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Associations between Problematic Smartphone Usage, Mental Health, Psychological Distress, and Loneliness among University Students: A Cross-Sectional Study

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Abstract

Background: Smartphones and social media are deeply embedded in university life, raising concerns about their potential relationship with students' mental health. Although prior research has linked problematic smartphone use (PSU) with anxiety and depression, fewer studies have examined PSU and social media use across multiple dimensions of mental health, including mental well-being, psychological distress, and loneliness. **Methods:** This cross-sectional study examined associations between PSU and mental health outcomes among 340 undergraduate students at a large private university in the United States. Participants completed an online survey between January and April 2025. PSU and social media use were measured using a modified version of the Bergen Social Media Addiction Scale and the Mobile Phone Addiction Scale. Mental health measures included the Mental Health Continuum-Short Form, the UCLA Loneliness Scale, and the Clinical Outcomes in Routine Evaluation-10. Linear regression models controlled for age, sex, and socioeconomic status. **Results:** Higher scores on both PSU measures were associated with poorer mental health. Greater social media dependence was associated with decreased mental well-being, elevated loneliness and psychological distress. Higher mobile phone addiction scores were associated with decreased mental well-being, elevated loneliness and psychological distress. **Conclusion:** Findings suggest that PSU is significantly associated with poorer mental health and increased loneliness among university students. Although the cross-sectional design precludes causal conclusions, results lend support for efforts toward promoting healthier digital habits, strengthening social connection, and

addressing mental health needs within university settings. Future longitudinal and mixed-methods research is needed to better understand the mechanisms linking PSU, mental health, and loneliness.

Keywords

Problematic Smartphone Use, Social Media, Mental Health

1. Introduction

Smartphones have become ubiquitous and an essential tool for most people throughout the world. Phones are a tool for work, communication, entertainment, and education [1]. The versatility of smartphones has fundamentally transformed how people interact with each other and their environment. However, increased access to, and use of, smartphones and the mobile apps they access has also led to concerns [2]. Problematic smartphone use (PSU) refers to the excessive smartphone engagement associated with dysfunction, attention fragmentation, withdrawal difficulties, and phenomena similar to other habit forming and addictive behaviors [3].

University students are particularly vulnerable to mental health challenges and, despite frequent proximity to peers, often report feelings of loneliness. Although estimates vary by measurement approach, recent national data indicate that approximately one-third of U.S. college students report moderate to severe symptoms of depression or anxiety, while approximately half report high levels of loneliness [4]. Alongside these concerns, an emerging body of research has examined PSU and smartphone addiction among university students, with studies documenting associations between excessive phone use and a range of negative health-related outcomes [5] [6]. PSU has been associated with decreased physical activity [7], lower life satisfaction [8], poor sleep quality [9], and mental health challenges, including symptoms of anxiety and depression [5] [6] [10] [11]. Given the importance of social connectedness for mental health, as well as rising concerns about loneliness among younger cohorts, further investigation of the relationship between PSU, mental well-being, and loneliness among university students is warranted [12]-[14]. To date relatively few studies have examined the association between these variables among the same sample of students. The purpose of the current study was to explore potential associations between smartphone addiction and social media use among university students with a robust group of established mental health-related scales, including measures of mental wellbeing, loneliness, and psychological distress.

2. Methods

2.1. Study Design

This study utilized a cross-sectional survey design to assess potential associations

between PSU and three measures of mental health among university students.

2.2. Ethical Considerations

This study was conducted in accordance with the Declaration of Helsinki, as revised in 2000. Every effort was made to ensure protection and confidentiality and to reduce any potential adverse consequences to the participants. Ethical permission was granted by the institutional review board at Brigham Young University (IRB#: IRB2025-024) and every participant provided consent.

2.3. Participants

Participants included undergraduate students 18-years-of-age and older enrolled in courses during the Spring Semester (January through April) 2025 at a large private university in the United States.

2.4. Procedures and Sampling

The questionnaire was developed and then subjected to two rounds of pilot testing in November 2024 before being finalized. Study participants were recruited from a list of courses with enrollment of 50 or more students within the College of Life Sciences. A total of 12 eligible courses were randomly selected from the list for recruitment. Instructors for each of the selected courses were contacted via email, provided with an overview of the study, and asked whether they would be willing to assist with participant recruitment by displaying a PowerPoint slide at the beginning of a class lecture inviting students to participate. Nine instructors agreed to share the recruitment slide with their students. The combined enrollment across these nine courses was 965 students. Students were not asked to complete the survey during class. Instead, the recruitment slide included a QR code and hyperlink to the study questionnaire. Participants were offered inclusion in a drawing for a $25 Amazon gift card for their participation, with one-in-four participants receiving a gift card. The QR code and hyperlink remained active for two weeks following recruitment. Although we cannot determine precisely how many of the 965 enrolled students viewed the recruitment slide, 340 students initiated the online survey, and 296 completed most survey items.

2.5. Survey Administration

The questionnaire was administered online using the Qualtrics (Seattle, WA, USA) platform. Participants provided informed consent by answering "yes" to the first questionnaire item, which provides relevant information about the study and the implications of participation. The questionnaire terminated for those potential participants answering "no" and thus not consenting to participation. Participation was voluntary and not connected to course grades, credit, or extra credit. Participant responses were also anonymous, as no identifying information was collected.

2.6. Instrumentation

The study questionnaire measured PSU using two scales, the Bergen Social Media

Addiction Scale and the Mobile Phone Addiction Scale.

Bergen Social Media Addiction Scale. The Bergen Social Media Addiction Scale (BSMAS) measures addictive behaviors related to social media use. Two edits were made to the original instrument following pilot testing to add clarity and to standardize response options. First, each of the original six BSMAS items begins with "You…" During pilot testing, several participants expressed uncertainty about whether they should respond based on their own experiences or those of someone else. To eliminate this ambiguity, we revised each item to begin with "I…" Second, we modified the original 5-point Likert response scale (1 = very rarely, 2 = rarely, 3 = sometimes, 4 = often, 5 = very often) to a 3-point scale (1 = agree, 2 = neutral, 3 = disagree). Thus, participants responded to the following six items: 1) I spend a lot of time thinking about social media or planning how to use it; 2) I feel an urge to use social media more and more; 3) I use social media in order to forget about personal problems; 4) I have tried to cut down on the use of social media without success; 5) I become restless or troubled if I am prohibited from using social media; and 6) I use social media so much that it has had a negative impact on my job/studies. Possible responses to each item include "agree" (2 points), "neutral", (1 point) and "disagree" (0 points). Item scores are summed with higher scores indicative of greater social media dependance (Cronbach $\alpha = 0.79$). All regression analyses use the BSMAS overall score.

Mobile Phone Addiction Scale. The Mobile Phone Addiction Scale estimates the degree to which an individual is addicted to their mobile phone in a variety of situations. It seeks to measure the biological, psychosocial and behavioral patterns associated with mobile phone usage that may be described as excessive. The 6-point Likert scale response options of the original MPAS were modified to a 3-point scale to improve consistency across the questionnaire. These modifications were informed by feedback collected during pilot testing. The modified scale includes a total of 20 statements scored using a three-point Likert scale consisting of "agree" (2 points), "neutral" (1 point), and "disagree" (0 points). Item scores are summed with higher scores indicative of greater probability of mobile phone addiction (Cronbach $\alpha = 0.84$). Items include: 1) I usually check my notifications as soon as I receive them during the day; 2) I usually check notifications received while resting in light sleep; 3) I usually impulsively check for notifications while attending classes or studying at home; 4) I usually check my mobile phone for messages/gaming/surfing while attending classes; 5) I usually check my mobile phone for new messages or notifications right after waking up from sleep; 6) I constantly check my mobile phone so as not to miss conversations between friends/other people on social media; 7) I have a hard time concentrating in class, while doing assignments, or while working due to mobile use; 8) I prefer talking communicating through social media/smartphone to hanging out with real-life friends or family; 9) I usually check my mobile phone even while engaged in group participation; 10) I use my mobile phone longer than I had intended to; 11) I'm always thinking that I should shorten my mobile phone usage; 12) The people

around me complain that I do not pay attention to them due to mobile phone use; 13) I get annoyed or shout if someone asks me to decrease the use of mobile phone; 14) I feel impatient and fretful when I am not holding my mobile phone; 15) I experience stress when I am not using my mobile phone; 16) I experience light-headedness or blurred vision due to excessive mobile phone use; 17) I feel pain in my wrists or the back of my neck while using a mobile phone; 18) I feel tired and lack adequate sleep due to excessive mobile phone use; 19) I cannot imagine living without my mobile phone; and 20) I compulsively respond to calls or messages at places where it is dangerous to do so like driving or crossing the road.

The study questionnaire also included three scales and indices to measure aspects of mental health and psychological distress, and loneliness, including the *Mental Health Continuum-Short Form*, the *UCLA Loneliness Scale*, and the *Clinical Outcomes in Routine Evaluation*-10.

Mental Health Continuum-Short Form. The Mental Health Continuum-Short Form (MHC-SF) has been designed to measure each facet of well-being: psychological, emotional, and social [15]. The MHC-SF asks a participant to consider how often during the past month she has felt: 1) happy; 2) interested in life; 3) satisfied; 4) that you had something important to contribute to society; 5) that you belonged to a community (like a social group, your neighborhood, your city); 6) that society is becoming a better place for people; 7) that people are basically good; 8) that the way society works makes sense to you; 9) that you like most parts of your personality; 10) good at managing the responsibilities of your daily life; 11) that you had warm and trusting relationships with others; 12) that you have experiences that challenge you to grow and become a better person; 13) confident to think or express your own ideas and opinions; and 14) that your life has a sense of direction or meaning to it. Responses are made using a 6-point Likert scale including "every day" (5 points), "frequently" (4 points), "occasionally" (3 points), "rarely" (2 points), "very rarely" (1 point), and "never" (0 points) with the total score ranging from 0 to 70 points with higher scores indicating a higher level of mental and emotional wellbeing. Scores can be further segregated into categories along a continuum from low (languishing) to high (flourishing).

UCLA Loneliness Scale. All versions of the UCLA Loneliness Scale have been validated as an effective measure loneliness [16]. The current study used the 3-item version of the scale which includes the following questions: 1) How often do you feel that you lack companionship? 2) How often do you feel left out? and 3) How often do you feel isolated from others? Possible responses include "hardly ever" (1 point), "some of the time" (2 points), and "often" (3 points). Summed scores of 3 or 4 indicate low levels of loneliness, while scores of 5 - 6 indicate moderate levels of loneliness, and scores of 7 - 9 indicate high levels of loneliness.

Clinical Outcomes in Routine Evaluation-10. The Clinical Outcomes in Routine Evaluation-10 (CORE-10) measures an individual's emotional and psychological well-being [17]. The scale assesses symptoms of anxiety and depression, as well as the ability to cope with daily stressors and emotional challenges. The

CORE-10 includes the following 10 statements: 1) I have felt tense, anxious or nervous; 2) I have felt I have someone to turn to for support when needed; 3) I have felt able to cope when things go wrong; 4) Talking to people has felt too much for me; 5) I have felt panic or terror; 6) I made plans to end my life; 7) I have had difficulty getting to sleep or staying asleep; 8) I have felt despairing or hopeless; 9) I have felt unhappy; and 10) Unwanted images or memories have been distressing to me. The total score is calculated by summing the responses, ranging from 0 to 40, with higher scores indicating more severe symptoms. All positively worded items were reverse scored in accordance with the instrument's established scoring guidelines.

2.7. Data Analysis

Only completed questionnaires were included in the statistical analysis and regression modeling, while demographic data is reported on all participants. Qualtrics to STATA (College Station, TX) for analysis. Univariate analyses were conducted to describe the study sample. Linear regression analyses were used to explore the relationship between PSU and each of the selected mental and psychological health measures. Regression models controlled for age, sex, and socioeconomic status. Modeling did not account for clustering provided that no randomly selected course was associated with mental or psychological wellbeing, courses were used exclusively for recruitment, students completed surveys independently, and course membership was not collected.

3. Results

3.1. Demographics

Approximately two-thirds of study participants were female (67.7%) while the median age for all participants was 22 years old. Most (75.6%) of participants were never married. More than half (57.1%) reported their parental income as upper middle or upper while just four participants (1.2%) indicated their parents were low income. Demographic variables are presented in Table 1.

Table 1. Demographics.

	N (%)
Sex	
Female	230 (67.65)
Male	110 (32.35)
Age	
18	19 (5.67)
19	23 (6.87)
20	31 (9.25)
21	70 (20.9)

Continued

22	82 (24.48)
23	52 (15.52)
24	39 (11.64)
25 or older	19 (5.67)
Marital Status	
Never married	257 (75.59)
Married	82 (24.12)
Divorced	1 (0.29)
Parent's Socioeconomic Status	
Upper	34 (10.0)
Upper middle	160 (47.06)
Middle	115 (33.82)
Lower middle	27 (7.94)
Lower	4 (1.18)

3.2. Bergen Social Media Addiction Scale

Bergen Social Media Addiction Scale. The most agreed upon single item from the BSMAS was "*I use social media in order to forget about personal problems*" (N = 124; 41.9%) while the least agreed upon item was "*I become restless or troubled if I am prohibited from using social media*" (N = 34; 11.5%). See Table 2 for the results of each BSMAS item.

Table 2. Bergen Social Media Addiction Scale (BSMAS).

	Agree N (%)	Neutral N (%)	Disagree N (%)
I spend a lot of time thinking about social media or planning how to use it.	40 (13.5)	75 (25.3)	181 (61.2)
I feel an urge to use social media more and more.	80 (27.0)	70 (23.7)	146 (49.3)
I use social media in order to forget about personal problems.	124 (41.9)	68 (23.0)	104 (35.1)
I have tried to cut down on the use of social media without success.	109 (36.8)	76 (25.7)	111 (37.5)
I become restless or troubled if I am prohibited from using social media.	34 (11.5)	61 (20.7)	200 (67.8)
I use social media so much that it has had a negative impact on my job/studies.	57 (19.3)	78 (26.3)	161 (54.4)

Results from linear regression modeling found the BSMAS to be significantly and negatively correlated ($P < 0.001$; $\beta = -0.695$) with mental health as measured by the MHCSS, indicating an association between social media dependence and

poorer mental health. The BSMAS was associated with the UCLA Loneliness Scale ($P < 0.001$; $\beta = 0.101$) such that as social media dependence increased so did loneliness. The BSMAS was correlated with scores from the CORE-10 ($P < 0.001$; $\beta = 0.274$) such that psychological distress increased as social media dependence increased. See Table 3 for complete results from the linear regression modeling.

Table 3. Bergen Social Media Addiction Scale (BSMAS) and mental health indicators.

	Coefficient	Std Error	P-value	95% CI
Mental Health Continuum Short Form	−0.695	0.155	0.000*	(−1.0, −0.389)
UCLA Loneliness Scale	0.101	0.029	0.000*	(0.045, 0.157)
CORE-10	0.274	0.081	0.001*	(0.114, 0.435)

Linear regression models controlling for age, sex, and socioeconomic status.

3.3. Mobile Phone Addiction Scale

The most agreed upon items from the MPAS were "*I usually check my mobile phone for new messages or notifications right after waking up from sleep*" (N = 213; 72.2%) and "*I use my mobile phone longer than I had intended to*" (N = 193, 65.4%). The least agreed upon item was "*I get annoyed or shout if someone asks me to decrease the use of mobile phone*" (N = 8; 2.7%). See Table 4 for the results of all MPAS items.

Table 4. Mobile Phone Addiction Scale (MPAS).

	Agree N (%)	Neutral N (%)	Disagree N (%)
I usually check my notifications as soon as I receive them during the day.	159 (53.7)	83 (28.0)	54 (18.3)
I usually check notifications received while resting in light sleep.	47 (15.9)	41 (13.9)	207 (70.2)
I usually impulsively check for notifications while attending classes or studying at home.	156 (53.1)	62 (21.1)	76 (25.8)
I usually check my mobile phone for messages/gaming/surfing while attending classes.	134 (45.6)	73 (24.8)	87 (29.6)
I usually check my mobile phone for new messages or notifications right after waking up from sleep.	213 (72.2)	41 (13.9)	41 (13.9)
I constantly check my mobile phone so as not to miss conversations between friends/other people on social media.	73 (24.7)	87 (29.5)	135 (45.8)
I have a hard time concentrating in class, while doing assignments, or while working due to mobile use.	68 (23.1)	80 (27.2)	146 (49.7)
I prefer talking communicating through social media/smartphone to hanging out with real-life friends or family.	12 (4.1)	23 (7.8)	260 (88.1)
I usually check my mobile phone even while engaged in group participation.	47 (15.9)	96 (32.6)	152 (51.5)
I use my mobile phone longer than I had intended to.	193 (65.4)	69 (23.4)	33 (11.2)
I'm always thinking that I should shorten my mobile phone usage.	172 (58.3)	77 (26.1)	46 (15.6)

Continued

The people around me complain that I do not pay attention to them due to mobile phone use.	14 (4.7)	25 (8.5)	256 (86.8)
I get annoyed or shout if someone asks me to decrease the use of mobile phone.	8 (2.7)	21 (7 .1)	265 (90.2)
I feel impatient and fretful when I am not holding my mobile phone.	13 (4.4)	46 (15.7)	235 (79.9)
I experience stress when I am not using my mobile phone.	11 (3.7)	32 (10.9)	251 (85.4)
I experience lightheadedness or blurred vision due to excessive mobile phone use.	26 (8.8)	45 (15.3)	224 (75.9)
I feel pain in my wrists or the back of my neck while using a mobile phone.	34 (11.5)	39 (13.3)	221 (75.2)
I feel tired and lack adequate sleep due to excessive mobile phone use.	57 (19.5)	66 (22.5)	170 (58.0)
I cannot imagine living without my mobile phone.	96 (32.5)	92 (31.2)	107 (36.3)
I compulsively respond to calls or messages at places where it is dangerous to do so like driving or crossing the road.	61 (20.7)	63 (21.4)	171 (58.0)

Results from linear regression modeling found the MPAS to be significantly and negatively correlated ($P < 0.001$; $\beta = -0.329$) with mental health as measured by the MHC-SF indicating an association between higher mobile phone addiction scores and poorer mental health. The MPAS was associated with the UCLA Loneliness Scale ($P = 0.012$; $\beta = 0.036$) such that as mobile phone addiction scores increased so did loneliness. The MPAS was correlated with scores from the CORE-10 ($P < 0.001$; $\beta = 0.185$) such that psychological distress increased as mobile phone addiction scores increased. See Table 5 for complete results from the linear regression modeling.

Table 5. Mobile Phone Addiction Scale (MPAS) and mental health indicators.

	Coefficient	Std. Error	P-value	95% CI
Mental Health Continuum Short Form	−0.329	0.075	0.000*	(−0.477, −0.182)
UCLA Loneliness Scale	0.036	0.014	0.012*	(0.008, 0.063)
CORE-10	0.185	0.039	0.000*	(0.109, 0.262)

Linear regression models controlling for age, sex, and socioeconomic status.

4. Discussion

The current study examined the relationship between PSU, as measured by the BSMAS and MPAS, and multiple dimensions of mental health. Findings revealed significant associations between PSU and poorer mental health outcomes, including increased loneliness and elevated psychological distress. While the current study is unable to demonstrate causation, the significant correlations identified are nonetheless concerning given the extent of smartphone and social media use among university students. Specific items endorsed on both the BSMAS and MPAS suggest these associations may be explained by several interrelated mechanisms, including maladaptive coping, loss of control, attention fragmentation, and social displacement.

Findings from the present study indicate that PSU was significantly associated with poorer mental health outcomes. Associations between both the BSMAS and MPAS and poor mental health among university students are consistent with earlier studies [11] [18] [19]. PSU was also negatively associated with flourishing, the highest level on the MHC-SF, which classifies mental health status within three categories: flourishing, moderately mentally healthy, and languishing [15], suggesting that PSU may not merely be associated with symptom elevation, but may potentially be associated with diminished ability to flourish. This pattern is consistent with findings from Marciano and Viswanath [20], who reported that negative social media experiences were inversely associated with flourishing among adolescents, as well as those reported by Tangmunkongvorakul *et al*. [21], who found that excessive smartphone use was associated with decreased flourishing scores among university students.

Mental illness and mental health challenges related to the stressors of academic life are prevalent among university students. Research consistently shows an increased prevalence of anxiety and depression within this demographic. For example, Asif *et al*. [22] found that three-quarters of their university student sample reported depression, with over one-third classified in the moderate range. Nearly nine in ten respondents in their study reported anxiety, with approximately half experiencing extreme anxiety. In the current study, a large contributor to elevated BSMAS scores was agreement with the statement: "I use social media in order to forget about personal problems," with which close to half of the participants agreed. These findings suggest that participants may be using social media as a maladaptive coping strategy, turning to digital avoidance rather than addressing underlying stressors. This is consistent with evidence that problematic social network use can function as a maladaptive stress-coping strategy, specifically when individuals use social media to avoid or escape negative emotions rather than engage in problem-focused coping [23]-[25]. Such avoidance patterns are noteworthy as they suggest that smartphone use may interfere with the development of effective emotional regulation skills, potentially exacerbating daily stressors while contributing to the persistence of depressive and anxious symptoms.

The stated difficulty in regulating phone usage identified in the current study points to a perceived loss of control. This is evidenced by approximately two-thirds of respondents agreeing with the MPAS statement: "I use my mobile phone longer than I had intended to," and more than half of respondents indicating agreement with: "I'm always thinking that I should shorten my mobile phone usage." These responses may indicate that participants recognize the need for less time on their phones or social media yet have trouble regulating their use. This pattern is consistent with decreased self-control as described in the broader literature on persuasive design elements intentionally imbedded in mobile technology [26]. While examining and measuring specific persuasive design elements was not a part of the current study, such elements may contribute to the increased difficulty participants reported when attempting to disengage from social media. Fear

of missing out (FOMO) has been identified as a key contributor to this dynamic, with higher levels of FOMO associated with increased difficulty disengaging from social media and reduced self-control [27]. Chen *et al*. [28] note that FOMO and loss of control are compounded by persuasive design elements such as notifications and vibrations, which may be more persuasive than users think. When considering university students, low levels of perceived control, and subsequent educational outcomes, are concerning as lower academic engagement and performance are correlated with increased levels of depression and anxiety, potentially creating a self-reinforcing cycle [29] [30].

Beyond the subjective experience of decreased control, results from the current study are consistent with the concept of attention fragmentation, formally defined as when smartphone interactions disrupt sustained attention through repeated task switching [31], or less formally described by Haidt [32] as a never-ending stream of interruptions. Students in the current study reported checking their phones during class for messages, games, and surfing the web, suggesting that learning was interrupted and attention was split between tasks. The habitual need to monitor a smartphone is associated with diminished cognitive control, while the frequency of device pickups forces rapid task-switching, leading to interrupted attention [33]. The academic cost of this fragmentation is demonstrated by Glass and Kang [34], who found that divided attention led to a significant long-term decrease in retention of lecture material and later exam performance. These findings are particularly concerning given the percentage of participants in the current study experiencing this phenomenon, and the potential for subsequently poorer mental health and decreased academic outcomes.

An association between increased PSU and elevated levels of loneliness was found in the current study. Both the BSMAS and the MPAS were significantly associated with increased loneliness scores. Although respondents may be using social media with the intention to connect more with those around them, findings from the current study were consistent with the social displacement hypothesis, where face-to-face time is replaced with screen time, reducing levels of perceived connection and increasing levels of loneliness [35]. Verduyn *et al*. [36] reported similar findings noting that as individuals spent more time communicating on their phones, they experienced less face-to-face interaction. Results were nuanced, however, as the authors noted that only particularly heavy social media use days were associated with decreased face-to-face time. A study conducted by Hall [37] did not find any significant correlation between increased social media usage and quantity of face-to-face interactions.

The significant associations identified in the current study should be considered in light of several key limitations. First, the current study used a cross-sectional design, limiting the ability to identify the directionality of measured variables. Future longitudinal studies, especially those inclusive of a control group, would help to solidify associations and move toward understanding directionality and causation. Similarly, a mixed-method design allowing for qualitative data collection

would allow for richer results and understanding of study measures. Second, the current study sample included undergraduate students at a large private religious university in the United States, limiting the ability to generalize results to public university students both in and outside of the United States. Third, the study data relied entirely on self-reports, which may be less accurate and prone to responder bias. Fourth, the relatively small sample size and the presence of missing data responses limit the robustness and confidence of the study's findings. Finally, regression modeling did not account for potential clustering within courses used for participant recruitment. Notwithstanding these several limitations, the current study provides an analysis of widely accepted and validated measures of PSU and general mental health, as well as loneliness and psychological distress which are each considered to be significant challenges faced by current university students. Findings from this study emphasize the critical need for addressing optimal smartphone and social media use among university students and the growing need for campus interventions focused on mental health and social connection.

This study contributes to the current body of PSU research by identifying a significant association between both social media and smartphone usage with poorer mental health, increased loneliness, and psychological distress among university students. These findings have been discussed with consideration to social displacement, attention fragmentation, loss of control, maladaptive coping, and FOMO demonstrating the multidimensionality of this issue. Future research should focus on longitudinal designs to better establish causality and a mixed-method approach to better understand the impact of social media and smartphone use on university students' mental wellbeing.

Author Contributions

Conceptualization, K.B., W.H., M.M., B.W., E.O. and C.H.; methodology, J.W. and B.C.; validation, J.W. and B.C.; formal analysis, J.W. and B.C.; investigation, K.B., W.H., M.M., B.W., E.O. and C.H.; data curation, J.W. and B.C.; writing—original draft preparation, K.B. and C.H.; writing—review and editing, K.B., W.H., M.M., B.W., E.O., E.O. and C.H.; supervision, C.H.; project administration, C.H.; All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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