

# EXAMINE THE LINK BETWEEN NOMOPHOBIA AND LONELINESS: EVIDENCE FROM UNIVERSITY STUDENTS OF KHYBER PAKHTUNKHWA (KP), PAKISTAN

*Original Article*

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## ABSTRACT

**Background:** Nomophobia, or the fear of being without a mobile phone, has emerged as a growing concern in modern society, particularly among young adults. Loneliness, characterized by perceived social isolation, has also become prevalent among university students, exacerbated by digital overreliance. Despite the increasing use of smartphones, limited research has explored the link between nomophobia and loneliness, especially in the sociocultural context of Khyber Pakhtunkhwa, Pakistan. This study aimed to investigate this relationship among university students.

**Objective:** To explore the correlation between nomophobia and loneliness among university students in Khyber Pakhtunkhwa, Pakistan, and examine potential gender differences in loneliness.

**Methods:** A cross-sectional quantitative design was employed. Data were collected from 377 university students aged 18–25 years using purposive sampling. An adapted questionnaire, including the Nomophobia Questionnaire (NMP-Q) and the UCLA Loneliness Scale, was utilized. Internal consistency was confirmed with Cronbach's alpha values of 0.93 for NMP-Q and 0.85 for UCLA Loneliness Scale. Descriptive statistics, Pearson correlation analysis, and t-tests were conducted to analyze the data.

**Results:** The mean score for nomophobia was 85.45 (SD = 21.27), and for loneliness, it was 53.29 (SD = 9.59). A significant positive correlation ( $r = 0.408$ ,  $p < 0.01$ ) was observed between nomophobia and loneliness. Gender analysis revealed no significant difference in loneliness between male and female participants ( $p > 0.05$ ). Most participants reported distress when unable to access mobile phones or maintain social connections, indicating a behavioral and emotional dependence on smartphones.

**Conclusion:** The study established a positive relationship between nomophobia and loneliness, emphasizing the psychological and social implications of excessive smartphone reliance. These findings highlight the need for targeted interventions to mitigate the effects of nomophobia and loneliness among students, promoting healthier digital habits and mental well-being.

**Keywords:** Anxiety, Cell phone use, Khyber Pakhtunkhwa, Loneliness, Nomophobia, Social isolation, University students.

## INTRODUCTION

The rapid technological advancements of the twenty-first century have profoundly reshaped human life, with smartphones emerging as indispensable tools that extend far beyond their initial purpose of communication. While once lauded for their ability to transcend physical boundaries, these devices have evolved into handheld supercomputers, offering functionalities that enrich personal and professional lives alike. Their increasing accessibility and adaptability have redefined behaviors, routines, and even the sense of self(1). However, with this evolution comes the challenge of over-reliance, often leading to nomophobia—a phenomenon characterized by the anxiety or discomfort experienced when individuals are unable to access their mobile phones. Nomophobia has become increasingly prevalent, with mounting evidence linking it to various psychological issues, including stress, anxiety, and depression(2, 3). Loneliness, another widespread psychological condition, is marked by a perceived mismatch between an individual's desired and actual social relationships. It often stems from inadequate social engagement, emotional support, or interpersonal connections. While smartphones provide a platform for virtual interaction, their overuse can create a paradoxical scenario where the very tool meant to mitigate loneliness becomes a source of dependence(4). Research indicates that individuals experiencing loneliness often rely on smartphones for emotional support and a sense of belonging, sometimes at the expense of face-to-face interactions. This reliance, while fulfilling immediate needs for connection, may perpetuate a cycle of excessive smartphone use, leading to behavioral and psychological challenges. Despite studies demonstrating that loneliness is a significant predictor of nomophobia, the underlying mechanisms and contextual factors influencing this relationship remain poorly understood(5, 6).

University students, in particular, are uniquely positioned to experience both nomophobia and loneliness due to their transitional life stage and heightened use of mobile phones for academic, social, and entertainment purposes. The pressure of adapting to a new social and academic environment often exacerbates feelings of isolation, making students more susceptible to behaviors that mitigate these emotions, such as excessive smartphone use(7). This overreliance can lead to adverse outcomes, including academic difficulties, mental health challenges, and social disengagement. Furthermore, evidence suggests that gender differences may influence the prevalence and expression of both nomophobia and loneliness, yet this remains an underexplored area of inquiry(8, 9). Existing research has largely focused on the behavioral patterns of mobile phone use, often overlooking its intersection with psychosocial variables such as loneliness, stress, and anxiety. Studies conducted in countries like India and Turkey have highlighted significant links between nomophobia and loneliness, but similar investigations in Pakistan, particularly in the region of Khyber Pakhtunkhwa, remain scarce(10). This gap is concerning given the unique sociocultural dynamics of the region, where smartphone usage continues to rise among young adults. Moreover, the role of entertainment and escapism as mediators in the relationship between loneliness and excessive smartphone use has been suggested but warrants further exploration(11, 12).

This study aims to address these gaps by examining the relationship between nomophobia and loneliness among university students in Khyber Pakhtunkhwa, Pakistan, while also exploring potential gender-based differences. By doing so, it seeks to contribute to the broader understanding of how excessive smartphone reliance impacts mental health and social functioning, offering valuable insights for students, educators, and policymakers. The findings are expected to inform strategies for promoting healthier smartphone use and mitigating the adverse effects of loneliness and nomophobia in educational settings(12, 13).

## METHODS

This study employed a correlational research design to investigate the relationship between nomophobia and loneliness among university students. The data were collected quantitatively through structured questionnaires to ensure an objective and systematic approach to analyzing the relationship between the variables. A quantitative research method emphasizes numerical analysis, and the process of gathering, interpreting, and reporting findings aligns with the framework described by Ollerenshaw and Creswell (14, 15). The study used a survey-based approach to collect data. The instruments utilized in this research

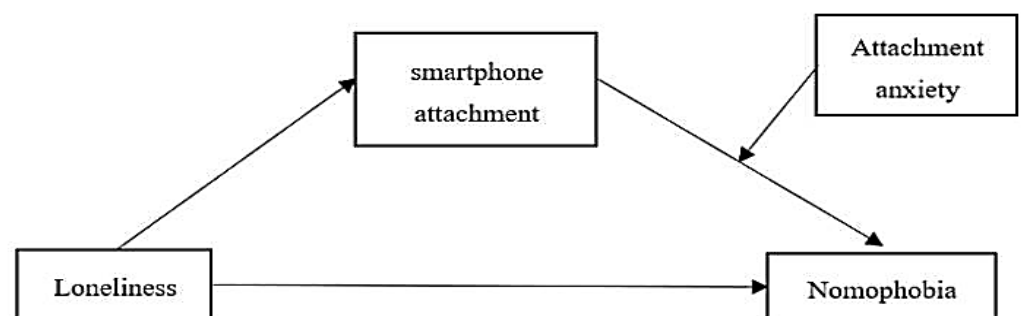


Figure 1 Conceptual Framework

were adopted from Yildirim (16) and Russell and Cutrona(17), which are widely recognized for their validity and reliability in measuring nomophobia and loneliness, respectively. These standardized tools ensured robust data collection for achieving the research objectives. The survey included items designed to assess the relationship between variables and to align with the research framework(18). Participants were recruited using a purposive sampling technique to represent the target population of university students in the age range of 18 to 25 years. A total of 377 students (187 males and 190 females) participated in the study. The inclusion criteria required participants to be proficient in reading, writing, and understanding the English language and to fall within the specified age range. Ethical approval for this study was obtained from the relevant institutional review board (IRB), ensuring adherence to ethical standards in research. Participants provided informed consent before their inclusion, and their confidentiality and anonymity were strictly maintained throughout the study(19, 20).

The operational definitions of key variables were adapted from validated literature. Loneliness (LON) was defined as a negative subjective experience caused by a perceived disparity between desired and actual interpersonal associations, as described by Perlman and Gerson. Nomophobia (NMP), or "no mobile phone phobia," was defined as anxiety or fear arising from the absence of access to a mobile phone, leading to symptoms such as agitation and physiological changes, as outlined by Heng and Gao(13). These definitions informed the conceptual framework and guided the research process(20, 21). The instruments used for data collection included demographic information, the Nomophobia Questionnaire (NMP-Q), and the UCLA Loneliness Scale. The demographic information sheet collected basic details, including gender, age, study program, and university affiliation. The NMP-Q, developed by (16), is a 20-item scale designed to measure nomophobia across four dimensions, each rated on a seven-point Likert scale. The scale has demonstrated strong validity and reliability, with coefficient alpha estimates (Cronbach's  $\alpha = 0.938$ ). The UCLA Loneliness Scale, introduced by Russell and Cutrona(17), is a 20-item tool designed to assess feelings of loneliness and social isolation. It uses a four-point rating scale (1 = never; 4 = always) and has demonstrated reliability with a Cronbach's alpha of 0.857(22, 23).

The data were analyzed using quantitative statistical methods to identify relationships between variables and test the study hypotheses. Descriptive statistics were calculated for demographic information, and inferential statistics were employed to examine the association between nomophobia and loneliness. The reliability of the instruments was confirmed through Cronbach's alpha coefficients, ensuring the robustness of the findings(24, 25). The study followed a rigorous ethical framework, ensuring that all participants were treated with respect and fairness. The informed consent process guaranteed that participants were fully aware of the study's objectives and their rights to withdraw at any stage. The approval from the institutional review board was documented under reference number, ensuring compliance with international research ethics standards(26, 27).

## RESULTS

The results revealed key findings regarding nomophobia and loneliness among university students. The internal consistency of the scales used in the study was high, with a Cronbach's alpha of 0.93 for the Nomophobia Questionnaire (NMP-Q) and 0.85 for the UCLA Loneliness Scale, confirming their reliability. The mean score for nomophobia was 85.45 (SD = 21.27), while the mean score for loneliness was 53.29 (SD = 9.59). Nomophobia showed a significant positive correlation with loneliness ( $r = 0.408$ ,  $p < 0.01$ ), indicating a noteworthy relationship between these variables.

**Table 1 Reliability Test Results**

Variables	$\alpha$	$M (SD)$	Range	Skew	Kurt
NMP-Q	0.938	85.45(21.27)	20-140	-0.662	0.457
UCLA	0.857	53.29(9.59)	20-80	-0.274	1.950

*Note. NMP-Q = Nomophobia Scale; UCLA= Loneliness Scale*

**Table 2 Demographic Characteristics of Respondents**

Demographics	Frequency (%age)
Age 18–20	43 (11.4)
Age 21–25	334 (88.6)
Male	187 (49.6)
Female	190 (50.4)
<b>Total</b>	<b>377 (100.0)</b>

Among the participants, 88.6% were aged between 21-25 years, with 49.6% male and 50.4% female. Responses to the nomophobia questionnaire highlighted that a substantial proportion of students expressed discomfort without consistent access to mobile phones. For instance, 30.8% agreed or strongly agreed that they would feel uneasy without access to information, while 33.2% indicated fear when their mobile phones ran out of power. Similarly, 34.0% reported anxiety when they ran out of data or credits. A significant number of participants, 32.4%, felt compelled to check their mobile phones regularly, and 18.6% expressed nervousness about not being able to contact family or friends immediately.

**Table 3 Response regarding Nomophobia**

S.no	ITEMS	SD (%)	D (%)	SWD (%)	N (%)	SWA (%)	A (%)	S.A (%)
1.	I would be uneasy without continual access to information via my MBP.	26 (6.9)	35 (9.3)	100 (26.5)	28 (7.4)	116 (30.8)	57 (15.1)	15 (4.0)
2.	I'd be infuriated if I couldn't checkup information on my MBP when I desired to.	14 (3.7)	34 (9.0)	66 (17.5)	83 (22.0)	86 (22.8)	77 (20.4)	17 (4.5)
3.	Being unable to get current news on my MBP would make me uneasy.	31 (8.2)	34 (9.0)	87 (23.1)	76 (20.2)	105 (27.9)	38 (10.1)	6 (1.6)
4.	I'd be infuriated if I couldn't utilize my MBP and/or its features when I desired to.	15 (4.0)	24 (6.4)	43 (11.4)	133 (35.3)	82 (21.8)	59 (15.6)	21 (5.6)
5.	Running out of power on my MBP would frighten me.	24 (6.4)	72 (19.1)	42 (11.1)	59 (15.6)	125 (33.2)	35 (9.3)	20 (5.3)
6.	If I ran out of credits or reached my 30 days data limit, I'd panic.	27 (7.2)	34 (9.0)	69 (18.3)	39 (10.3)	128 (34.0)	68 (18.0)	12 (3.2)
7.	If I didn't have a data signal or couldn't connect to WiFi, I kept checking to see if I had a signal or could discover a WiFi-network.	12 (3.2)	23 (6.1)	27 (7.2)	116 (30.8)	81 (21.5)	61 (16.2)	57 (15.1)
8.	If I couldn't use my MBP, I'd be frightened of becoming trapped someplace.	26 (6.9)	85 (22.5)	25 (6.6)	43 (11.4)	124 (32.9)	62 (16.4)	12 (3.2)
9.	If I couldn't check my MBP for a time, I would feel compelled to do so.	13 (3.4)	21 (5.6)	19 (5.0)	89 (23.6)	122 (32.4)	83 (22.0)	30 (8.0)
10.	I would be nervous since I couldn't contact with my friends/family right away.	19 (5.0)	24 (6.4)	97 (25.7)	88 (23.3)	54 (14.3)	70 (18.6)	25 (6.6)
11.	I would be concerned as my family and/or friends could not contact me.	15 (4.0)	35 (9.3)	32 (8.5)	46 (12.2)	166 (44.0)	31 (8.2)	52 (13.8)
12.	I'd be anxious since I wouldn't be able to get text messages or calls.	17 (4.5)	91 (24.1)	49 (13.0)	82 (21.8)	23 (6.1)	81 (21.5)	34 (9.0)
13.	I'd be concerned since I couldn't communicate with family/friends.	17 (4.5)	44 (11.7)	47 (12.5)	70 (18.6)	80 (21.2)	85 (22.5)	34 (9.0)
14.	I would be concerned since I didn't know whether anybody had tried to contact me.	16 (4.2)	85 (22.5)	44 (11.7)	77 (20.4)	115 (30.5)	21 (5.6)	19 (5.0)
15.	I'd be nervous because my constant-connection to my family/friends would be severed.	21 (5.6)	24 (6.4)	37 (9.8)	130 (34.5)	101 (26.8)	27 (7.2)	37 (9.8)

S.no	ITEMS	SD (%)	D (%)	SWD (%)	N (%)	SWA (%)	A (%)	S.A (%)
16.	I would be nervous because I would be disconnected from my online-identity.	42 (11.1)	63 (16.7)	64 (17.0)	53 (14.1)	102 (27.1)	17 (4.5)	36 (9.5)
17.	I would feel uneasy because I couldn't keep up with social-media and internet networks.	27 (7.2)	31 (8.2)	46 (12.2)	118 (31.3)	60 (15.9)	53 (14.1)	42 (11.1)
18.	I'd feel uneasy since I couldn't check my alerts for appraises from my friends and online-networks.	23 (6.1)	26 (6.9)	32 (8.5)	108 (28.6)	107 (28.4)	65 (17.2)	16 (4.2)
19.	I'd become concerned because I couldn't check my emails.	28 (7.4)	23 (6.1)	80 (21.2)	88 (23.3)	88 (23.3)	35 (9.3)	35 (9.3)
20.	I'd feel strange since I wouldn't know what to do.	27 (7.2)	33 (8.8)	47 (12.5)	98 (24.7)	93 (24.7)	57 (15.1)	22 (5.8)

Note: Indicating 1 for strongly disagrees to 5 for strongly-agree.

**Table 4 Response regarding Loneliness**

S.no	Questions	Never	Rarely	Sometimes	Always
1.	How frequently do you sense like you're "in tune" with others around you?	37 (9.8)	101 (26.8)	143 (37.9)	96 (25.50)
2.	How frequently do you sense like you lack friendship?	57 (15.1)	164 (43.50)	125 (33.2)	31 (8.2)
3.	How habitually do you feel like you have no-one to turn-to?	67 (17.8)	100 (26.6)	152 (40.3)	58 (15.4)
4.	How frequently do you feel finished?	33 (8.8)	159 (42.2)	123 (32.6)	62 (16.4)
5.	How frequently do you feel like you belong in a group of friends?	18 (4.8)	88 (23.3)	198 (52.5)	73 (19.4)
6.	How frequently do you feel that you have a lot in mutual with others everywhere you?	39 (10.3)	159 (42.2)	117 (31.0)	62 (16.4)
7.	How frequently do you feel that you're no-longer close to any-one?	59 (15.6)	76 (20.2)	188 (49.9)	54 (14.3)
8.	How frequently do you feel that folks around you don't share your interests and ideas?	37 (9.8)	124 (32.9)	121 (32.1)	95 (25.2)
9.	How frequently do you feel extroverted and friendly?	45 (11.9)	79 (21.0)	187 (49.6)	66 (17.5)
10.	How frequently do you feel close to others?	20 (5.3)	160 (42.4)	143 (37.9)	54 (14.3)
11.	How frequently do you feel left-out?	90 (13.0)	90 (23.9)	190 (50.4)	48 (12.7)
12.	How frequently do you believe that your interactions with others are meaningless?	54 (14.3)	75 (19.9)	110 (29.2)	138 (36.6)
13.	How commonly do you feel as if no one really knows you?	37 (9.8)	117 (31.0)	142 (37.7)	81 (21.5)
14.	How frequently do you feel separated from others?	47 (12.5)	81 (21.5)	194 (51.5)	55 (14.6)
15.	How frequently do you feel like you can find company whenever you want it?	96 (25.5)	83 (22.0)	116 (30.8)	82 (21.8)
16.	How frequently do you feel that there are individuals who truly understand you?	33 (8.8)	147 (39.0)	131 (34.7)	66 (17.5)

S.no	Questions	Never	Rarely	Sometimes	Always
17.	How frequently do you experience shyness?	57 (15.1)	86 (22.8)	127 (33.7)	107 (28.4)
18.	How often do you feel that they are around you but not with you?	99 (26.3)	47 (12.5)	167 (44.3)	64 (17.0)
19.	How frequently do you feel like you have someone to chat to?	25 (6.6)	96 (25.5)	142 (37.7)	377 (100.0)
20.	Do you frequently feel like you have somebody to turn to?	51 (13.5)	149 (39.5)	98 (26.0)	79 (21.0)

*Note: Indicating 1 for never, 2 for rarely, 3 for sometimes, 4 for always.*

In terms of loneliness, 37.9% of respondents reported sometimes feeling "in tune" with others, while 33.2% occasionally felt a lack of companionship. Notably, 50.4% sometimes felt left out, and 51.5% sometimes felt separated from others. These findings illustrate a considerable prevalence of loneliness among the participants, with many experiencing it occasionally across various aspects of their social interactions. The results underscore the psychological and behavioral impacts of excessive mobile phone reliance and its association with loneliness. These findings highlight the need for interventions targeting both nomophobia and loneliness to promote better mental health outcomes.

**Table 5 Correlation of study variables**

	Nomophobia	Loneliness
<b>Nomophobia</b>	<b>1</b>	<b>0.408*</b>
		<b>0.000</b>
	<b>377</b>	<b>377</b>
<b>Loneliness</b>	<b>0.408*</b>	<b>1</b>
	<b>0.000</b>	
	<b>377</b>	<b>377</b>

*Note. \*\* significant at 1% levels.*



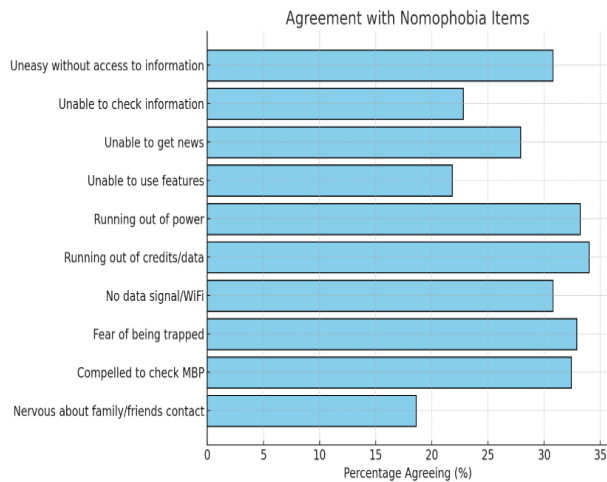


Figure 3 Agreement With Nomophobia Items

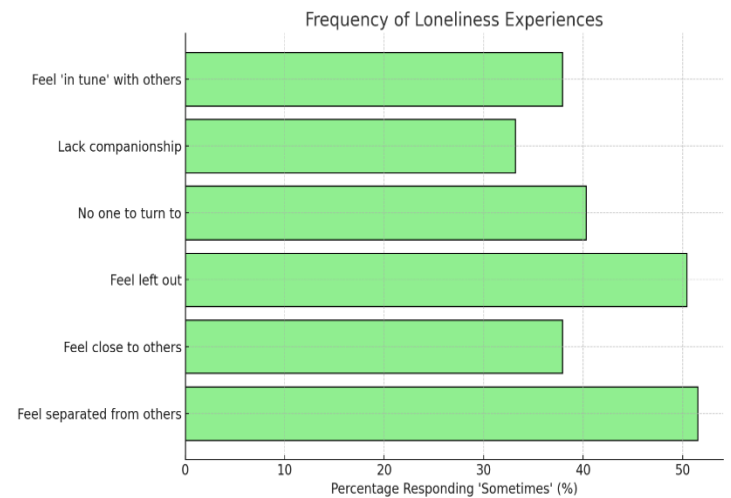


Figure 2 Frequency Of Loneliness Experiences

## DISCUSSION

The findings of the study provided significant insights into the relationship between nomophobia and loneliness among university students, confirming a positive correlation between the two constructs. This aligns with existing literature that highlights the psychological consequences of excessive mobile phone use, including increased anxiety and social isolation. Previous studies have emphasized that individuals with higher levels of loneliness often turn to smartphones to fulfill their emotional and social needs, inadvertently creating a dependence that exacerbates feelings of distress when mobile phone access is restricted. The present study contributes to this growing body of evidence by reinforcing these associations in a specific population of young adults in Khyber Pakhtunkhwa, Pakistan(28, 29). The high internal consistency of the scales used in the study underscores the reliability of the findings. The elevated mean scores for both nomophobia and loneliness among participants indicate a notable prevalence of these conditions in the sampled population. This reinforces concerns raised by earlier research about the pervasive role of mobile phones in the lives of young adults and their potential to act as both a coping mechanism and a source of psychological distress. The strong association between nomophobia and loneliness reflects the dual-edged nature of mobile phone use, where reliance on technology can both alleviate and amplify feelings of isolation(29, 30).

While the study provides valuable data, its scope is limited to university students within a specific age range and region. This restricts the generalizability of the findings to other demographic groups or regions. Furthermore, the reliance on self-reported data introduces the possibility of response bias, as participants may have underreported or overreported their levels of nomophobia or loneliness. The study also does not explore the underlying mechanisms driving the relationship between these variables, such as the mediating roles of entertainment or escapism motivations, which have been suggested in previous research(30, 31). Another limitation is the exclusion of non-student populations or individuals who may experience loneliness or nomophobia differently due to varying socioeconomic or cultural contexts. Expanding future research to include more diverse samples would enhance the applicability of findings and provide a more comprehensive understanding of these phenomena. Additionally, longitudinal designs could offer deeper insights into how these relationships evolve over time and under different circumstances(32, 33).

The study's strength lies in its focus on a population that is particularly vulnerable to the psychological effects of mobile phone overuse. University students are at a transitional life stage, often characterized by social and academic pressures that can exacerbate feelings of loneliness. By identifying the prevalence and predictors of nomophobia and loneliness in this group, the study highlights an urgent need for targeted interventions. These could include educational programs aimed at promoting healthier digital habits, counseling services to address underlying emotional needs, and awareness campaigns to reduce stigma around seeking help for psychological issues(10, 34). Future research should aim to explore additional variables, such as the role of personality traits, coping strategies, and cultural differences, in shaping the relationship between nomophobia and loneliness. Studies could also examine the effectiveness of interventions designed to mitigate these conditions, providing evidence-based recommendations for educators, parents, and

policymakers. Expanding the use of mixed methods, including qualitative approaches, would further enrich understanding by capturing the subjective experiences of individuals struggling with these issues(7).

The findings underscore the significant interplay between nomophobia and loneliness among university students, emphasizing the need for proactive measures to address the psychological and behavioral challenges posed by excessive mobile phone reliance. While the study has certain limitations, its contributions to the field are noteworthy, offering a foundation for future research and practical applications aimed at improving mental health and social well-being in the digital age.

## CONCLUSION

This study explored the relationship between nomophobia and loneliness among university students in Khyber Pakhtunkhwa, Pakistan, highlighting the psychological and behavioral impacts of excessive smartphone reliance. The findings revealed a significant positive correlation between nomophobia and loneliness, emphasizing how excessive dependence on mobile phones can amplify feelings of anxiety and social disconnection. The study also demonstrated how participants experienced distress when unable to access their mobile phones or maintain connections with family, friends, and online networks. While participants often turned to smartphones for emotional support, this behavior contributed to a cycle of dependence and loneliness. These insights underline the importance of addressing nomophobia and loneliness through awareness campaigns, educational programs promoting healthy digital habits, and targeted interventions for students. By shedding light on this growing issue, the study offers valuable contributions to the understanding of technology's role in mental health and provides a foundation for future research and practical strategies to mitigate these challenges.

## AUTHOR CONTRIBUTIONS

Author	Contribution
Maryam Ayaz	Substantial Contribution to study design, analysis, acquisition of Data Manuscript Writing
Rida Urooj*	Substantial Contribution to study design, acquisition and interpretation of Data Critical Review and Manuscript Writing
Tajmeena	Substantial Contribution to acquisition and interpretation of Data
Sumayya Iftikhar	Contributed to Data Collection and Analysis
Zia Ur Rehman	Contributed to Data Collection and Analysis
Sania Ghani	Substantial Contribution to study design and Data Analysis

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