

Prevalence of Nomophobia among Nursing students: A Cross-sectional Study

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Abstract:

Nomophobia, defined as the fear or anxiety of being without a mobile phone, is an emerging behavioural condition among young adults, particularly students. Nursing students are highly dependent on smartphones for academic and clinical communication, making them vulnerable to nomophobia. This study was conducted to assess the prevalence of nomophobia among nursing students and its association with selected sociodemographic variables. A quantitative descriptive cross-sectional design was adopted among 100 nursing students selected using purposive sampling. Data were collected using a structured sociodemographic tool and the standardized 20-item Nomophobia Questionnaire (NMP-Q). The scores were categorized into mild, moderate, and severe nomophobia. Data were analyzed using descriptive statistics and ANOVA, and $p < 0.05$ was considered statistically significant. The findings revealed that 49% of participants were aged 16–18 years and 71% were female. The mean nomophobia score was 74.01 ± 18.3 , indicating a moderate level of nomophobia. The majority of students (78%) had moderate nomophobia, followed by mild (17%) and severe (5%). Overall, 95% of participants exhibited some level of nomophobia. A statistically significant association was found between nomophobia scores and family monthly income ($p = 0.017$) and source of previous knowledge ($p = 0.037$), while other demographic variables were not significant. This study highlights a high prevalence of moderate nomophobia among nursing students, consistent with global evidence of increasing smartphone dependency in young adults.

Keywords: Nomophobia; Nursing students; Smartphone addiction; Digital well-being

How to cite this article: Govindasamy M, Durairaj JS, Lakshmi SS, Arockiarajan D, Umasekar U. Prevalence of Nomophobia among Nursing students: A Cross-sectional Study. *Int J Drug Deliv Technol.* 2026;16(71s): 1577-1584. DOI: 10.25258/ijddt.16.71s.184

Introduction:

Nomophobia, short for “no-mobile-phone phobia,” refers to the fear or anxiety of being without a mobile phone, losing access to it, or being unable to use it. The term was first coined in 2008 in a study commissioned by the United Kingdom Post Office^[1]. It has emerged as a modern behavioural condition resulting from increasing dependence on mobile information and communication technologies. Nomophobia is widely understood as a form of behavioural addiction to smartphones, characterized by panic, anxiety, and discomfort when individuals are separated from their devices or unable to access mobile networks^[2,3].

With smartphones becoming an integral part of daily life for communication, education, entertainment, and information access, distress associated with their absence has become increasingly common^[4]. Survey findings indicate that 94% of users are concerned

about losing their phone, 73% experience panic, and 14% report desperation in such situations^[5]. Prolonged dependency has also been linked to psychological consequences such as low self-esteem, loneliness, anxiety, depression, anger, aggression, and sleep disturbances^[6]. These effects are more pronounced among young adults and students, where excessive mobile use may interfere with concentration and productivity.

For nursing students, who require sustained attention, clinical judgment, and interpersonal engagement, excessive smartphone use can negatively affect academic performance and professional preparedness^[7]. Understanding the extent of nomophobia in this population is therefore essential. Gender-related differences and psychological factors such as social interaction anxiety have also been reported to influence nomophobia dimensions differently across populations^[8,9].

Given the increasing prevalence and psychological implications of nomophobia, assessing its magnitude among nursing students is both relevant and necessary. This study aims to determine the prevalence of nomophobia and its association with selected sociodemographic variables among nursing students.

Methods:

A quantitative descriptive cross-sectional research design was adopted to assess the prevalence of nomophobia among nursing students. The study was conducted among Bachelor of Science (B.Sc) Nursing students, and a total sample of 100 participants was selected using a non-probability purposive sampling technique.

The study population consisted of nursing students enrolled in a selected nursing institution. The accessible population included those who met the inclusion criteria during the period of data collection. Participants were included if they were willing to participate, available at the time of data collection, able to read Tamil or English, and of either gender. Students were excluded if they were unavailable during data collection, unwilling to participate, had previously participated in another similar study, or had co-morbid conditions that could influence the study findings.

Data were collected using a structured questionnaire consisting of two sections. Section A included sociodemographic variables such as age, gender, religion, parental education, parental occupation, family income, residential status, type of family, and source of previous knowledge regarding nomophobia. Section B consisted of the standardized 20-item Nomophobia Questionnaire (NMP-Q)^[10], which was used to assess the level of nomophobia among participants.

The NMP-Q scores were interpreted based on a standardized classification system. Scores ranging from 20–60 indicated mild nomophobia, 60–100 indicated moderate nomophobia, and 101–140 indicated severe nomophobia. The total score represented the level of nomophobia experienced by each participant.

Data analysis was performed using descriptive and inferential statistics. Frequency and percentage distribution were used to describe sociodemographic variables and levels of nomophobia. Mean and standard deviation were used to summarize nomophobia scores. Association between nomophobia scores and selected sociodemographic variables was tested using ANOVA. A p-value of less than 0.05 was considered statistically significant.

Results:

The analysis of sociodemographic characteristics (Table 1) revealed that among the 100 nursing students, 49% were aged between 16–18 years, 48% were between 19–21 years, and 3% were above 21

years. The majority of participants were female (71%), while 29% were male. With regard to religion, 71% were Hindus, 20% were Christians, and 9% were Muslims.

Regarding parental education, 43% of fathers had completed high school education, 34% had primary education, 18% had higher secondary education, and 5% were graduates and above. Similarly, 41% of mothers had completed high school education, 28% had primary education, 20% had higher secondary education, and 11% were graduates and above. In terms of occupation, 43% of fathers were coolie workers, 28% were engaged in business, 24% were farmers, and 5% were government employees. Among mothers, 40% were coolie workers, 40% were self-employed, 18% were farmers, and 2% were government employees.

Family income distribution showed that 29% of participants had a monthly income of ₹5,000–10,000, 25% had ₹11,000–15,000, 26% had ₹16,000–20,000, and 20% had above ₹20,000. The majority of students belonged to rural areas (64%), while 36% were from urban areas. Most participants (82%) belonged to nuclear families, whereas 18% belonged to joint families. Television was the most common source of previous knowledge regarding nomophobia (71%), followed by newspapers (18%), books and journals (7%), and radio (4%).

Table 1. Frequency and Percentage distribution of characteristics of nursing students (N=100)

S. No	Demographic Variable	Frequency	Percentage
1.	Age		
	a. 16 to 18 years	49	49
	b. 19 to 21 years	48	48
	c. Above 21 years	3	3
2.	Gender		
	a. Male	29	29
	b. Female	71	71
3.	Religion		
	a. Hindu	71	71
	b. Christian	20	20
	c. Muslim	9	9
4.	Father's education		
	a. Primary	34	34
	b. High school	43	43
	c. Higher secondary	18	18
	d. Graduates and above	5	5

S. No	Demographic Variable	Frequency	Percentage
5.	Mother's Education		
	a. Primary	28	28
	b. High school	41	41
	c. Higher secondary	20	20
	d. Graduates and above	11	11
6.	Father's occupation		
	a. Coolie	43	43
	b. Former	24	24
	c. Government Employee	5	5
	d. Business	28	28
7.	Mother's occupation		
	a. Coolie	40	40
	b. Former	18	18
	c. Government employee	2	2
	d. Self-employee.	40	40
8.	Family income		
	a. 5000 to 10000/Month	29	29
	b. 11000 to 15000/Month	25	25
	c. 16000 to 20000/Month	26	26
	d. Above 20000/Month	20	20
9.	Residential status		
	a. Rural	64	64
	b. Urban	36	36
10.	Type of family		
	a. Joint family	18	18
	b. Nuclear family	82	82
11.	Source of previous knowledge		
	a. Television	71	71
	b. Radio	4	4
	c. Newspaper	18	18
	d. Books and journals	7	7

The analysis of nomophobia scores (Table 2) revealed that scores ranged from a minimum of 30 to a maximum of 130. The mean nomophobia score was 74.01 with a standard deviation of 18.3. This indicates that, on average, the participants exhibited

a moderate level of nomophobia according to the established classification system (Figure 1).

Table 2. Mean and Standard deviation of Nomophobia Score (N=50)

	Minimum	Maximum	Mean	Standard deviation
Nomophobia Score	30	130	73.84	18.3

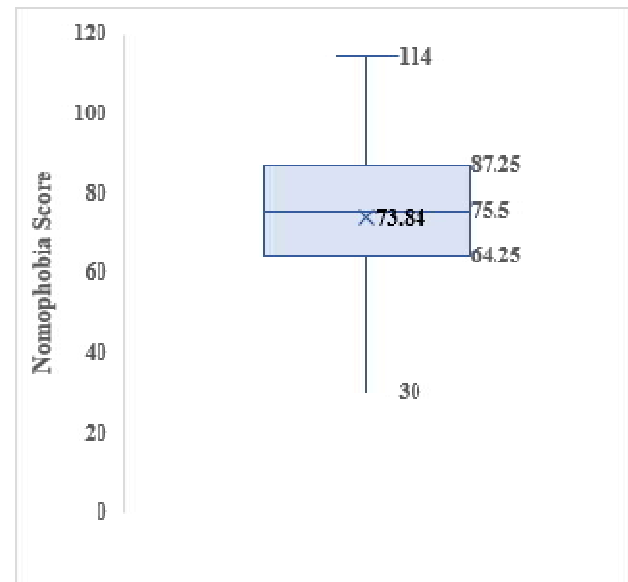


Figure 1. Distribution of Nursing Students' Nomophobia Scores

Regarding the distribution of nomophobia levels (Table 3), 78% of students had moderate nomophobia, 17% had mild nomophobia, and 5% had severe nomophobia. Overall, 95% of participants exhibited some degree of nomophobia (mild, moderate, or severe), indicating a high prevalence of the condition among nursing students.

Table 3. Frequency and Percentage distribution of the Level of Nomophobia among Nursing Students (N=100)

Level of Nomophobia	Frequency	Percentage
Mild	17	17
Moderately	78	78
Severe	5	5

The association between nomophobia scores and selected demographic variables was analyzed using ANOVA (Table 4). The results showed that age ($F = 1.80$, $p = 0.245$), gender ($F = 3.76$, $p = 0.057$), religion ($F = 0.859$, $p = 0.437$), father's education ($F = 0.845$, $p = 0.481$), mother's education ($F = 0.291$, $p = 0.832$), father's occupation ($F = 0.429$, $p = 0.735$), mother's occupation ($F = 1.26$, $p = 0.385$), residential status ($F = 3.24$, $p = 0.075$), and type of family ($F = 1.33$, $p = 0.260$) were not statistically significant. However, a statistically significant association was observed between nomophobia scores and family monthly income ($F = 3.71$, $p = 0.017$) as well as source of previous knowledge ($F = 3.64$, $p = 0.037$). Students belonging to the ₹16,000–20,000 income group had the highest mean nomophobia score (81.3 ± 15.1). Similarly, students whose source of knowledge was newspapers (76.1 ± 15.5) and television (74.6 ± 19.4) showed relatively higher scores.

Overall, the findings indicate that nomophobia is highly prevalent among nursing students, with most participants exhibiting moderate levels, and that certain socioeconomic and informational factors may influence its severity.

Table 4. Association between Nomophobia score and selected demographic variables among Nursing Students (N=100)

S. No	Demographic Variable	n	Mean	SD	F-Value	p-Value
1.	Age					
	a. 16 to 18 years	49	70.3	9.4	1.8	
	b. 19 to 21 years	48	77	7	0.245	
	c. Above 21 years	3	80	1.8		
2.	Gender					
	a. Male	29	78.8	4.8	3.76	0.057
	b. Female	71	71.8	9.3		
3.	Religion					
	a. Hindu	71	72.6	9.7	0.859	0.437
	b. Christian	20	76	4.2		

S. No	Demographic Variable	n	Mean	SD	F-Value	p-Value
4.	Father's education					
	c. Muslim	9	78.9	13.8		
	a. Primary	34	71.9	9.1		
	b. High school	43	73.7	7.9	0.845	
	c. Higher secondary	18	78.9	2.0	0.481	
	d. Graduate and above	5	70.6	5.6		
5.	Mother's Education					
	a. Primary	28	73.5	7.9		
	b. High school	41	73.1	1.9	0.291	
	c. Higher secondary	20	72.8	1.6	0.832	
	d. Graduate and above	11	79.4	2.0		
6.	Father's occupation					
	a. Coolie	43	73.5	8.3		
	b. Former	24	75.8	6.1	0.429	
	c. Government Employee	5	65	1.9	0.735	
	d. Business	28	74.2	2.0		
7.	Mother's occupation					
	a. Coolie	40	72.7	2.5	1.26	

S. No	Demographic Variable	n	Mean	SD	F-Value	p-Value
	b. Former	18	69.8	3.8	1.3	0.385
	c. Government employee	2	57.5	3.2	3.3	
	d. Self-employed	40	77.6	3.9	1.3	
8.	Family income					
	a. 5000 to 10000/Month	29	67	9.8	1.9	
	b. 11000 to 15000/Month	25	70.7	2.0	3.7	0.1
	c. 16000 to 20000/Month	26	81.3	5.1	0.0	17*
	d. Above 20000/Month	20	78	1.2		
9.	Residential status					
	a. Rural	64	71.5	9.3	3.2	0.4
	b. Urban	36	77.9	5.7	0.0	75
10.	Type of family					
	a. Joint family	18	69.4	7.8	1.3	0.3
	b. Nuclear family	82	74.8	8.4	0.2	6
11.	Source of previous knowledge					
	a. Television	71	74.6	9.4	1.9	
	b. Radio	4	64.5	5.1	3.6	0.4
	c. Newspaper	18	76.1	5.5	0.0	37*
	d. Books and journals	7	65.1	6.7		

Note: * -p<0.05

Discussion:

The present study assessed the prevalence of nomophobia among nursing students and examined its association with selected sociodemographic variables. The findings revealed a high prevalence of nomophobia, with the majority of participants exhibiting moderate levels (78%), followed by mild (17%) and severe (5%) levels. The overall mean nomophobia score was 74.01 ± 18.3 , indicating a moderate level of smartphone dependency among nursing students. These findings highlight nomophobia as a significant behavioural concern in the nursing student population.

The high prevalence of moderate nomophobia observed in this study is consistent with previous research conducted among university and nursing student populations, which has reported that smartphone dependency and fear of disconnection are increasingly common among young adults. Nursing students, in particular, are exposed to academic, social, and clinical demands that require constant communication and access to digital platforms^[11,12]. This may explain their heightened reliance on mobile devices. The finding that 95% of participants had some level of nomophobia (mild to severe combined) suggests that smartphone dependency is nearly universal within this population, aligning with global trends of increasing digital dependence among students.

The moderate mean nomophobia score observed in this study (74.01 ± 18.3) further supports the presence of significant but not extreme behavioural dependence. This indicates that while most students are not in the severe category, they still experience discomfort or anxiety when separated from their mobile phones. Such moderate levels may represent a transitional stage, where behavioural patterns have developed but may still be modifiable through awareness and intervention^[11,13].

The sociodemographic profile of the participants revealed that most were female, aged between 16–21 years, from rural areas, and belonged to nuclear families. These findings are consistent with the typical demographic distribution in nursing education programs in India. Although gender did not show a statistically significant association with nomophobia scores in this study ($p = 0.057$), females had slightly higher mean scores compared to males. This is in line with several studies that suggest females may report higher levels of anxiety-related behaviours associated with smartphone use, although findings across studies remain inconsistent^[14,15].

Age was also not significantly associated with nomophobia scores in this study ($p = 0.245$), although younger students (16–18 years) had relatively lower mean scores compared to older groups. This suggests that nomophobia may not be strongly influenced by

age within a narrow academic age range, especially among nursing students who share similar academic environments and digital exposure patterns^[16].

A notable finding of the present study is the statistically significant association between family monthly income and nomophobia scores ($p = 0.017$). Students belonging to the ₹16,000–20,000 income group had the highest mean nomophobia scores. This finding suggests that socioeconomic factors may influence smartphone usage patterns and dependency levels. Students from certain income groups may have greater access to smartphones and internet connectivity, thereby increasing their exposure and reliance on mobile technology for academic and personal communication. This aligns with existing literature indicating that increased accessibility to digital devices can contribute to higher behavioural dependency^[17,18].

Another significant association was observed between source of previous knowledge and nomophobia scores ($p = 0.037$). Students who reported television and newspapers as their primary sources of information demonstrated relatively higher mean nomophobia scores compared to those who used other sources. This finding may reflect the role of media exposure in shaping perceptions and behaviours related to technology use. Continuous exposure to digital media and communication platforms may reinforce the habitual use of smartphones, thereby contributing to increased dependency and anxiety when disconnected^[19,20].

In contrast, no significant association was found between nomophobia scores and variables such as age, gender, religion, parental education, parental occupation, residential status, or type of family. These findings suggest that nomophobia is a widespread behavioural phenomenon that cuts across most demographic categories within the nursing student population. The lack of strong demographic influence indicates that smartphone dependency may be more related to environmental and behavioural factors rather than inherent personal characteristics. The high prevalence of moderate nomophobia observed in this study has important implications for nursing education and student well-being. Nursing students require sustained attention, emotional stability, and effective communication skills for academic and clinical success. Excessive reliance on mobile phones may interfere with concentration, sleep patterns, interpersonal relationships, and academic productivity. Additionally, frequent smartphone use may contribute to distraction during clinical training, potentially affecting skill development and patient care preparation^[21,22].

The findings also highlight the importance of early identification and preventive strategies. Since most students fall under the mild to moderate categories, timely interventions such as awareness programs, digital well-being education, and behavioural counselling may be effective in reducing progression

to severe nomophobia. Educational institutions can play a critical role by promoting healthy digital habits and encouraging balanced use of technology for academic purposes^[21,23].

Furthermore, the findings support the need for integrating digital wellness education into nursing curricula. Training programs focusing on time management, stress reduction, and controlled smartphone use may help students develop healthier coping mechanisms. Given the increasing integration of technology in education and healthcare, complete avoidance of digital devices is not practical; therefore, promoting responsible use is essential.

The present study findings are also consistent with the broader literature that identifies nomophobia as a growing global concern among students. As smartphone ownership continues to increase, behavioural dependence is becoming more prevalent, particularly among younger populations. The psychological impact of being disconnected from mobile devices, including anxiety and discomfort, reflects deeper behavioural attachment that may require structured interventions.

Overall, this study contributes valuable evidence regarding the extent of nomophobia among nursing students and highlights key sociodemographic factors associated with it. The findings emphasize the need for targeted interventions to address smartphone dependency and promote mental well-being in academic settings.

Conclusion:

The present study concludes that nomophobia is highly prevalent among nursing students, with the majority experiencing a moderate level of nomophobia and a small proportion exhibiting mild and severe levels. The overall mean score indicated a moderate degree of smartphone dependency, highlighting that nomophobia is a common behavioural concern in this population. The study also found a statistically significant association between nomophobia and selected variables such as family monthly income and source of previous knowledge, while most other sociodemographic variables were not significantly associated. These findings suggest that nomophobia is influenced more by socioeconomic and informational factors rather than demographic characteristics. Given its high prevalence, there is a clear need for early identification, awareness programs, and structured digital well-being interventions to promote responsible smartphone use among nursing students and to support their academic performance, psychological well-being, and professional development.

Strength:

This study has several strengths. First, it addresses a relevant and emerging behavioural health issue—nomophobia—among nursing students, a population

highly dependent on digital technology for academic and clinical learning. Second, the study utilized a standardized and validated tool, the Nomophobia Questionnaire (NMP-Q), which enhances the reliability and comparability of findings. Third, the study included a complete analysis of sociodemographic variables along with inferential statistics, allowing identification of factors associated with nomophobia. Finally, the sample included students from varied backgrounds, which improves the representation of different demographic characteristics within the nursing student population.

Limitations:

The study has certain limitations. The sample size was limited to 100 nursing students from a single institution, which restricts the generalizability of the findings to other settings. The use of a non-probability purposive sampling technique may introduce selection bias. The cross-sectional design limits the ability to establish causal relationships between nomophobia and associated variables. Additionally, the study relied on self-reported data, which may be subject to response bias and social desirability bias.

Recommendations:

Digital well-being education and counselling services should be strengthened to support students with higher levels of dependency. Workshops on time management and controlled smartphone use may help reduce excessive usage. Institutions should also encourage responsible mobile phone use in academic and clinical settings. Further multicentric and interventional studies are recommended to explore effective strategies for reducing nomophobia

References:

- Banerjee I, Robinson J, Kashyap A, Sathian B. Nomophobia: An emerging problem. *Nepal J Epidemiol.* 2023;13(3):1285. doi:10.3126/NJE.V13I3.58932 PubMed PMID: 38293635.
- Kaviani F, Robards B, Young KL, Koppel S. Nomophobia: Is the Fear of Being without a Smartphone Associated with Problematic Use? *Int J Environ Res Public Health.* 2020;17(17):6024. doi:10.3390/IJERPH17176024 PubMed PMID: 32824979.
- Priya A, Sinha R, Sethia S, Rahman MHU, Melwani V, Priya A, et al. Nomophobia in India: A systematic review and meta-analysis. *Indian J Med Res.* 2026;163(5):631–9. doi:10.25259/IJMR_2163_2025
- Nawaz S, Bhowmik J, Linden T, Mitchell M. Exploring the impact of smartphone dependency on real-life recreational activities: A theory of planned behaviour study. *Entertain Comput.* 2025;52:100906. doi:10.1016/J.ENTCOM.2024.100906
- Bellini D, Mascia ML, Conti R, Penna MP. Smartphone overuse and distraction: which relationship with general well-being across different generations? *BMC Public Health.* 2025;25(1):427. doi:10.1186/S12889-024-21269-Z PubMed PMID: 39901083.
- Rodríguez-García AM, Belmonte JL, Moreno-Guerrero AJ. Nomophobia: An Individual's Growing Fear of Being without a Smartphone—A Systematic Literature Review. *Int J Environ Res Public Health.* 2020;17(2):580. doi:10.3390/IJERPH17020580 PubMed PMID: 31963208.
- CELIKALP U, BILGIC S, TEMEL M, VAROL G. The Smartphone Addiction Levels and the Association With Communication Skills in Nursing and Medical School Students. *Journal of Nursing Research.* 2020;28(3):e93. doi:10.1097/JNR.0000000000000370
- Wang Y, Luo F, Liu Y, Xin T. How do the core symptoms of nomophobia differ between males and females: a network analysis. *BMC Psychology* 2026 14:1. 2026;14(1):697-. doi:10.1186/S40359-026-04460-2
- Ferreira IS, Rando B, Esteves A, Castro M, Xavier I, Abreu AM. Nomophobia and Its Predictors: The Role of Psychological, Sociodemographic, and Internet Use Factors. *Int J Environ Res Public Health.* 2025;22(10):1495. doi:10.3390/IJERPH22101495 PubMed PMID: 41154899.
- Yildirim C, Correia AP. Exploring the dimensions of nomophobia: Development and validation of a self-reported questionnaire. *Comput Human Behav.* 2015;49:130–7. doi:10.1016/J.CHB.2015.02.059
- Çobanoğlu A, Bahadır-Yılmaz E, Kiziltan B. The relationship between nursing students' digital and smartphone addiction levels and nomophobia: A descriptive, correlational study. *Perspect Psychiatr Care.* 2021;57(4):1727–34. doi:10.1111/PPC.12742 PubMed PMID: 33616201.

12. Zhou X, Feng B. Social anxiety and smartphone addiction among college students: the mediating role of loneliness. *Front Psychiatry*. 2025;16:1621900. doi:10.3389/FPSYT.2025.1621900 PubMed PMID: 40771643.
13. Mir R, Akhtar M. Effect of nomophobia on the anxiety levels of undergraduate students. *J Pak Med Assoc*. 2020;70(9):1492–7. doi:10.5455/JPMA.31286 PubMed PMID: 33040096.
14. Wang Y, Abdullah MNLY. A meta-analytic review of smartphone addiction prevalence in Chinese college students. *Current Psychology* 2026 45:5. 2026;45(5):548-. doi:10.1007/S12144-026-09160-Z
15. Kosola S, Mörö S, Holopainen E. Smartphone use and well-being of adolescent girls: a population-based study. *Arch Dis Child*. 2024;109(7):576. doi:10.1136/ARCHDISCHILD-2023-326521 PubMed PMID: 38772732.
16. Guillari A, Chirico A, Palazzo C, Martino M Di, Cristiano F, Suarato S, et al. Nomophobia in Nursing Students: Psychological, Academic, and Clinical Impacts—An Integrative Review. *Healthcare (Switzerland)*. 2026;14(7):830. doi:10.3390/HEALTHCARE14070830/S1
17. Fang W, Nie C. Inequalities in digital literacy: exploring the disparity in tangible outcomes of internet use among college students in China. *Front Commun (Lausanne)*. 2025;10:1601240. doi:10.3389/FCOMM.2025.1601240/TEXT
18. Han SJ, Nagduar S, Yu HJ. Digital Addiction and Related Factors among College Students. *Healthcare*. 2023;11(22):2943. doi:10.3390/HEALTHCARE11222943 PubMed PMID: 37998435.
19. Shanmugasundaram M, Tamilarasu A. The impact of digital technology, social media, and artificial intelligence on cognitive functions: a review. *Frontiers in Cognition*. 2023;2:1203077. doi:10.3389/FCOGN.2023.1203077/FULL
20. Nawaz S, Linden T, Mitchell M, Bhowmik J. Examining effectual, ineffectual and problematic smartphone use: A qualitative exploration of dependence and management behaviours. *Social Sciences & Humanities Open*. 2026;13:102569. doi:10.1016/J.SSAHO.2026.102569
21. Kalal N, Vel NS, Angmo S, Choyal S, Bishnoi S, Dhaka S, et al. Smartphone addiction and its impact on quality of sleep and academic performance among nursing students. Institutional based cross-sectional study in Western Rajasthan (India). *Invest Educ Enferm*. 2023;41(2):e11. doi:10.17533/udea.iee.v41n2e11. PubMed PMID: 38589329.
22. Rovithis M, Koukouli S, Fouskis A, Giannakaki I, Giakoumaki K, Linardakis M, et al. Empathy and Mobile Phone Dependence in Nursing: A Cross-Sectional Study in a Public Hospital of the Island of Crete, Greece. *Healthcare*. 2021;9(8):975. doi:10.3390/HEALTHCARE9080975 PubMed PMID: 34442112.
23. Alodhialah AM, Almutairi AA, Almutairi MT. Assessment of Knowledge and Outcomes of Nomophobia Among Students at a Selected Degree College in Riyadh. *Risk Manag Healthc Policy*. 2025;18:667. doi:10.2147/RMHP.S508434 PubMed PMID: 40035054.