the context of friendships. This study targeted this relationship type because people tend to phub their friends more frequently than other relational members (e.g., significant other) [26]. In this sense, the present study would provide great theoretical and practical value to understand better what constitutes healthy smartphone use and increase our understanding of phubbing behaviors in more depth and detail.

2. Literature Review and Hypothesis Development

2.1. Friend Phubbing. Friend phubbing (hereafter *Fphubbing*) indicates phubbing behavior occurring in the presence of friends [8]. Relational intimacy may matter in phubbing, assuming a closer relationship or high level of intimacy between partners is positively associated with phubbing. For instance, when people are with friends, phubbing is more frequently seen than with strangers and acquaintances with whom they have lower levels of closeness [26]. This result can be explained by the fact that people may feel more comfortable behaving in what they want, especially with close others. Moreover, they may believe that their behaviors are acceptable to their friends because they are friends. Thus,

Fphubbing may occur more frequently compared to phubbing in distant relationships.

2.2. Loneliness and Friend Phubbing. Loneliness is perceived deficiencies in one's ongoing social relationships [27]. These insufficiencies stem from low levels of quality and quantity in the current social network [27]. In other words, people feel lonely when there are few numbers of companions or when they are not satisfied with their current social network. As characteristics of lonely people, they tend to engage in social interactions less [28, 29]. This tendency is due to their shyness [30], poor social skills [31], and a lack of self-disclosure [32].

For this reason, going and staying online may be a perfect environment to help them relieve their lonely feelings. The reason is that online interactions allow individuals to remain anonymous and are not required to be physically present [33]. Thus, they may not have to worry about their poor performance in their social life. Indeed, these favorable characteristics of online contexts enable them to receive emotional support and fulfill their social needs that are unfulfilled in their real life [33]. This tendency can be explained by the social compensation hypothesis that online social networks allow people who are uncomfortable in face-to-face interactions to compensate for their desires for interpersonal connection [34]. In other words, they use online contexts to help satisfy their social needs because actual interactions only trigger negative emotions. In addition, lonely people reveal themselves more confidently in online contexts than in in-person situations [35]. As a result, lonely people prefer online social interactions to face-to-face interactions [36].

Given the nature of lonely people in favor of online interactions, Yaseen et al. [37] examined phubbing in the context of loneliness. They empirically demonstrated a positive relationship between loneliness and phubbing. Therefore, this study hypothesized the following:

H1. Loneliness would be positively associated with friend phubbing.

2.3. Loneliness and Problematic Smartphone Use. Problematic smartphone use (PSU) refers to excessive, compulsive, or habitual behaviors in using one's smartphone [38–40]. As lonely people spend less time on social activities while feeling more comfortable when having online social interactions, they may have more frequent use of the smartphone, which can lead to problematic smartphone usage behavior and possible addiction. Indeed, loneliness is significantly related to problematic smartphone use [22, 23]. For them, a smartphone is a compelling tool to eliminate their lonely feelings and build relationships, fulfilling their belongingness [41]. Based on these studies mentioned above, our study suggests the following hypothesis:

H2. Loneliness would be positively associated with problematic smartphone use.

2.4. Problematic Smartphone Use and Friend Phubbing. Smartphones have facilitated social connections through many phone functions (e.g., video calling such as FaceTime,

text messaging, and social media). However, many people have started to depend heavily on smartphones nowadays [42]. What is worse is that they feel fear and anxiety when detached from their smartphones, which is called *nomophobia* (i.e., fear of not having a mobile phone nearby) [43].

Problematic smartphone use is best defined as maladaptive smartphone use that leads to many adverse outcomes, such as mental health problems, poor sleep quality, less physical activity, and poor academic/job performance [42, 44, 45]. Those with a higher risk of problematic smartphone use become more disconnected from real life while having more virtual connections [46]. Phubbing has been explained with several dimensions of problematic smartphone use. For example, Karadağ et al. [1] examined problematic Internet-based activities such as smartphones, social media, the Internet, SMS, and games and found that they all significantly predicted phubbing. Chotpitayasunondh and Douglas [4] found that people with problematic smartphone use displayed phubbing behavior more frequently. These studies suggest that phubbers may be unable to regulate their smartphone use behavior even with others. Therefore, in line with prior studies finding a positive relationship between problematic smartphone use and phubbing, this study suggested the following:

H3. Problematic smartphone use would be positively associated with friend phubbing.

2.5. The Mediating Role of Problematic Smartphone Use. Although there is no direct evidence supporting the mediating role of PSU between loneliness and Fphubbing, it is a rational argument considering the following three points: (a) lonely people are more likely to phub others [37], (b) loneliness is significantly and positively associated with PSU [22, 23, 47], and (c) individuals with PSU tend to exhibit phubbing behavior more often [1, 4]. Based on the empirical evidence provided, this study posits the following:

H4. The association between loneliness and friend phubbing would be mediated by problematic smartphone use.

2.6. Friend Phubbing and Life Satisfaction. Life satisfaction is the subjective judgment of an individual's life [48]. As cognitive and affective evaluations, their satisfaction with their life is essential [49] because it is closely associated with healthy psychological and physical well-being and stronger relationships with others [21, 50]. Among many factors determining life satisfaction, loneliness has been demonstrated as one of the strongest predictors of such subjective well-being [51, 52]. Individuals who feel less lonely tend to be more satisfied with their lives. In this regard, because this study is aimed at examining loneliness as a primary emotional state about phubbing, it is necessary to explore life satisfaction as a psychological outcome.

Phubbing behavior can also be understood along with life satisfaction. Indeed, several studies have examined how phubbing and life satisfaction levels are related and found that they are negatively correlated [19, 53]. Similarly, as part of their mediation analyses, Çikrikci et al. [18] found that communication disturbances by one's mobile phone (i.e., phubbing) are directly and negatively associated with life

satisfaction. Based on this empirical evidence, this study also proposes the following:

H5. Friend phubbing would be negatively associated with life satisfaction.

Based on the hypotheses suggested above, this study further proposed the research model examining the relationships between loneliness and PSU, Fphubbing, and life satisfaction. In addition, the mediating role of PSU is investigated. Figure 1 shows the model.

3. Research Method

3.1. Participants and Procedure. In total, 519 students participated in this study. Of them, six responses were incomplete, and they were eliminated from the data. The final sample became $N = 513$, which consisted of 323 females (63.0%), 188 males (36.6%), and two prefer not to answer (.4%). Most of the participants identified themselves as White/Caucasian ($n = 372$, 72.5%), with the remainder as Asian ($n = 82$, 16.0%), Black/African American ($n = 24$, 4.6%), Hispanic/Latino ($n = 23$, 4.5%), and bi/multiracial ($n = 12$, 2.3%). Their age ranged from 18 to 29 years ($M = 19.85$, $SD = 2.07$).

This study recruited participants from the departmental research pool at a large southeastern university in the United States. Participants were required to be at least the age of 18 and smartphone users. When participants met these two requirements and consented to participate in our self-reported online survey hosted on *Qualtrics*, they completed the following sections: demographic information and research instruments, including loneliness, PSU, friend phubbing, and life satisfaction. The average time the participants spent for completion was 10-15 minutes, and the participants were given course credit for their completion.

3.2. Measures

3.2.1. Loneliness. The UCLA Loneliness Scale (version 3) by Russell [54] was used to measure the participants' subjective feelings of loneliness. The scale consisted of 20 items (e.g., "How often do you feel that there is no one you can turn to?"). Moreover, they were measured on a 4-point Likert-type scale from 1 (*never*) to 4 (*always*). Of them, nine items (i.e., items 1, 5, 6, 9, 10, 15, 16, 19, and 20) which were positively worded items were reverse-coded. The high average scores on this scale represented increased levels of loneliness.

3.2.2. Problematic Smartphone Use. The Smartphone Addiction-Short Version (SAS-SV) by Kwon et al. [55] was used to measure the participants' problematic tendencies in using their smartphones. This scale included ten items (e.g., "Feeling impatient and fretful when I am not holding my smartphone"), which the participants scored on a 6-point scale from 1 (*strongly disagree*) to 6 (*strongly agree*). Higher reported mean scores indicated greater problematic smartphone use.

3.2.3. Friend Phubbing. Fphubbing was measured by adapting the Generic Scale of Phubbing (GSP) developed by Chotpitayasunondh and Douglas [56]. As a second-order construct, this scale consisted of 15 items, allocated to four sub-constructs: *nomophobia*, *interpersonal conflict*, *self-isolation*,

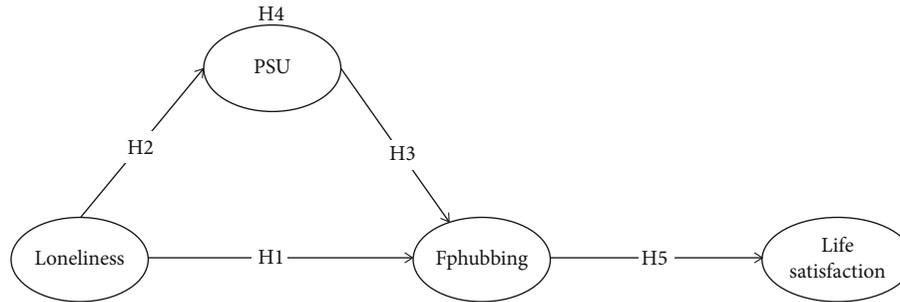


FIGURE 1: The proposed model.

and *problem acknowledgment*. According to the purpose of this study, mainly focusing on phubbing behavior in friendships, the object of every statement was changed to “my friends” from “others” or “people.” There were several similarities between problematic smartphone use and friend phubbing scales.

Of the four subdimensions, *nomophobia* and *problem acknowledgment items* overlapped with the problematic smartphone use scale items. Those two dimensions were excluded, and thus, finally, eight items with two subconstructs—*interpersonal conflicts* (IC; e.g., “I have conflicts with my friends because I am using my phone”) and *self-isolation* (SI; e.g., “I would rather pay attention to my phone than talk to my friends”)—were included to measure the participants’ phubbing behavior in the context of friendships. The participants were also asked to consider their current friendships (e.g., friends who regularly meet within two weeks and text at least once a week). The scale was measured at a 7-point Likert-type scale ranging from 1 (*never*) to 7 (*always*). Higher average scores on this scale indicated a higher tendency to phub their friends.

3.2.4. Life Satisfaction. This study measured participants’ subjective well-being using the Satisfaction with Life Scale (SWLS) by Diener et al. [49]. This scale included five items (e.g., “I am satisfied with my life”), and they were measured using a 7-point Likert-type scale (1 = *strongly disagree*, 7 = *strongly agree*). Higher average scores represented higher life satisfaction.

3.3. Data Analysis. This study used SPSS 28.0 and AMOS 24.0 software programs for data analyses. As preliminary analyses, this study tested whether there were problematic items in each measurement and further checked the reliability and validity of all four constructs regarding construct convergent and discriminant and construct internal consistency. These examinations were based on the following criteria [57, 58]: (1) factor loadings $> .50$, (2) Cronbach’s alphas (α) and composite reliability (CR) scores $> .70$, and (3) the average variance extracted (AVE) $> .50$. When there were problematic items that did not satisfy the above thresholds which violated the validity and reliability of the constructs, they were also removed from the data.

The proposed model was tested by examining multiple indices. By applying confirmatory factor analysis (CFA), the following fit indices were used to determine the proposed model to be adequate [59]: (1) the comparative fit

index (CFI) $\geq .90$, (2) the standardized root mean square residual (SRMR) $\leq .08$, and (3) the root mean square error of approximation (RMSEA) $\leq .06$. Next, structural equation modeling (SEM) was conducted to estimate the relationships of this study. As Preacher and Hayes [60] suggested, maximum likelihood (ML) estimation with 2000 bootstrap samples and 95% bias-corrected confidence intervals (CI) were employed to test the mediation. All the estimates were indicated in standardized values.

4. Statistical Results

4.1. Preliminary Analyses. The measurements’ internal consistency, convergent, and discriminant validity were examined. With regard to the loneliness construct, the results of factor analysis showed that all reversed nine items and two other items (i.e., items 17 and 18) were not acceptable due to their low factor loading. Regarding the problematic smartphone use construct, five items were poorly explained to this construct with lower factor loadings, and thus, they were eliminated. Moreover, according to the validity and reliability test, two more items (i.e., items 7 and 8) were excluded to improve AVE. The validity and reliability test of the third construct, Fphubbing, showed that one item (i.e., item 6 of the *interpersonal conflict* dimension) had a weak correlation with the construct. Therefore, it was excluded. Finally, it was detected that one item of the life satisfaction construct (i.e., item #5) had a factor loading less than .5, and thus, it was removed for further analyses.

With these valid and reliable items, the reliability and validity of each construct were tested through Cronbach’s alpha and the values of AVE and CR. As shown in Table 1, Cronbach’s alpha coefficients of our latent variables ranged from .75 to .91. Thus, it was concluded that all the items of the measures were internally consistent, indicating good scale reliabilities. In addition, the results of AVE (ranging from .52 to .67) and CR (ranging from .76 to .92) determined that our latent constructs’ convergent and discriminant validity were acceptable.

Descriptive statistics and zero-order correlations among our study variables were examined based on reliable and valid items. As indicated in Table 2, loneliness and PSU were positively and significantly correlated ($r = .19$). Fphubbing was positively correlated with loneliness ($r = .24$) and PSU ($r = .44$), respectively. In contrast, it was negatively correlated with life satisfaction ($r = -.12$). Next, the measurement

TABLE 1: Results of confirmatory factor analysis.

	Items	Factor loading	α	CR	AVE				
Loneliness	L2	.743	.914	.915	.548				
	L3	.810							
	L4	.776							
	L7	.748							
	L8	.589							
	L11	.661							
	L12	.713							
	L13	.779							
PSU	PSU4	.614	.753	.759	.518				
	PSU5	.856							
	PSU6	.667							
Fphubbing	PHUB5	.662	.788	.791	.560				
	IC	PHUB7				.764			
		PHUB8				.811			
		PHUB9				.800			
	SI	PHUB10				.780	.805	.814	.527
		PHUB11				.576			
	PHUB12	.726							
Life satisfaction	LS1	.848	.889	.891	.673				
	LS2	.798							
	LS3	.882							
	LS4	.746							

Note. PSU = problematic smartphone use; Fphubbing = friend phubbing; IC = interpersonal conflict; SI = self-isolation.

TABLE 2: Results of descriptive statistics and correlations ($n = 513$).

		1	2	3	4
1	Loneliness	—			
2	PSU	.19***	—		
3	Fphubbing	.24***	.44***	—	
4	Life satisfaction	-.45***	-.06	-.12**	—
M (SD)		2.19 (.68)	2.93 (1.14)	2.64 (.75)	5.27 (1.25)

Note. *** $p < .001$; ** $p < .01$.

model with all four variables was examined by conducting CFA. According to the result, the fit indices were as follows: $\chi^2(244) = 413.98$, $p < .001$, $\chi^2/df = 1.70$, CFI = .97, SRMR = .04, and RMSEA = .04. The measurement model's constructs, therefore, were supported with a good fit.

4.2. Testing the Proposed Model and Hypotheses. The proposed model examining the associations between loneliness, PSU, Fphubbing, and life satisfaction was tested to estimate the operational model. The result of SEM showed an acceptable fit: $\chi^2(246) = 533.57$, $p < .001$, $\chi^2/df = 2.17$, CFI = .95, SRMR = .06, and RMSEA = .05. Figure 2 shows the final hypothesized model. This study further demonstrated that

all the hypotheses of this study were supported. Specifically, the findings of this study revealed that loneliness was positively and significantly associated with Fphubbing ($\beta = .14$), and thus, H1 was supported. This study also found that loneliness had a significant and positive association with PSU ($\beta = .24$), confirming H2. In addition, there was a strong relationship between PSU and Fphubbing ($\beta = .61$), supporting H3. As shown in Table 3, partial mediation between loneliness and Fphubbing was confirmed. In other words, there were significant and positive direct ($\beta = .14$), indirect ($\beta = .14$), and total effects ($\beta = .28$), respectively, supporting H4. Finally, Fphubbing had a significant and negative association with life satisfaction ($\beta = -.16$), supporting H5.

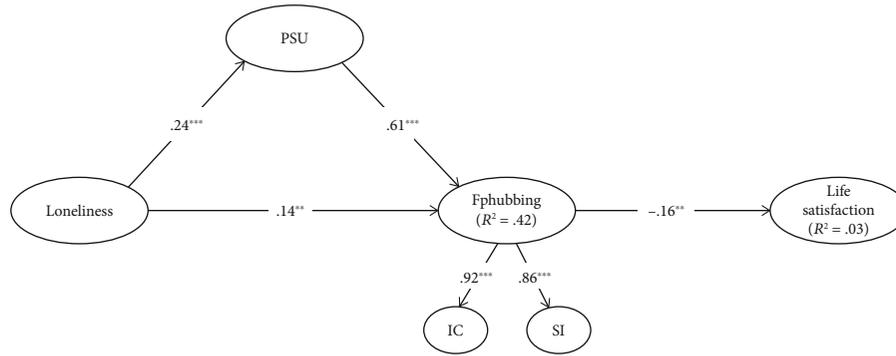


FIGURE 2: SEM results of the proposed model (** $p < .01$, *** $p < .001$).

TABLE 3: The results of the mediation analysis.

	Effect on Fphubbing	Standardized estimate	p	95% CI	
				Lower	Upper
Loneliness	Total effect	.28	.001	.17	.39
	Direct effect	.14	.006	.04	.23
	Indirect effect	.14	.001	.08	.22

5. Discussion

With the prevalent phenomenon of phubbing in social settings, especially in friendships, this study developed and examined a mediation model to improve the understanding of psychological predictors and consequences of phubbing. The associations between loneliness, PSU, Fphubbing, and life satisfaction were identified. The indirect effect of loneliness on life satisfaction mediated by PSU was further examined.

Although the reasons for Fphubbing may differ, following previous studies (e.g., [17, 37]), loneliness predicts one's phubbing behavior. That is, lonely individuals are more likely to phub their friends. A tendency of lonely people can explain this finding. They tend to have negative attitudes toward social interactions, such as being cynical and distrustful with expectations of negative evaluations and rejections by others [61]. They are also not good at dealing with interpersonal interactions due to poor social skills [31]. It is even difficult for them to disclose themselves [62] and to be responsive and intimate with their conversation partner [63], which can be essential factors in face-to-face communication with others. What makes it worse is that they tend to isolate themselves because they are exhausted or burnt out by social interactions [64]. Thus, due to their negative perceptions toward interactions and a lack of ability to handle interpersonal interactions with others, lonely people may use their phones to avoid interactions and relieve their negative feelings stemming from in-person situations by perceiving them as escaping tools from reality. Consequently, they may show phubbing behavior more often, and it can be concluded that phubbing is one of the strategic and avoidance behaviors.

Consistent with previous literature (e.g., [22, 23]), loneliness is also positively related to PSU. That is, lonely people are likely to show problematic smartphone usage behaviors

such as excessive and compulsive use of smartphones. The possible explanation of this finding is that as they have a deficiency in their current relationships, they may find alternative ways—virtual environment or cyberspace—to compensate for their social needs and capital [34–36]. For example, for those who suffer from psychological distress such as loneliness, smartphones can be alternative tools for their fundamental needs. This is because smartphones provide more opportunities for companionship, which can fulfill their psychological and social needs that are not satisfied in real life. Thus, lonely people may overuse or be heavily obsessed with smartphone use, leading to a higher risk for PSU.

In line with previous studies (e.g., [1, 4]), this study identifies that people with PSU, such as spending more time or showing compulsive behavior using smartphones, are likely to exhibit friend phubbing behavior more frequently. This result can be explained by the model of problematic mobile phone use by Billieux et al. [65] that people with high levels of PSU have poor control over smartphone use, such as using them regardless of time and place [66]. As they have shown such problematic behavior by having excessive smartphone use iteratively for a while, the use of smartphones becomes habitual behavior, thereby using them automatically without consciousness [67]. Consequently, whenever they get the urge to check their smartphones or receive notifications, they may unconsciously check or use their devices despite the presence of their friends.

Moreover, this study confirms that PSU is mediating the influence of loneliness on friend phubbing among college students. That is, the tendency of problematic smartphone use increases in people with higher levels of loneliness, and this higher problematic smartphone usage also increases phubbing behavior in the presence of friends. The fact that little is known about the mediating role of PSU limits the interpretation of this outcome. However, as mentioned

above, it could be said that individuals who have psychosocial problems such as loneliness may avoid and neglect their real-world interpersonal engagement because it triggers negative feelings such as stress and being lonelier. For them, smartphones are one of the possible ways to escape from their loneliness feeling. Consequently, they heavily depend on the virtual world, leading to phubbing behavior in friendships.

The present study finally demonstrates that friend phubbing (stemming at least in part from loneliness and PSU) is negatively related to life satisfaction. As people phub their friends more often, they are less likely to be satisfied with their overall life. This result aligns with previous studies that using information and communication technologies such as smartphones and social media damages life satisfaction, especially when such usages are problematic [68, 69] or phubbing [19, 53]. The plausible explanation for this result may be that as people exhibit phubbing behavior more often, this aggravates phubbers' social and psychological problems, such as decreasing interpersonal communication and belongingness with others. People generally feel happy through social life by exchanging nonverbal communication and verbal messages with partners, which can play an essential role in our quality of life. Indeed, nonverbal communication cues (e.g., postures and eye contact) enable people who are in interactions to feel relief and form trust [70], and they can, in turn, increase our subjective well-being [71]. Through active mutual communication and interactions, people feel a sense of connectedness or belongingness more. However, when people are distracted by their smartphones, such as starting at or using them, the likelihood of conveying and receiving positive emotions through our communication channels may be decreased, which may diminish their life satisfaction.

5.1. Limitations and Future Research. This study includes several limitations. First, the sample of this study consisted of students from one university in the United States. Although this study targeted the sample sufficiently in that young adults aged between 18 and 29 years (98%) are the most likely to phub others [3], the sample does not reflect a very diverse sample in terms of ethnicity/race and other age groups. Also, there was an imbalance in the gender ratio in our sample, which limits the generalizability of the findings. Future research should recruit a more representative sample or, at the very least, a more demographically diverse sample, such as data collected from different universities, regions, and age groups. Second, as the cross-sectional method is used to test the proposed model and hypotheses, causal relationships between our study variables cannot be confirmed. In this regard, future studies should use longitudinal methods to explore how loneliness might influence the enactment of subsequent friend phubbing and whether the use of friend phubbing impacts their report of life satisfaction.

Third, this study conducted a self-reported online questionnaire. The participants' answers might be biased due to social desirability and distorted recall regarding unconscious smartphone use. In this regard, future studies might use multiple methods, such as observations and interviews, to

increase the validity of the data. Fourth, this study investigated phubbing in general friendships. There are likely different significant relational dynamics that occur depending on a sense of intimacy with friends and the number of friends. For instance, people may feel more free to use their smartphones with less pressure to be focused on the other person when interactions take place in a group setting (e.g., more than two friends), and they have different expectations regarding smartphone use when they are with close others [13]. In this regard, a future study is needed to examine the enactment of friend phubbing across different levels of closeness between friends and the number of people involved in the interaction (e.g., one or two others vs. a large social group). Finally, this study only focused on loneliness in understanding friend phubbing. There are many other psychosocial problems (e.g., social anxiety, loss of confidence, and lack of social support) that can be significantly related to phubbing behavior. In future studies, more relevant characteristics of individuals can be tested to understand different predictors of friend phubbing.

5.2. Theoretical and Practical Implications. Despite several limitations, this study's findings include several theoretical and practical implications. This study proposed and tested a model linking a significant psychosocial problem (i.e., the experience of loneliness) with problematic phone use, which affected life satisfaction, to explain what exacerbates friend phubbing behavior and how friend phubbing influences our overall life. From a theoretical perspective, this study extends the existing phubbing/addictive behavior literature by examining one of the most common psychosocial issues (i.e., loneliness) to predict phubbing behavior and problematic smartphone use. This allows us to explain the importance of intrapersonal or psychosocial factors in understanding the negative aspects of technology use. Simultaneously, the findings of our study can shed light on how vital interpersonal interactions are without any distractions by having nonverbal communication in this smartphone age.

From a practical perspective, the findings of this study may help researchers design adequate interventions to stop phubbing in social interactions. Given the direct and indirect effects of loneliness on friend phubbing and its consequences, it is necessary to encourage individuals to have healthy mental health to discourage problematic smartphone use and phubbing behavior. People can promote positive mental health (i.e., reducing loneliness) by getting lonely people to stay in touch with their close others in person, have healthy smartphone usage habits and behavior, and further protect their happiness.

6. Conclusion

With the prevalent use of smartphones, phubbing has become common in interpersonal interactions, and even worse, such behavior has been seeping into significant interpersonal relationships. By proposing the model relevant to friend phubbing, this study demonstrated that smartphone use during in-person interactions may imply a dangerous signal regarding psychosocial problems. Specifically, individuals with high

loneliness are more likely to show phubbing behavior when they are with their friends. They also tend to be at higher risk for problematic phone use. In addition, a significantly negative relationship exists between friend phubbing and life satisfaction. Considering the findings of this study, it is possible to suggest that psychological and mental instability might be closely related to problematic smartphone use behaviors, which in turn negatively affect their subjective well-being. Also, this study might serve as a foundation to manage phubbing behavior, thereby respecting others and valuing their real relationships.

Data Availability

The quantitative data used to support the findings of this research are available from the corresponding author upon request.

Conflicts of Interest

The authors declare that they have no competing interests.

Acknowledgments

Financial support was provided by the University of Oklahoma Libraries' Open Access Fund.

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