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Smartphone separation anxiety: exploring nomophobia, mental well-being, and interpersonal closeness in emerging adults

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ABSTRACT

Background and Objective: Nomophobia, defined as the fear of being without access to a mobile phone, has become increasingly prevalent among young adults due to the widespread use of smartphones. Excessive dependence on mobile phones may influence psychological well-being and interpersonal functioning. The current research was conducted to determine the relationship between nomophobia, mental health, and interpersonal relationships among early adults, with the hypothesis that there would be a positive relationship between these variables.

Methods: A sample of 74 early adults (25 males and 49 females) aged 18-25 years was selected using a purposive sampling technique. Data were collected using a Demographic Form, Nomophobia Questionnaire (NMP-Q), General Health Questionnaire, and the Functional Idiographic Assessment Template–Questionnaire (FIAT-Q) Class D: Disclosure and Interpersonal Closeness to assess study variables. Pearson correlation and multiple linear regression analyses were performed to examine relationships among variables.

Results: The mean scores were 86.72 ± 20.02 for nomophobia NMP-Q, 37.72 ± 7.13 for mental health GHQ and -1.31 ± 17.83 for interpersonal closeness (FIAT-Q-D). Correlation analysis showed a strong positive association between nomophobia and poor mental health ($r = 0.80$, $p < 0.001$) and a moderate positive correlation with interpersonal difficulties ($r = 0.32$, $p < 0.01$), while mental health was not significantly associated with interpersonal closeness ($r = 0.16$, $p > 0.05$). Multiple linear regression analysis revealed that nomophobia was a significant positive predictor of interpersonal relationships ($\beta = 0.40$), whereas gender showed a modest positive effect ($\beta = 0.23$).

Conclusion: Nomophobia is significantly associated with poorer mental health and weaker interpersonal relationships among young adults. It also emerged as a significant predictor of interpersonal functioning, highlighting the need to address excessive smartphone use and its psychosocial effects.

Keywords: Nomophobia, mental health, interpersonal relationships, early adults, smartphone dependence.

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Introduction

Rapid technological advancement has made smartphones an integral part of daily life. While mobile devices facilitate communication, information access, and social connectivity, excessive dependence on smartphones has raised concerns regarding their psychological and social consequences. One emerging phenomenon associated with excessive smartphone use is nomophobia, defined as the fear or anxiety experienced when individuals are unable to access or use their mobile phones. Individuals with nomophobia often feel distress when they lose their phone, run out of battery, or lack network connectivity.[1]

Global smartphone usage has increased dramatically over the past decade. Reports indicate that smartphone shipments worldwide reached approximately 1.43 billion units in 2022, with nearly 78% of the global population using smartphones.[2] Similarly, smartphone ownership among adults in the United States increased from 35% in 2011 to 85% in 2021.[3] This widespread adoption has intensified concerns regarding the psychological and behavioral effects of excessive smartphone dependence.

Nomophobia has been reported to be particularly prevalent among adolescents and young adults, who represent the most active smartphone users. Previous studies have documented high prevalence rates of nomophobia among university and medical students.[4-6] Research further suggests that excessive smartphone use and nomophobia are associated with various psychological concerns, including

anxiety, depression, and loneliness, sleep disturbances, and impaired academic performance.[7-11]

Interpersonal relationships, defined as socially and emotionally significant connections between individuals, are essential for psychological well-being and healthy social functioning.[6] Excessive smartphone engagement may reduce face-to-face interactions and weaken interpersonal communication, thereby affecting social relationships.[10,12,13] Several studies have shown that increased smartphone use and nomophobia are associated with loneliness, reduced social interaction, and poorer interpersonal functioning.[5,6,8,14]

From a theoretical perspective, nomophobia has been conceptualized as a behavioral condition related to anxiety disorders. Although it is not currently recognized as a distinct disorder in the Diagnostic and Statistical Manual of Mental Disorders, its symptoms resemble those of specific phobias and anxiety-related conditions. Individuals with nomophobia may experience symptoms such as anxiety, agitation, sweating, trembling, and tachycardia when separated from their mobile phones.[2,5,15,16]

Young adults often have high daily screen time and frequently check their phones, which may limit direct social interaction and reduce engagement with people around them. Such behavioral patterns may indicate stronger attachment to mobile devices than to real-life social connections. Previous research also suggests that excessive smartphone use can negatively influence mental health and social functioning. Therefore, it is important to explore whether nomophobia and mental health influence interpersonal relationships among early adults. Understanding these relationships may help identify whether nomophobia and mental health act as predictors of interpersonal functioning in this population. The present study aimed to examine the association between nomophobia, mental health, and interpersonal relationships among early adults. Specifically, the study sought to statistically evaluate the impact of nomophobia on mental health, determine whether interpersonal relationships are influenced by nomophobia, and assess the quantitative relationship between nomophobia, mental health, and the strength of interpersonal relationships.

Methods

This study employed a cross-sectional correlational design to examine the relationship between nomophobia, mental health, and interpersonal relationships among early adults. Assuming 4% margin of error and 96% confidence level, the required sample size was calculated to be 80, with both male and female participants aged 18-25 years enrolled using purposive sampling, a non-probability sampling technique, all being undergraduate students from different programs in the University of Management and Technology, Johar Town Campus, Lahore. Responses of 6 participants were discarded due to insufficient data provided with numerous empty entries to prevent statistical inference errors.

The study population comprised regular, undergraduate university students of both genders aged 18-25 years, representing the early adult age group. Participants were selected to reflect key characteristics of the target population of interest. Individuals with any reported physical disability were excluded from the study to minimize potential confounding factors that could influence the study variables.

This cross-sectional study was conducted following standard ethical procedures. Prior to participation, written informed consent was obtained from all individuals after explaining the purpose of the research, the voluntary nature of participation, and their right to withdraw at any time. Confidentiality of participants' responses was strictly maintained. Demographic information, including age, gender, educational level, marital status, family system, and employment status, was collected using a structured questionnaire. Nomophobia was assessed using the Nomophobia Questionnaire (NMP-Q), a 20-item self-report instrument rated on a 7-point Likert scale, measuring mobile phone dependency, anxiety related to disconnection, and behavioral tendencies.[17] Total scores were calculated by summing item responses, with higher scores indicating more severe nomophobia, categorized as absent (20), mild (21-59), moderate (60-99), and severe (100-140).

General psychological health was evaluated using the General Health Questionnaire-12 (GHQ-12), a validated 12-item self-administered screening tool designed to detect individuals at risk for psychiatric disorders.[18] Each item is rated on a 4-point Likert scale (0-3), with six positively worded items reverse-scored; higher total scores reflect poorer general health. The GHQ-12 demonstrated excellent internal consistency in this study (Cronbach's $\alpha = 0.94$). Interpersonal functioning was measured using the Functional Idiographic Assessment Template Questionnaire (FIAT-Q), which assesses five domains of social and interpersonal behavior.[19] For the present study, only Class D, "Disclosure and Interpersonal Closeness," was analyzed. This subscale comprises seven items (2, 4, 9, 13, 15, 17, and 23) reverse-scored according to the original guidelines, rated on a 6-point Likert scale from "Strongly Disagree" to "Strongly Agree."[20] The research instruments were selected after reviewing their psychometric properties, and permission for their use was obtained from the respective authors. Participants completed all questionnaires in a single session, requiring approximately 5-10 minutes, and were acknowledged for their participation upon completion.

Statistical analysis

Data were analyzed using IBM SPSS Statistics. Descriptive statistics were calculated for demographic and study variables, with means and standard deviations reported for continuous variables and frequencies and percentages for categorical variables.

Pearson's correlation analysis was performed to examine the relationships between nomophobia (NMP-Q scores), mental health (GHQ-12 scores), and interpersonal relationships (FIAT-Q Class D scores). To assess whether nomophobia and mental health predicted interpersonal relationships, multiple linear regression analysis was conducted with interpersonal relationship scores as the dependent variable.

Additionally, independent sample *t*-tests were applied to evaluate gender differences in the study variables. A *p*-value ≤ 0.05 was considered statistically significant.

Results

A total of 74 early adults participated in the study with a mean age of 21 ± 2.52 years. The majority of participants were aged 21-23 years (60.8%), followed by 18-20 years (35.1%), while only 4.1% were aged 24-25 years. Females constituted the larger proportion of the sample (66.2%) compared with males (33.8%). All participants were bachelor's level students (100%). Most respondents were single (97.3%), while a small proportion were married (2.7%). Regarding family structure, 71.6% belonged to a nuclear family system, whereas 28.4% reported living in a joint family system. The majority of participants were unemployed (86.5%), while 13.5% reported being employed. Detailed demographic characteristics of the participants are presented in Table 1.

Table 2 presents the descriptive statistics and reliability analysis of the study instruments. The NMP-Q showed a mean score of 86.72 ± 20.02 with excellent internal consistency (Cronbach's α = 0.91). The GHQ-12 demonstrated a mean score of 15.5 ± 7.34 and good reliability (α = 0.86). Similarly, the FIAT-Q Class D: Disclosure and Interpersonal Closeness had a mean score of -1.31 ± 17.83 with acceptable internal consistency (α = 0.70). Overall, the reliability analysis indicates that all study instruments exhibited satisfactory internal consistency in the present sample.

Table 3 revealed that nomophobia has a significant positive correlation with mental health (r = 0.801, p < 0.05) and interpersonal relationships (r = 0.32, p < 0.01). Mental Health had an insignificant relationship with interpersonal relationships (r = 0.16, p > 0.05).

Table 1. *Descriptive statistics of demographic variables.*

Characteristics	f (%)	M	SD
Age		21	2.52
18-20	26 (35.1)		
21-23	45 (60.8)		
24-25	3 (4.1)		
Gender			
Male	25 (33.8)		
Female	49 (66.2)		
Education			
Undergraduate Bachelor Students	74 (100)		
Marital status			
Married	2 (2.7)		
Single	72 (97.3)		
Family system			
Nuclear	53 (7.6)		
Joint	21 (28.4)		
Employment			
Self-employed	10 (13.5)		
Unemployed	64 (86.5)		

Table 2. *Psychometric properties and descriptive statistics of nomophobia questionnaire, general health questionnaire, and functional idiographic assessment questionnaire (Class D: Closure and Interpersonal Closeness).*

Scale	*M*	*SD*	*Range*	α
Nomophobia Questionnaire	86.72	20.02	35-140	0.91
General Health Questionnaire	15.5	7.34	20-54	0.86
Functional Idiographic Assessment Questionnaire	-1.31	17.83	-42-30	0.70

Table 3. *Descriptive statistics and correlation between demographics, nomophobia, mental health, and interpersonal relationships.*

Variable	*M*	*SD*	1	2	3
1. NMP-Q	86.72	20.02		0.801*	0.32*
2. GHQ	37.72	7.13			0.16
3. FIAT-Q-D	-1.31	17.83			

**p < 0.05*

Table 4. *Linear regression coefficients of nomophobia, mental health, and gender on interpersonal relationships Note (N = 74).*

Variable	*B*	*B*	*SE*
Constant	-32.18		12.8
NMP-Q	0.35	0.40	0.17
GHQ	-0.38	-0.15	0.48
Gender	8.62	0.23	4.34
R^2	0.17		

Table 4 presents the results of the multiple linear regression analysis examining the predictors of interpersonal relationships. The overall model explained 17% of the variance in interpersonal relationships (R^2 = 0.17). Nomophobia emerged as a significant positive predictor of interpersonal relationships (β = 0.40, $p < 0.05$). However, mental health (β = -0.15, $p > 0.05$) and gender (β = 0.23, $p > 0.05$) were not found to be significant predictors of interpersonal relationships among early adults.

Discussion

The present study aimed to examine the relationship between nomophobia, mental health, and interpersonal relationships among early adults. Specifically, it sought to determine whether nomophobia is associated with reduced mental health and weaker interpersonal relationships, and whether nomophobia and mental health serve as predictors of interpersonal functioning.

Consistent with previous literature, earlier studies have reported significant associations between nomophobia and psychological distress, including anxiety, depression, and insomnia.[21,22,23] Ahmad et al. reported 97% medical and dental students were experiencing nomophobia, with a statistically significant difference observed between Nomophobia and time spent on mobile phones per day (p-value < 0.05). Similarly, a multi-institutional study by Jahrami et al. [22] reported 21% participants with severe nomophobia and 14% had clinical insomnia (p = 0.001). Unlike the current study, where gender showed a modest positive effect (β = 0.23), a significant gender differences were seen in NMP-Q scores, with women reporting greater levels of nomophobia among university students in Lahore.[10] Similarly, a study by Zeb et al. [23] from Khyber Pakhtunkhwa, Pakistan, reports a higher level of sleep deprivation among university students having nomophobia, with a female preponderance.

The findings of the present study also indicate that higher levels of nomophobia are associated with poorer mental health among early adults, supporting earlier evidence reported by Sharma et al. [24] Increased anxiety related to losing or being separated from a mobile phone may limit meaningful interpersonal engagement with family members, friends, and romantic partners, thereby weakening social relationships.[25] Furthermore, the regression analysis revealed that nomophobia and gender were significant predictors of interpersonal relationships, whereas mental health did not emerge as a statistically significant predictor in this sample.

Limitations of the study

This study has certain limitations. The cross-sectional design restricts the ability to infer causal relationships among nomophobia, mental health, and interpersonal relationships. In addition, because of financial and time constraints of the degree, the relatively small sample size and inclusion of only early adult students limit the generalizability of the findings. The use of self-reported questionnaires may also introduce response bias.

Future research should include larger and more diverse populations and employ longitudinal designs to better understand causal relationships. Studies exploring intervention strategies to reduce excessive mobile phone use and nomophobia among young adults are also recommended.

Conclusion

Nomophobia appears to be common among early adults and is associated with adverse psychological and social outcomes. Higher levels of nomophobia were linked with poorer mental health and weaker interpersonal relationships. Significant gender differences in nomophobia were also observed. The study instruments demonstrated satisfactory reliability. Correlation analysis indicated that nomophobia was significantly associated with mental health and interpersonal relationships, whereas mental health showed no significant relationship with interpersonal relationships.

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List of Abbreviations

FIAT-Q	Functional Idiographic Assessment Template-Questionnaire
FIAT-Q-D	Functional Idiographic Assessment Template-Questionnaire Class D: Interpersonal Closeness
GHQ	General Health Questionnaire
NMP-Q	Nomophobia Questionnaire
S.D	Standard Deviation
SPSS	Statistical Package for the Social Sciences

Conflict of interest

None to declare.

Grant support and financial disclosure

None to disclose.

Ethical approval

The ethical approval of the study was obtained from the Institutional Review Board of the School of Professional Psychology, University

of Management and Technology (Lahore) vide Ref. No. ICPY/20/227 dated: 03-02-2023.

Authors' contributions

MABD: Study design, data collection, analysis of data, critical intellectual input, interpretation of results, and drafting of manuscript.

ST: Conceptualization, study design, critical intellectual input, analysis of data, interpretation of results, manuscript drafting.

ALL AUTHORS: Approval and full responsibility of the final version of the manuscript to be published.

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