A Cross-Sectional Study to Assess the Correlation Between Nomophobia and Mindfulness Among Nursing Students of Selected Nursing Colleges in Paschim Bardhaman, West Bengal

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ABSTRACT

Background: Nomophobia is a psychological condition characterized by the fear or anxiety of being disconnected from mobile phone connectivity. Mindfulness characterized by present moment awareness and non-judgmental acceptance has been associated with improved emotional regulation, enhanced attention and concentration, and awareness of behavioral patterns which may help individuals, manage anxiety associated with smartphone disconnection. The study aimed to assess the level of nomophobia and mindfulness and examined their correlation among nursing students.

Materials and Methods: A web based cross-sectional study was conducted over six weeks in five selected nursing colleges. A total of 200 nursing students were selected using stratified sampling with census sampling applied to the three colleges with smaller student strength and proportionate sampling applied to the two nursing colleges with larger student strength. Data were collected using self-administered questionnaires comprising of demographic details, Nomophobia Questionnaire and Mindful Attention Awareness Scale. Data were analyzed using Statistical Package for Social Sciences (SPSS) version 20.0. Descriptive statistics and Karl Pearson's Corrrelation Coefficient were applied.

Result: All participants exhibited some degree of nomophobia. Most nursing students (63.5%) had moderate levels, 20% had severe levels, and 16.5% had mild levels. The mean mindfulness score was 4.15 ± 1.02, and 54% of nursing students showed high mindfulness. A statistically significant mild negative correlation was observed between nomophobia and mindfulness ($r = -0.264$).

Conclusion: Nomophobia was highly prevalent among nursing students. Higher mindfulness was associated with lower nomophobia. Integrating mindfulness-based strategies into nursing education may promote healthier smartphone usage and enhance psychological well-being.

Key words: Nomophobia. Mindfulness, Nursing Students, Nursing Colleges, Paschim Bardhaman, West Bengal

INTRODUCTION

The term *Nomophobia*, an abbreviation for "No Mobile Phone Phobia" was first introduced in a 2008 study by the British

Portal Service. It is used to describe a psychological condition characterized by the fear or anxiety of being disconnected from mobile phone connectivity including situation such as low battery, lack of internet access or switching the device off.[1] The various psychological factors contribute to excessive mobile phone use are low self esteem and extroverted personality traits. Individual with mental health conditions such as social phobia, social anxiety disorder, or panic disorder may exhibit nomophobic symptoms. The signs and symptoms of nomophobia include anxiety, respiratory alterations, trembling, perspiration, agitation, disorientation and tachycardia.[2]

Nomophobia is especially prevalent among younger populations[3], including college and university students[4-5], due to their high dependency on smartphones for social media, searching for information on the internet, texting family or friends, talking with family or friends, and recreational purposes[6-7]. A study conducted by Vishali et al (2021)[8] found that majority (56.0%) of college students had moderate levels of nomophobia, and 75.2% reported a moderate level of effect on their life due to smartphone usage. Nursing students, who are under constant academic pressure and clinical responsibilities are vulnerable to develop nomophobia. A study conducted among nursing students in Mangalore found that (62.03%) of nursing students were identified as Nomophobia[9]. Alsayed et al. (2020)[10] indicate that (94.8%) of nursing students are aware that they carry their phones at all times, while (92.6%) check the smartphones immediately upon waking up in the morning. A significant portion of nursing students (77.8%) record information using their smartphones during class, and (24.4%) consistently use smartphone in clinical environments. The most common use of smartphones was for accessing information online (93.3%), which was reported more often during group study than during individual study. A substantial number of the respondents engage in

WhatsApp study groups (89.6%) and (85.2%) of them use social media platforms for academic purposes. Although smartphones facilitate social interactions, information access, and convenience, excessive smartphone use can lead to poor sleep quality[11-14], inattention[15], difficulties in cognitive-emotion regulation, impulsivity, impaired cognitive function, addiction to social networking, shyness and low self-esteem.[16]

Mindfulness is a determining factor for enhancing the concentration of an individual and reducing distraction, thereby enhancing productivity and overall performance. It involves a way of seeing, feeling, knowing and loving that is present focused and facilitates greater centeredness of focus and awareness. Mindfulness requires people to be open to and accepting of their present experience in order to develop tolerance for difficult feelings expressed within oneself and by others.[17] Zinn J (2003)[18] define mindfulness as the awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding of experience moment by moment.

Numerous studies have shown that mindfulness reduces mind wandering[19], enhances working memory[20], and improves attention and concentration.[21]

Limited research has been conducted in India regarding nomophobia and mindfulness particularly in the region like Paschim Bardhaman, West Bengal where nursing students increasingly engaged with digital technology. Therefore, this study was undertaken to assess the correlation between nomophobia and mindfulness among nursing students in selected nursing colleges of Paschim Bardhaman, West Bengal.

Objectives of the Study
1. To assess the level of nomophobia among nursing students
2. To assess the level of mindfulness among nursing students

3. To examine the relationship between nomophobia and mindfulness among nursing students

MATERIALS AND METHODS

Study Design and setting: A web based cross-sectional designed was used to conduct the study among nursing students in five selected nursing colleges of Paschim Bardhaman, West Bengal.

Study participants and Sampling: The study was carried out among Bachelor of Nursing students from different academic batches. Based on finding from previous study conducted by Sharma et al.,[22] a moderate effect size (r=0.29) was anticipated, with significance level of 0.05 (two-tailed) and a desired statistical power of 90%, the minimum required sample size was estimated to be 121 participants. Considering a possible 20% non-response or incomplete data, the adjusted sample size was calculated to be 145 participants. However, a total of 200 participants were recruited to enhance precision and reliable findings. Nursing students who was available during the data collection period and own atleast one smartphone were included in the study. Whereas, nursing students diagnosed with psychiatric illness or undergoing psychiatric treatment were excluded from the study.

Sampling Technique: The study employed a stratified sampling technique using a hybrid recruitment approach. Total enumerative (Census) was applied to the three nursing colleges with smaller student strength to ensure full representation. Proportionate sampling was applied to the two nursing colleges with larger student strength to maintained a balanced and representative distribution across the total population (N=553).

Data Collection Tools and Techniques

Data were collected using web-based structured questionnaires in the English language, designed and administered through Google Forms. The questionnaire consisted of three parts: (i) Socio-demographic Data Sheet, (ii). Nomophobia Questionnaire (NMP-Q) and (iii). Mindful Attention Awareness Scale (MAAS)

The Nomophobia Questionnaire (NMP-Q) developed and validated by Yildrim and Correia consists of 20 items rated on a 7-point Likert scale. Higher total scores indicate more severe levels of nomophobia[23]. Whereas, the Mindfulness Attention Awareness Scale (MAAS) developed by Krick Warren Brown and Richard M consists of 15 items rated 6 points Likert scale. For scoring, the mean score of all 15 items was computed with higher scores indicated a higher level of mindfulness[24].

A pilot study was conducted among 20 nursing students to assess the feasibility and the reliability of the data collection tools. The Cronbach's alpha values were 0.897 for the Nomophobia Questionnaire (NMP-Q) and 0.895 for the Mindfulness Attention Awareness Scale (MAAS) indicating good internal consistency.

Prior data collection, an online orientation session was conducted with class coordinators, following which a Google Forms link containing the informed consent, participants information sheet and structured questionnaires were shared with the class coordinators of each academic year via email, and thereafter, class coordinator circulated the link among their respective batches through their class WhatsApp Group. Participants who did not provide consent or submitted incomplete responses were excluded from the study. The date collection was carried out over a period of six weeks from the third week of November to the fourth week of December 2025.

Statistical Analysis

IBM SPSS for Window Version 20.0 was used to analyze data. Prior to data analysis through SPSS Version 20.0, the data was organized and coded using MS Excel 2016. Data screening was carried out to check for missing data. Descriptive analysis including

frequency and percentage was used to summarize socio-demographic details of the participants. Karl Pearson's Correlation Coefficient was used to analyze the correlation of nomophobia and mindfulness among nursing students.

Ethical Considerations

Prior to conducting the study, ethical permission was obtained from the Institutional Ethics Committee. Approval from the Principals of the selected five nursing colleges was obtained. Informed consent was taken from all the participants and their participation was completely voluntary. The alphanumeric codes were assigned to each participant to maintain confidentiality and anonymity.

RESULT

Socio-demographic characteristics and information related to Smartphone utilization

Socio-demographic data were obtained from 200 nursing students. The majority (80%) of the participants belonged to the 20-25 years age group and all participants (100%) were female. Most of the students (77%) were residing in hostel. 36% of the participants were studying in the 2nd year followed by 35% in the 4th year. With respect to Smartphone usage, 96% of nursing students owned one Smartphone. A majority (73.5%) of the participants reported using Smartphone more in night time. Most students (78.5%) have been using Smartphone for 1-3 years, and 65% spent an average of 1-5 hours per day on Smartphone use. Furthermore, 74.5% of the participants checked Smartphone more than five times per hours. 70% of the participants used Smartphone for multiple purposes including calls, social networking, academic/study purpose, online shopping, and entertainment. (Table 1)

Table 1: Socio-demographic characteristics of nursing students (n= 200)

Socio-demographic Characteristics		n (%)
Age	Less than 20 years	38 (19%)
	20-25 years	160(80%)
	More than 25 years	2 (1%)
Gender	Female	200(100%)
	Male	0 (0%)
Residing in	Hostel	154(77%)
	Day Scholar	46 (23%)
Study years	1st Year	22 (11%)
	2nd Year	72 (36%)
	3rd Year	36 (18%)
	4th Year	70 (35%)
Number of Smartphone owned	1	192 (96%)
	2	8 (4%)
Usage in time	More in day time	53 (26.5%)
	More in night time	147 (73.5%)
Duration of using Smartphone	Less than 1 year	12 (6%)
	1-3 years	157 (78.5%)
	More than 3 years	31 (15.5%)
Average hour spent on a Smartphone per day	Less than 1 hour	43 (21.5%)
	1-3 years	130 (65%)
	More than 3 years	27 (13.5%)
Frequency of checking Smartphone per hour	1-3 times per hour	49 (24.5%)
	3-5 times per hour	2 (1%)
	More than 5 times per hour	149 (74.5%)
Purpose of using Smartphone	Calls	200 (100%)
	Social networking	30 (15%)
	Academic/study Purposes	15 (7.5%)
	Online Shopping	8(4%)

	Entertainment (Music, Videos, Games)	7 (3.5%)
	All the above (Social networking, Academic/study Purposes, Online Shopping, Entertainment)	140 (70%)

Nomophobia

Among 200 participants, 100% of nursing students had nomophobia out of which majority 63.5% had moderate nomophobia, 20% had severe nomophobia and 16.5% had mild nomophobia. (Table 2)

Table 2: Level of nomophobia among nursing students (n= 200)

Nomophobia Level	Score range	Frequency (f)	Percentage (%)
Absent	20	0	0
Mild	21-59	33	16.5%
Moderate	60-99	127	63.5%
Severe	100-140	40	20%

Mindfulness

The mean mindfulness score of the participants was 4.15± 1.02. 54% of nursing students had high level mindfulness where 46% had low level of mindfulness. (Table 3)

Table 3: Level of Mindfulness among nursing students (n=200)

Mindfulness Level	Score range	Frequency (f)	Percentage (%)
Low Mindfulness	<4.15	92	46%
High mindfulness	≥4.15	108	54%

Relationship of Nomophobia and Mindfulness

Nomophobia was negatively correlated with mindfulness with a Karl Pearson's correlation coefficient (r) of -0.264 indicating a mild negative correlation, signifies that higher level of mindfulness is associated with lower level of nomophobia. The correlation was statistically significant leading to rejection of the null hypothesis. (Table 4)

Table 4: Correlation of nomophobia with mindfulness of nursing students

	Mindfulness
Nomophobia	r = -0.264*

Note: r = Karl Pearson's correlation coefficient. The negative correlation indicates an inverse relationship between nomophobia and mindfulness.

***Correlation is significant at 0.01 level (P=0.01)*

DISCUSSION

The present study was conducted to assess the level of nomophobia and mindfulness among nursing students and to examine the relationship between these two variables. The findings revealed that nomophobia was highly prevalent among nursing students, with all participants experiencing some degree of nomophobia. The majority 63.5% had moderate nomophobia, while 20% had severe levels and 16.5% had mild levels.

The high prevalence of nomophobia observed in this study is consistent with previous research conducted among nursing students. Roy et al. (2025) [25] reported that 72% of nursing students experienced moderate to severe nomophobia, while Ismail et al. (2020)[26] found that 68% had moderate and 14% had severe nomophobia. The similarity in findings suggests that nursing students are particularly vulnerable to smartphone dependency due to academic pressure, clinical responsibilities, and the need for constant communication.

In the present study, smartphone usage patterns indicated high engagement. A large proportion of students reported checking their smartphones more than five times per hour 74.5% and using smartphones predominantly during night time 73.5%. These behaviors reflect habitual and possibly compulsive usage patterns. Frequent checking behavior may stem from fear of missing out, academic notifications, or social networking engagement. Such usage patterns have been associated in

previous studies with poor sleep quality[27], anxiety[28], and reduced concentration[29].

With respect to mindfulness, the mean score was 4.15 ± 1.02. Slightly more than half of the participants 54% demonstrated high mindfulness, while 46% showed low mindfulness. This indicates that although nomophobia levels were considerable, many students still possess moderate levels of awareness and present-moment attention.

The most important finding of this study was the statistically significant negative correlation between nomophobia and mindfulness ($r = -0.264$, $p = 0.05$). This indicates that as mindfulness increases, nomophobia decreases. Although the strength of correlation was mild, the relationship was significant, leading to rejection of the null hypothesis.

This finding is in line with Jeong and Bae (2024)[30], who reported that mindfulness reduces smartphone addiction by improving emotional regulation and reducing rumination. Zhang et al. (2025)[31] also found that mindfulness-based interventions significantly reduced various forms of mobile phone addiction. Mindfulness enhances self-regulation, reduces impulsivity, and improves awareness of behavioral patterns, which may help individuals manage anxiety associated with smartphone disconnection.

The negative association observed in this study can be explained by the theoretical understanding that mindfulness promotes emotional stability, acceptance, and non-reactivity. Students with higher mindfulness are likely better equipped to tolerate temporary disconnection from their smartphones without experiencing excessive anxiety.

Therefore, the findings suggest that mindfulness may act as a protective psychological factor against nomophobia. Introducing structured mindfulness-based programs within nursing curricula may help reduce excessive smartphone dependency and promote healthier digital behaviors among students.

Limitation

The cross-sectional design limited casual inference between nomophobia and mindfulness. Data were collected using a self-administered questionnaire which may be subject to reporting bias. The study was conducted in five nursing colleges in Paschim Bardhaman, West Bengal and included only female participants, limiting generalizability and gender comparisons. Additionally, other potential influencing variables were not assessed. A comprehensive discussion of the findings was difficult due to limited availability of research on this topic particularly among nursing students in the Indian and International context. However, this limitation enhances the significance of the study as it represents one of the first studies in the Indian context to assess the correlation between nomophobia and mindfulness among nursing students.

CONCLUSION

The present study concludes that nomophobia is highly prevalent among nursing students. All participants exhibited some level of nomophobia, with the majority experiencing moderate to severe levels. This highlights the growing dependence on smartphones among nursing students, likely driven by academic requirements, social connectivity, and digital engagement.

The findings also revealed that more than half of the students demonstrated high levels of mindfulness. Importantly, a statistically significant mild negative correlation was found between nomophobia and mindfulness. This indicates that higher mindfulness is associated with lower levels of nomophobia.

The results suggest that mindfulness may serve as a protective psychological factor against excessive smartphone dependency. Students who are more mindful appear better able to regulate their emotions, manage anxiety related to smartphone disconnection, and maintain balanced digital usage patterns.

Given the increasing integration of digital technology in nursing education and clinical training, it is essential to promote healthy smartphone usage behaviors. Incorporating mindfulness-based awareness programs, stress management workshops, and digital well-being sessions within the nursing curriculum may help reduce nomophobic tendencies and enhance student psychological resilience.

Declaration by Authors
Ethical Approval: Approved
Acknowledgement: None
Source of Funding: None
Conflict of Interest: The authors declare no conflict of interest.

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