Section: Community Medicine

Original Research Article

PREVALENCE AND PATTERNS OF NOMOPHOBIA AMONG UNDERGRADUATE MEDICAL STUDENTS: A CROSS-SECTIONAL STUDY

Tagaram Ramchandra[1], Sheldon Thompson[2], Pragathi Kumar N[3], Biruduraju Sumahasini[4]

[1]*Associate professor, Department of Community Medicine, Government Medical College Nalgonda, Telangana, India.*
[2]*Associate professor, Department of Community Medicine, Osmania Medical College, Hyderabad, Telangana, India.*
[3]*Assistant professor, Department of Community Medicine, Government Medical College, Jagtial, Telangana, India.*
[4]*Final MBBS, Government Medical College, Jagtial, Telangana, India.*

Received *: 20/02/2026*
Received in revised form *: 07/04/2026*
Accepted *: 25/04/2026*

Corresponding Author:
Dr. Pragathi Kumar
Assistant professor, Department of Community Medicine, Government Medical College, Jagtial, Telangana, India.
Email: drrahul2k2@gmail.com

DOI: 10.70034/ijmedph.2026.2.273

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2026; 16 (2); 1638-1642

ABSTRACT

Background: Nomophobia, or the fear of being without access to a mobile phone, is an emerging behavioral concern among medical students due to increasing dependence on smartphones for academic and social purposes.
Objectives: The aim of the study was to assess the prevalence and severity of nomophobia among undergraduate medical students. The objectives were to evaluate smartphone usage patterns, determine their association with different levels of nomophobia, and identify significant predictors.
Materials and Methods: A multicentric descriptive cross-sectional study was conducted among **828 undergraduate medical students** from three medical colleges. Data were collected using a structured, pre-tested questionnaire incorporating the Nomophobia Questionnaire (NMP-Q). Nomophobia was categorized into absent, mild, moderate, and severe levels based on standard scoring. Data were analyzed using **IBM SPSS version 25**, and associations were assessed using the Chi-square test with a significance level of $p<0.05$.
Results: The prevalence of nomophobia was **98.3%**, with **58.7% moderate**, **32.9% mild**, and **6.8% severe** cases. Most students used smartphones for more than 4 hours daily, and a significant proportion reported frequent checking behavior and use before sleep. No significant association was found with gender or year of study, whereas significant associations were observed with smartphone usage duration, frequency of checking, sleep patterns, and behavioral dependence ($p<0.05$).
Conclusion: Nomophobia is highly prevalent among undergraduate medical students and is primarily influenced by behavioral factors rather than demographic characteristics. Targeted interventions focusing on digital well-being and responsible smartphone use are essential to mitigate its impact on mental health and academic performance.
Keywords: Nomophobia, Students, Medical, Smartphone, Behavior, Addictive.

INTRODUCTION

"No-MObile PHone PhoBIA" is the acronym for nomophobia, which is the fear of not being able to use or being reachable through a smartphone.[1] Nomophobia, a term coined in 2008 by the UK Post Office during a study conducted by YouGov, refers to the anxiety or discomfort experienced due to the absence of mobile phone access, although it is not formally recognized as a psychiatric disorder in diagnostic systems such as the DSM-5 and ICD-11.[2-4]

Among undergraduate medical students, nomophobia assumes particular importance due to the intensive academic demands, prolonged screen exposure for learning, and reliance on smartphones for accessing educational resources, communication, and clinical information. Studies have shown that excessive smartphone dependence in this group is associated with reduced attention span, poor sleep

quality, increased stress, and declining academic performance, thereby affecting both learning outcomes and mental well-being.[5-7] In a population already vulnerable to psychological distress, nomophobia may further aggravate anxiety-related symptoms and interfere with professional development and clinical competence.[6,7]

Given the increasing integration of smartphones into medical education and daily life, along with the potential adverse effects of excessive dependence, it becomes essential to systematically assess the prevalence and patterns of nomophobia among undergraduate medical students. Understanding its magnitude, associated behavioral patterns, and potential determinants will aid in identifying vulnerable groups and early risk factors within this high-stress population. Moreover, such insights are crucial for developing targeted interventions, promoting responsible smartphone use, and minimizing its negative impact on academic performance, sleep quality, and mental health.[5-7]

In addition, evaluating nomophobia in medical students has broader implications for future healthcare delivery, as impaired attention, increased anxiety, and reduced clinical focus may influence professional competence and patient care. Therefore, this study is undertaken to generate evidence that can guide institutional policies, awareness programs, and behavioral strategies aimed at fostering balanced technology use and enhancing overall well-being among medical students.

Aim and Objectives

The aim of the present study was to assess the prevalence and severity of nomophobia among undergraduate medical students using a standardized questionnaire. The objectives were to determine the distribution of nomophobia across demographic variables such as age, gender, and year of study; to evaluate smartphone usage patterns including duration, frequency, and related behavioral dependence; and to examine their association with different levels of nomophobia, as well as to identify significant predictors of moderate to severe nomophobia among the study participants.

MATERIALS AND METHODS

A multicentric descriptive cross-sectional study was conducted among 828 undergraduate medical students from three medical colleges—Osmania Medical College, GMC Nalgonda, and GMC Jagtial. Students from all academic years who were present during the study period and provided informed consent were included, while those unwilling to participate or with incomplete responses were excluded.

A convenience sampling method was adopted, wherein all eligible students available during the data collection period were approached and recruited until the required sample size was achieved.

The sample size was calculated using the formula 4pq/L2 Assuming a prevalence (p) of nomophobia of approximately 70%7, based on findings from previous studies among medical students, with q = 1 − p and an allowable error (d) of 5%, the minimum required sample size was estimated to be around 336. Considering the multicentric design and to improve precision, the final sample size was increased to 828 participants.

Data were collected using a structured, pre-tested, self-administered questionnaire comprising two sections. The first section included socio-demographic details and smartphone usage patterns such as duration of use, frequency of checking, and primary purpose of use. The second section consisted of the Nomophobia Questionnaire (NMP-Q), a validated 20-item scale measuring smartphone-related anxiety, with responses recorded on a Likert scale.

The total NMP-Q score ranged from 20 to 140 and was categorized as follows: a score of 20 was considered absent, 21–59 as mild, 60–99 as moderate, and 100–140 as severe nomophobia.

Prior to data collection, institutional ethical clearance was obtained from the respective colleges, and informed consent was taken from all participants. Confidentiality and anonymity were ensured throughout the study.

Data were entered into Microsoft Excel and analyzed using IBM SPSS software version 25. Descriptive statistics were expressed as frequencies and percentages with 95% confidence intervals. Associations between categorical variables and levels of nomophobia were assessed using the Chi-square test, with a p-value <0.05 considered statistically significant.

RESULTS

A total of 828 undergraduate medical students participated in the study. As shown in Table 1, the majority were females (71.5%), and most students belonged to second year (31.9%) and third year (31.4%). A large proportion were hostellers (90.1%). Regarding smartphone usage, about 72% of students used smartphones for more than 4 hours daily, and nearly half (47.6%) reported checking their phones every few minutes. The most common purpose of smartphone use was social media (64%), followed by entertainment (24.9%). A high proportion (91.3%) reported using phones before sleep, while 35.5% felt restless without their phones.

As depicted in Table 2, the prevalence of nomophobia was 98.3%, with 58.7% of students having moderate, 32.9% mild, and 6.8% severe nomophobia, while only 1.7% had no nomophobia.

Further, Table 3 shows the association between nomophobia and various factors. There was no statistically significant association with gender (p = 0.1), year of study (p = 0.2), residence (p = 0.3), and years of smartphone use (p = 0.7). However,

significant associations were observed with daily smartphone usage (p = 0.0001), frequency of checking phone (p = 0.0001), most common use (p = 0.03), sleep duration (p = 0.0001), phone use before sleep (p = 0.01), and feeling restless without phone (p = 0.0001).

Table 1: Demographic Variables

VARIBLES		NUMBER	PERCENTAGE
GENDER	FEMALE	592	71.50%
	MALE	236	28.50%
YEAR OF MBBS	FINAL YEAR	110	13.30%
	THIRD YEAR	260	31.40%
	SECOND YEAR	264	31.90%
	FIRST YEAR	194	23.40%
RESIDENCE	DAY SCHOLAR	82	9.90%
	HOSTELLER	746	90.10%
SMARTPHONE USAGE	<2 hrs	32	3.90%
	2–4 hrs	200	24.20%
	4–6 hrs	308	37.20%
	>6 hrs	288	34.80%
Years of smartphone use	<2 YEARS	184	22.20%
	2–5 YEARS	464	56.00%
	>5 years	180	21.70%
Frequency of checking phone	Every few minutes	394	47.60%
	Hourly	360	43.50%
	Occasionally	74	8.90%
Most common use	Academics	30	3.60%
	Gaming	24	2.90%
	Calls	38	4.60%
	Entertainment	206	24.90%
	Social media	530	64.00%
Sleep duration	<5 hrs	38	4.60%
	5–7 hrs	482	58.20%
	>7 hrs	308	37.20%
Phone use before sleep	NO	72	8.70%
	YES	756	91.30%
Do you feel restless without your phone?	No	534	64.50%
	YES	294	35.50%

Table 2: Prevalnce of Nomophobia

NOMOPHOBIA LEVEL	NUMBER	PERCENTAGE
ABSENT	14	1.7%
MILD	272	32.9%
MODERATE	486	58.7%
SEVERE	56	6.8%
Total	828	100.0%

Table 3: Nomophobia Vs Demographic & Other Factors

		NOMOPHOBIA				
		ABSENT TO MILD		MODERATE TO SEVERE		P VALUE
		Count	percentage	Count	percentage	
GENDER	FEMALE	196	63.0%	396	69.2%	0.1
	MALE	90	26.3%	146	23.3%	
YEAR OF MBBS	FIRST YEAR	58	15.9%	136	21.6%	
	SECOND YEAR	94	27.6%	170	27.6%	
	THIRD YEAR	100	29.6%	160	25.8%	
	FINAL YEAR	34	8.5%	76	11.3%	0.2
RESIDENCE	Day scholar	32	7.9%	50	7.0%	0.3
	HOSTELLER	254	84.8%	492	88.1%	
SMARTPHONE USAGE	<2 hrs	22	5.0%	10	1.0%	
	2–4 hrs	84	24.3%	116	18.1%	0.0001*
	4–6 hrs	102	30.3%	206	34.0%	
	>6 hrs	78	22.4%	210	34.7%	
Years of smartphone use	<2 YEARS	68	19.1%	116	18.1%	
	2–5 YEARS	158	49.5%	306	52.3%	0.7
	>5 years	60	16.6%	120	18.8%	
Frequency of checking phone	Every few minutes	106	31.6%	288	48.9%	
	Hourly	150	46.7%	210	34.7%	0.0001*
	Occasionally	30	7.3%	44	6.0%	
Most common use	Academics	16	3.4%	14	1.5%	
	Calls	18	3.9%	20	2.3%	
	Entertainment	76	21.7%	130	20.5%	0.03*
	Gaming	6	0.9%	18	2.1%	

	Social media	170	53.7%	360	62.4%	
Sleep duration	<5 hrs	12	2.3%	26	3.2%	0.0001*
	5–7 hrs	146	45.3%	336	57.9%	
	>7 hrs	128	39.1%	180	29.3%	
Phone use before sleep	NO	34	8.5%	38	5.1%	0.01*
	YES	252	84.0%	504	90.6%	
Do you feel restless without your phone?	No	234	77.0%	300	51.1%	0.0001*
	Yes	52	14.0%	242	40.5%	
*. The Chi-square statistic is significant at the .05 level.						

DISCUSSION

The present multicentric study demonstrated a very high prevalence of nomophobia (98.3%), with the majority of students exhibiting moderate (58.7%) followed by mild (32.9%) and severe (6.8%) levels. These findings are consistent with the study by Bartwal et al,[8] (2019), where all participants exhibited some degree of nomophobia, with 67.2% moderate and 17.3% severe levels, indicating that nomophobia is highly prevalent among medical students . Similarly, a recent systematic review and meta-analysis reported pooled prevalence of moderate (≈59%) and severe (≈14%) nomophobia among Indian medical students, further supporting the widespread burden observed in the present study.[9]

In contrast, earlier Indian studies such as Sharma et al,[7] (2015) reported a comparatively lower prevalence (73% nomophobia), suggesting a rising trend over time, likely due to increased smartphone penetration and digital dependency. The findings also align with Pavithra et al,[6] (2015), who highlighted increasing mobile phone dependence among medical students, although with lower prevalence rates, indicating that nomophobia has intensified in recent years.

The present study did not find a significant association between gender and nomophobia, which is consistent with findings from Bartwal et al.8, where gender differences were also not statistically significant. This suggests that nomophobia is more related to behavioral patterns rather than demographic characteristics. Similarly, variables such as year of study and residence were not significantly associated, indicating that academic level or living conditions may not play a major role in determining nomophobia levels.

However, significant associations were observed with smartphone usage duration, frequency of checking, sleep patterns, and behavioral dependence, which are key determinants of nomophobia. These findings are strongly supported by previous studies. Bartwal et al,[8] reported that increased duration of smartphone use and frequent checking behavior were significantly associated with higher levels of nomophobia. Likewise, Mohani et al,[10] (2024) highlighted that excessive smartphone use leads to anxiety, irritability, and dependency-related behaviors among students.

The high proportion of students using smartphones for social media (64%) and frequently checking their phones reflects behavioral addiction patterns. Similar trends were reported in earlier studies, where students primarily used smartphones for social interaction rather than academic purposes, contributing to increased dependence and anxiety when disconnected. Additionally, the finding that a large proportion of students used phones before sleep and experienced restlessness without phones indicates a strong psychological reliance, which has been associated with poor sleep quality and increased stress levels in previous research.

The findings of this study highlight that behavioral factors, rather than demographic variables, are the primary drivers of nomophobia. This has important implications, as it suggests that interventions should focus on modifying smartphone usage patterns, promoting digital well-being, and increasing awareness rather than targeting specific demographic groups.

Overall, the present study reinforces the growing concern that nomophobia is an emerging behavioral addiction among medical students, with potential adverse effects on mental health, academic performance, and future professional competence. There is a need for structured interventions, awareness programs, and behavioral strategies to promote responsible smartphone use and reduce dependency among this vulnerable population.

CONCLUSION

The present multicentric study demonstrates that nomophobia is highly prevalent (98.3%) among undergraduate medical students, with the majority experiencing moderate to severe levels. The findings indicate that behavioral factors such as prolonged smartphone usage, frequent checking habits, sleep disturbances, and psychological dependence are significantly associated with higher levels of nomophobia, whereas demographic variables such as gender and year of study showed no significant association.

These results highlight that nomophobia is an emerging behavioral concern in medical students, with potential implications on mental well-being, sleep quality, and academic performance. There is a need for targeted interventions, including awareness programs, promotion of digital well-being, and behavioral modification strategies to encourage responsible smartphone use. Addressing these factors is essential to ensure better psychological health and professional development among future healthcare professionals.

Acknowledgements: Nil

Conflict of interest: None
Source of funding: Nil

REFERENCES

1. King AL, Valenca AM, Silva AC, Baczynski T, Carvalho MR, Nardi AE. Nomophobia: Dependency on virtual environments or social phobia?. Computers in human behavior. 2013 Jan 1;29(1):140-4.
2. UK Post Office. Nomophobia: No Mobile Phone Phobia. London: UK Post Office; 2008.
3. King ALS, Valença AM, Silva AC, Baczynski T, Carvalho MR, Nardi AE. Nomophobia: dependency on virtual environments or social phobia? Comput Human Behav. 2013;29(1):140–4.
4. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders (DSM-5). 5th ed. Washington, DC: APA; 2013.
5. Dixit S, Shukla H, Bhagwat A, Bindal A, Goyal A, Zaidi AK, et al. A study to evaluate mobile phone dependence among students of a medical college and associated hospital of central India. Indian J Community Med. 2010;35(2):339–41.
6. Pavithra MB, Madhukumar S, Murthy MTS. A study on nomophobia—mobile phone dependence, among students of a medical college in Bangalore. Natl J Community Med. 2015;6(3):340–4.
7. Sharma N, Sharma P, Sharma N, Wavare RR. Rising concern of nomophobia amongst Indian medical students. Int J Res Med Sci. 2015;3(3):705–7.
8. Bartwal J, Nath B. Evaluation of nomophobia among medical students using smartphone in north India. Med J Armed Forces India [Internet]. 2020;76(4):451–5. Available from: http://dx.doi.org/10.1016/j.mjafi.2019.03.001
9. Mudgal SK, Gupta P, Gaur R, Varshney S, Patidar V. Nomophobia: Prevalence and severity among Indian medical students – A systematic review and meta-analysis. Indian J Psychiatry 2025;67:459-68.
10. Mohani MR, Phansopkar P, Seth NH, Fokmare PS Jr. The prevalence of nomophobia in medical undergraduate students of central India. Cureus [Internet]. 2024;16(3):e57056. Available from: http://dx.doi.org/10.7759/cureus.57056.