Section: Community Medicine

Original Research Article

# PREVALENCE, CORRELATES, AND PERCEPTIONS OF NOMOPHOBIA AMONG MEDICAL STUDENTS: A MIXED-METHOD STUDY IN CHAKDAH, WEST BENGAL

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***Received*** *: 04/10/2025*
***Received in revised form*** *: 21/11/2025*
***Accepted*** *: 11/12/2025*

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**DOI:** 10.70034/ijmedph.2025.4.490

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

**Int J Med Pub Health**
2025; 15 (4); 2737-2743

ABSTRACT

**Background:** Nomophobia, the fear of being without a mobile phone, is a growing concern, particularly among student populations. Medical students, facing high academic pressure and social demands, may be especially vulnerable. The primary aim was to determine the prevalence and severity of nomophobia among medical students. The objectives were to assess its correlation with daily smartphone and social media usage, and to analyze its relationship with demographic factors such as gender, age, and year of study and evaluate perceptions in relation to nomophobia.

**Materials and Methods:** A mixed-method cross-sectional study was conducted among 145 medical students at JMN Medical College, Chakdah. Participants completed a questionnaire on demographics, smartphone use, and the Nomophobia Questionnaire (NMP-Q). Quantitative data were analyzed using descriptive statistics and chi-square tests, while qualitative interviews were thematically analyzed to explore perceptions of smartphone use and nomophobia.

**Results:** Over 80% of the 145 MBBS students showed nomophobia, with most cases moderate (56.6%) or severe (26.9%). Younger students and hostel residents were significantly more affected, while gender and socioeconomic status had no impact. Social-media use strongly correlated with nomophobia, and qualitative data revealed anxiety, dependence, and poor self-regulation—including growing reliance on AI tools. The findings stress the need to foster healthier smartphone habits among medical students.

**Conclusion:** Among 145 MBBS students, 83.5% had nomophobia (56.6% moderate, 26.9% severe). Higher prevalence was seen in students <20 years and hostel residents, and those using smartphones mainly for social media. Anxiety, dependency, and difficulty in self-regulation were common, highlighting the need for promoting healthy smartphone use.

**Keywords:** Nomophobia, Medical Students, Smartphone Use, Social Media, NMP-Q, Prevalence.

## INTRODUCTION

Nomophobia—short for "no mobile phone phobia"—is increasingly recognized as a significant behavioral health issue worldwide, reflecting excessive fear or anxiety when individuals are separated from their mobile phones or unable to use them due to battery loss, network failure, or unavailability.[1] With the rapid expansion of smartphone use across all age groups, nomophobia has emerged as a modern digital dependency, particularly affecting young adults and students who rely heavily on mobile devices for communication, information seeking, and academic tasks.[2,3] Medical students represent a uniquely vulnerable group, given their high academic pressure, frequent use of smartphones for educational resources, and dependence on online platforms for learning and social interaction.[4] Recent research highlights that smartphone overuse can adversely affect sleep quality, cognition, concentration, and mental well-being, thereby influencing academic performance

and interpersonal relationships.[5,6] In medical students, such consequences are especially concerning, as they are expected to develop strong clinical reasoning, emotional resilience, and professional behaviour—domains that may be negatively affected by excessive mobile phone use.[7] Studies from India and other countries report a rising prevalence of nomophobia among health-care students, ranging between moderate and severe levels, with many students unaware of the long-term psychological and social effects of their dependence.[8] Understanding the correlates of nomophobia—such as gender, duration of phone use, internet dependency, sleep patterns, and academic stress—is essential for designing targeted interventions.[9] Alongside quantitative assessment, exploring students' perceptions and experiences provides deeper insights into behavioural patterns, emotional responses, and contextual factors driving mobile phone use. Mixed-methods research is particularly valuable for capturing both the measurable burden and the subjective dimensions of nomophobia within this high-risk population.[10] The primary aim was to determine the prevalence and severity of nomophobia among medical students. The objectives were to assess its correlation with daily smartphone and social media usage, and to analyze its relationship with demographic factors such as gender, age, and year of study.

## MATERIALS AND METHODS

**Study design:** A Mixed-methods study was conducted.

**Period of study:** 1 year.

**Place of Study:** JMN medical college and attached teaching hospital in Chakdah, Nadia district, West Bengal.

**Study Population:** Undergraduate MBBS students enrolled at the study site during the study period.

**Sample size:** The quantitative study's sample size was estimated using data from a previous study by Sethia et al. (2018),[8] which found that 61.5% of participants experienced moderate nomophobia. Considering an absolute precision of 5% and a 95% confidence interval, the calculated sample size was 145 students, determined using Open Epi (Version 3.01).

**Inclusion Criteria**

**Quantitative:** Undergraduate students who had been using a mobile phone for at least six months.

**Qualitative:** Students identified with severe nomophobia who consented to participate.

**Exclusion Criteria**

Students were excluded if they did not own a mobile phone or declined to provide informed consent.

**Data Collection Methods**

**Quantitative Component:** A cross-sectional study was carried out among undergraduate medical students. Participants were selected using convenience sampling. Data were gathered using a pretested, semi-structured, self-administered questionnaire, which recorded sociodemographic information, patterns of smartphone use, and nomophobia symptoms via the 20-item Nomophobia Questionnaire (NMP-Q). The NMP-Q uses a Likert scale and classifies nomophobia severity as mild, moderate, or severe based on total scores.

**Qualitative Component:** For the qualitative aspect, in-depth interviews (IDIs) were conducted with a purposive sample of six students who scored in the severe nomophobia range and agreed to participate. Interviews took place in a private, distraction-free environment and continued until no new information emerged (data saturation). Audio recordings were made with participant consent. Thematic analysis involved familiarization with the transcripts, development of initial codes, and identification of key themes, such as perceptions of smartphone use, factors promoting or limiting use, and behavioral manifestations of smartphone dependence. Integration of qualitative insights with quantitative results provided a richer understanding of nomophobic behaviors among students.

Ethical approval was secured from the institutional review board before data collection, and all participants provided written informed consent.

By implementing a mixed-methods approach, this study not only quantified nomophobia prevalence but also explored the lived experiences and in depth perceptions of students through qualitative inquiry.

**Study Variable**

- Gender
- Age
- Average Daily Smartphone Use
- Time Spent on Social Media (hours/day)
- Year of Study

**Statistical Analysis**

**Quantitative:** Data were initially entered into a Microsoft Excel spreadsheet and analyzed using SPSS (version 27.0; SPSS Inc., Chicago, IL, USA) and GraphPad Prism (version 5). Continuous variables were summarized as means ± standard deviations, while categorical variables were presented as counts and percentages. Comparisons between independent groups were performed using two-sample t-tests, and paired t-tests were applied for related observations. Associations between categorical variables were assessed using the Chi-square test or Fisher's exact test when expected cell counts were small. A p-value $\leq 0.05$ was considered statistically significant.

**Qualitative:** In-depth interviews were digitally recorded, transcribed, and translated into English. The transcripts were analyzed using ATLAS. ti 8.0 (ATLAS. ti Scientific Software Development GmbH, Berlin, and Germany). Content analysis was performed, beginning with open coding to identify recurring concepts. Axial coding was then applied to group similar codes into subthemes, followed by constant comparison across subthemes to derive major themes. These themes provided insights into

factors influencing nomophobia and students' perceptions of smartphone use.

## RESULTS

**Table 1: Socio Demographic characteristics of the study participants.**

| Variable | Category | n(%) |
|---|---|---|
| Gender | Male | 71 (48.97%) |
| | Female | 74 (51.03%) |
| Age (Years) | < 20 | 68 (46.90%) |
| | ≥ 20 | 77 (53.10%) |
| Place of Study / Stay | Hostel | 87 (60.00%) |
| | Home | 58 (40.00%) |
| Socioeconomic Status | Class I | 15 (10.34%) |
| | Class II | 25 (17.24%) |
| | Class III | 35 (24.14%) |
| | Class IV | 45 (31.03%) |
| | Class V | 25 (17.24%) |

**Table 2: Smartphone Usage Patterns Among Participants**

| Variable | Category | n(%) |
|---|---|---|
| Daily Smartphone Use (Hours) | < 3 Hours | 30 (20.69%) |
| | 3–6 Hours | 67 (46.21%) |
| | > 6 Hours | 48 (33.10%) |
| Purpose of Smartphone Use | Social Media | 109 (75.17%) |
| | Others | 36 (24.83%) |
| Checks Smartphone First After Waking | Yes | 93 (64.14%) |
| | No | 52 (35.86%) |
| Frequency of Checking Smartphone Without Reason | Never | 14 (9.66%) |
| | Sometimes | 90 (62.07%) |
| | Always | 41 (28.28%) |

**Table 3: Association between Participant Characteristics and Nomophobia**

| Variables | Categories | Nomophobia Present (N, %) | Nomophobia Absent (N, %) | Chi-Square | P-Value |
|---|---|---|---|---|---|
| Gender | Male | 63 (88.7%) | 8 (11.3%) | 1.643 | 0.199 |
| | Female | 55 (74.3%) | 19 (25.7%) | | |
| Age (Years) | < 20 | 64 (94.1%) | 4 (5.9%) | 7.89 | 0.004 |
| | ≥ 20 | 54 (70.1%) | 23 (29.9%) | | |
| | Mean ± SD | 20.1 ± 1.8 | | | |
| Place of Study / Stay | Hostel | 81 (96.4%) | 3 (3.6%) | 23.864 | <0.001 |
| | Home | 37 (63.8%) | 21 (36.2%) | | |
| Socioeconomic Status | Class I | 10 (66.7%) | 5 (33.3%) | 0.702 | 0.402 |
| | Class II | 15 (60.0%) | 10 (40.0%) | | |
| | Class III | 35 (87.5%) | 5 (12.5%) | | |
| | Class IV | 40 (88.9%) | 5 (11.1%) | | |
| | Class V | 23 (92.0%) | 2 (8.0%) | | |
| Daily Smartphone Use (Hours) | < 3 Hours | 25 (83.3%) | 5 (16.7%) | 2.017 | 0.364 |
| | 3–6 Hours | 55 (82.1%) | 12 (17.9%) | | |
| | > 6 Hours | 38 (79.2%) | 10 (20.8%) | | |
| Purpose of Smartphone Use | Social Media | 100 (91.7%) | 9 (8.3%) | 10.98 | <0.001 |
| | Others | 18 (50.0%) | 18 (50.0%) | | |
| Checks Smartphone First After Waking | Yes | 75 (80.6%) | 18 (19.4%) | 2.42 | 0.119 |
| | No | 43 (82.7%) | 9 (17.3%) | | |
| Frequency of Checking Smartphone Without Reason | Never | 13 (92.9%) | 1 (7.1%) | 2.017 | 0.364 |
| | Sometimes | 83 (92.2%) | 7 (7.8%) | | |
| | Always | 22 (53.7%) | 19 (46.3%) | | |

**Table 4: Prevalence of Nomophobia (NMP-Q Categories)**

| NMP-Q Category | Score Range | n (%) |
|---|---|---|
| No Nomophobia | < 20 | 5 (3.4%) |
| Mild Nomophobia | 20–59 | 19 (13.1%) |
| Moderate Nomophobia | 60–99 | 82 (56.6%) |
| Severe Nomophobia | 100–140 | 39 (26.9%) |

**Table 5: Thematic analysis of in-depth interviews on perception of smartphone usage among MBBS students.**

| Theme | Sub-theme | Code (Verbatim Quotes) |
|---|---|---|
| Perceived Necessity | Academic Utility | - "All my notes, PDFs, and class updates are in WhatsApp or Google Drive." – 2nd year MBBS student. |
| | | - "We use apps for anatomy diagrams to study." – 1st year MBBS student. |
| | | - "Most of my learning happens through YouTube and e-books." – 3rd year MBBS student. |
| | Daily Life Integration | - "It's not just a phone anymore. It's my alarm, calendar, and even my planner." – 3rd MBBS student. |
| | | - "Without my phone, I forget half of my tasks." – 3rd year MBBS student. |
| | | - "From waking up to going to sleep, it's always there." – 2nd year MBBS student |
| | Study Support | - "Sometimes I feel it's more of a study device than a phone." – 1st year MBBS student |
| | | - "Question banks are very helpful." – 2nd year MBBS student |
| | | - "Phone-based apps make revision easier during breaks." – 2nd year MBBS student |
| Coordination Tool | Academic Coordination | - "Even group studies and assignments are all managed through the phone." – 2nd year MBBS student |
| | | - "We plan our postings and rotations through WhatsApp groups." – 3rd year MBBS student |
| | | - "No one reads notice boards now; everything is on the phone." – 1st year MBBS student |
| Emotional Attachment | Anxiety When Separated | - "I feel very uneasy when my phone isn't with me. It's like something is missing." – 2nd year MBBS student |
| | | - "If my phone is not nearby, I feel disconnected." – 3rd year MBBS student |
| | | - "Even during classes, I keep checking if it's in my pocket." – 1st year MBBS student |
| | Constant Urge to Check | - "Even if I leave my phone for 5 minutes, I keep thinking – did I get any message?" – 1st year MBBS student |
| | | - "I refresh WhatsApp unnecessarily even if no one texts." – 3rd year MBBS student |
| | | - "I check it every few minutes without reason." – 2nd year MBBS student |
| | Dependency | - "When my battery dies, I get very anxious. It feels like I've lost something important." – 3rd year MBBS student |
| | | - "Even during hospital rounds, I feel uneasy if my phone isn't with me." –2nd year MBBS student |
| | | - "I use it while eating, studying, even while brushing." – 1st year MBBS student |
| | Fear of Missing Out (FOMO) | - "I panic if I can't find my phone, even though I just used it a minute ago." – 2nd year MBBS student |
| | | - "If I'm offline for a while, I feel I've missed something big." – 3rd year MBBS student |
| | | - "All my friends post stories. If I miss them, I feel left out." – 1st year MBBS student |
| Awareness of Overuse | Unintentional Time Use | - "I plan to use it for 10 minutes, but then an hour passes watching reels." – 3rd year MBBS student |
| | | - "Time just flies when I start scrolling." – 2nd year MBBS student |
| | | - "Even toilet breaks turn into screen time now." – 3rd year MBBS student |
| | Distraction from Studies | - "I feel guilty sometimes. I know I should study but end up on Instagram instead." – 2nd year MBBS student |
| | | - "My phone always distracts me from my timetable." – 2nd year MBBS student |
| | | - "I study for 10 minutes and check my phone for 30." – 1st year MBBS student |
| | Mindless Scrolling | - "I start checking one notification and then get stuck scrolling." – 1st year MBBS student |
| | | - "It's like muscle memory—Instagram opens on its own." – 3rd year MBBS student |
| | | - "I scroll till I get bored and then scroll more." – 2nd year MBBS student |
| | Self-blame | - "Even though I know it's wasting time, I just can't stop using it." – 2nd year MBBS student |
| | | - "I hate how it consumes me, but I still use it." – 2nd year MBBS student |
| | | - "I uninstall apps, but they come back soon." – 3rd year MBBS student |
| Control vs Dependence | Failed Attempts to Limit Usage | - "I've deleted social media before exams, but I end up reinstalling it." – 2nd year MBBS student |
| | | - "I've tried locking apps, but always unlock them." – 3rd year MBBS student |
| | | - "I use screen limit apps, but ignore the warnings." – 2nd year MBBS student |
| | Perceived Lack of Control | - "I feel like it controls me, not the other way around." –3rd year MBBS student |
| | | - "Even if I want to stop, I just can't." – 2nd year MBBS student |
| | | - "Sometimes I feel I'm addicted." – 1st year MBBS student |
| | Short-lived Self-regulation | - "Sometimes I switch off my phone to focus, but I can't go more than an hour." – 3rd year MBBS student |
| | | - "I try airplane mode, but end up turning it off." – 2nd year MBBS student |
| | | - "I start strong, but give up quickly." – 1st year MBBS student |
| | Habitual Checking | - "I try to control it, but after a few hours I'm back to checking notifications." – 1st year MBBS student |
| | | - "I don't even know why I check sometimes." – 2nd year MBBS student |
| | | - "I check it even when there's no notification." –3rd year MBBS student |
| Emerging Technology-Related Nomophobia | ChatGPT Dependence & Anxiety | - "I ask ChatGPT everything now. Without it, I feel lost." – 2nd year MBBS student |
| | | - "Even for simple answers, I rely on AI tools like ChatGPT." – 3rd year MBBS student |
| | | - "It's my go-to for all doubts. I can't study without it now." – 2nd year MBBS student |

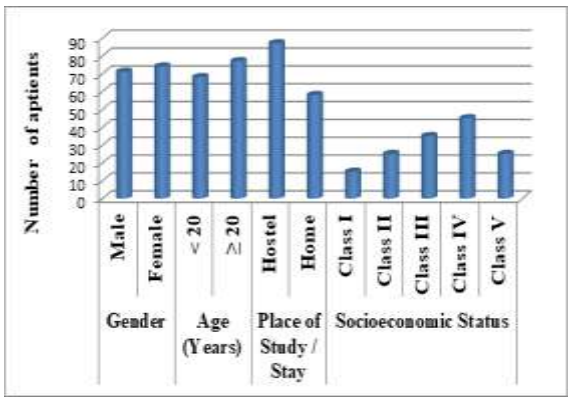


**Figure 1: Sociodemographic Characteristics of Participants (N = 145)**

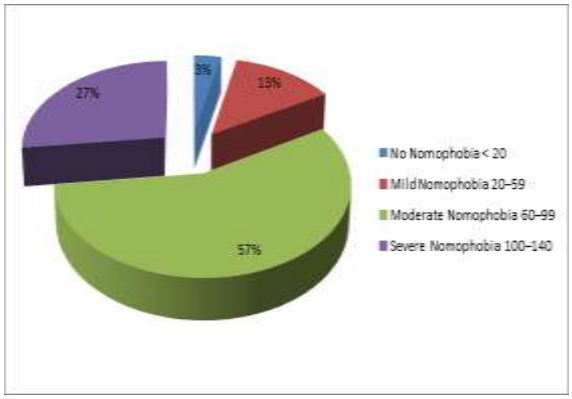


**Figure 2: Prevalence of Nomophobia (NMP-Q Categories)**

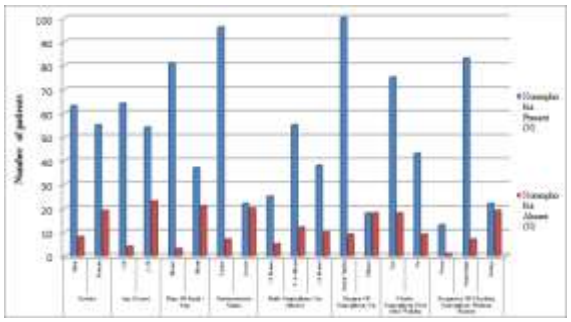

**Figure 3: Association of Factors with Nomophobia (N = 145)**

The demographic characteristics of the study participants. Of the total 145 participants, 71 (48.97%) were male and 74 (51.03%) were female. Regarding age, 68 participants (46.90%) were below 20 years, while 77 (53.10%) were 20 years or older. The majority of participants resided in hostels (87, 60.00%), compared to 58 (40.00%) who stayed at home. Socioeconomic status distribution showed that 15 participants (10.34%) belonged to Class I, 25 (17.24%) to Class II, 35 (24.14%) to Class III, 45 (31.03%) to Class IV, and 25 (17.24%) to Class V. [Table 1]

In the present study, the daily smartphone usage among participants varied, with 30 (20.69%) using their smartphones for less than 3 hours, 67 (46.21%) for 3–6 hours, and 48 (33.10%) for more than 6 hours. The majority of participants, 109 (75.17%), reported using their smartphones primarily for social media, while 36 (24.83%) used them for other purposes. Regarding smartphone habits, 93 participants (64.14%) checked their smartphone immediately after waking, whereas 52 (35.86%) did not. When asked about checking their smartphone without any specific reason, 14 participants (9.66%) reported never doing so, 90 (62.07%) sometimes and 41 (28.28%) always. [Table 2]

The association between participant characteristics and nomophobia is summarized in Table 3. Overall, nomophobia was more prevalent among males (63, 88.7%) than females (55, 74.3%), although the difference was not statistically significant ($\chi^2 = 1.643$, $p = 0.199$). Participants below 20 years of age exhibited significantly higher nomophobia (64, 94.1%) compared to those aged 20 years or older (54, 70.1%) ($\chi^2 = 7.89$, $p = 0.004$), with a mean age of 20.1 ± 1.8 years. Students residing in hostels reported a significantly higher prevalence of nomophobia (81, 96.4%) than those living at home (37, 63.8%) ($\chi^2 = 23.864$, $p < 0.001$). No significant association was found between socioeconomic status and nomophobia ($p = 0.402$). Regarding smartphone usage, daily use duration did not significantly affect nomophobia prevalence, with 25 (83.3%) for <3 hours, 55 (82.1%) for 3–6 hours, and 38 (79.2%) for >6 hours ($p = 0.364$). However, participants using smartphones primarily for social media had a significantly higher prevalence of nomophobia (100, 91.7%) compared to those using it for other purposes (18, 50.0%) ($\chi^2 = 10.98$, $p < 0.001$). Checking the smartphone first after waking was not significantly associated with nomophobia ($p = 0.119$). Frequency of checking the smartphone without reason showed that those who always checked had lower nomophobia (22, 53.7%) compared to those who never (13, 92.9%) or sometimes (83, 92.2%) checked, although this association was not statistically significant ($p = 0.364$). [Table 3]

The prevalence of nomophobia among participants, as measured by the NMP-Q, Only 5 participants (3.4%) had no nomophobia, while 19 participants (13.1%) exhibited mild nomophobia. The majority of participants, 82 (56.6%), were classified as having moderate nomophobia, and 39 participants (26.9%) fell into the severe nomophobia category. This indicates that over 80% of the study population experienced some degree of nomophobia, with moderate levels being the most common. [Table 4]

Thematic analysis of in-depth interviews revealed that MBBS students perceive smartphones as essential tools for academic work, daily life management, and coordination, with extensive use for accessing notes, e-books, apps, and social media. Participants reported strong emotional attachment, experiencing anxiety and a constant urge to check their phones, reflecting dependency and fear of missing out. Despite awareness of overuse, including distraction from studies and mindless scrolling, students struggled with self-regulation, reporting failed attempts to limit usage and habitual checking.

Emerging technology-related nomophobia was also noted, with reliance on AI tools like ChatGPT contributing to anxiety when unavailable. Overall, smartphones were viewed as indispensable yet potentially disruptive. [Table 5]

## DISCUSSION

A mixed-method cross-sectional study was conducted among 145 medical students at JMN Medical College, Chakdah. Participants completed a questionnaire on demographics, smartphone use, and the Nomophobia Questionnaire (NMP-Q). Quantitative data were analyzed using descriptive statistics and chi-square tests, while qualitative data were analyzed by thematically interviews to explore perceptions of smartphone use and nomophobia.

The present study assessed nomophobia and smartphone use among 145 MBBS students, revealing high prevalence and multifaceted associations with demographic and behavioral factors. Consistent with previous literature, such as Goncalves et al, (2020) and Sharma et al (2019), over 80% of participants experienced some degree of nomophobia, with moderate levels being most common. Only a small minority (3.4%) reported no nomophobia, highlighting the pervasive nature of smartphone dependence in this population.[11-13]

Age and residence were significantly associated with nomophobia. Students below 20 years and those residing in hostels exhibited higher prevalence, suggesting that younger students and those in independent living arrangements may rely more heavily on smartphones for social connectivity and academic coordination, aligning with findings from Lee & Kim (2021) and Bhattacharya et al. (2019).[12,14] Interestingly, gender did not show a significant association, although males had slightly higher prevalence, echoing the mixed findings reported in the literature (King et al., 2010; Yildirim & Correia, 2015).[16-19]

Behavioral patterns, particularly the purpose of smartphone use, influenced nomophobia prevalence. Students using smartphones primarily for social media had significantly higher nomophobia, supporting the role of social comparison and Fear of Missing Out (FoMO) as mediators of smartphone dependency, as suggested by Lee & Kim (2021) and Alhassan et al. (2021).[12,15] In contrast, duration of daily use and habitual checking patterns were not significantly associated with nomophobia, indicating that qualitative aspects of usage may be more predictive than sheer time spent.

Thematic analysis of interviews underscored the emotional and functional dimensions of smartphone dependence. Participants expressed anxiety when smartphones were unavailable, a sense of indispensability for academic and personal tasks, and difficulty regulating use, consistent with findings from Rahman et al (2022) and Garcia-Montes et al. (2020).[17,18] Notably, emerging technology-related dependence, such as reliance on AI tools, was reported, reflecting a modern evolution of nomophobia beyond traditional mobile functions.

Overall, the study highlights that nomophobia among medical students is widespread and influenced more by age, residence, and purpose of use than by gender or duration. The findings suggest the need for targeted interventions promoting digital well-being, self-regulation, and awareness of smartphone overuse, particularly in younger and hostel-residing students. Future research may explore longitudinal effects and strategies to mitigate technology-induced anxiety while maintaining academic efficiency. Yildirim et al 2015 Lin, Y et al.[19,20]

## CONCLUSION

The study highlights that nomophobia is highly prevalent among MBBS students, with over 80% experiencing some degree of dependence, most commonly moderate levels. Younger students and those residing in hostels are particularly vulnerable, while gender and socioeconomic status showed no significant influence. Smartphone use for social media emerged as a strong predictor of nomophobia, whereas total daily usage and habitual checking patterns were less influential. Qualitative findings further revealed that students perceive smartphones as essential for academic and daily life, yet experience anxiety, dependency, and difficulty in self-regulation, including emerging reliance on AI tools. These results underscore the dual role of smartphones as indispensable academic tools and potential sources of psychological distress, emphasizing the need for awareness programs and strategies promoting healthy digital habits among medical students.

## REFERENCES


1. King AL, 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.
2. Bragazzi NL, Del Puente G. A proposal for including nomophobia in the new DSM-V. Psychol Res Behav Manag. 2014;7:155–60.
3. Yildirim C, Correia AP. Exploring the dimensions of nomophobia: Development and validation of a self-reported questionnaire. Comput Human Behav. 2015;49:130–7.
4. Bhattacharya S, Bashar M, Srivastava A, Singh A. Nomophobia: A study to evaluate mobile phone dependence among students of medical college in Delhi. Int J Community Med Public Health. 2019;6(3):1204–8.
5. Samaha M, Hawi NS. Relationships among smartphone addiction, stress, academic performance, and satisfaction with life. Comput Human Behav. 2016;57:321–5.
6. Demirci K, Akgönül M, Akpinar A. Relationship of smartphone use severity with sleep quality, depression, and anxiety in university students. J Behav Addict. 2015;4(2):85–92.
7. Gezgin DM. Understanding the prevalence of nomophobia among adolescents. Int J Res Educ Sci. 2018;4(2):415–25.
8. Sethia S, Melwani V, Melwani S, Priya A, Gupta S, Khan A. A study to assess prevalence of nomophobia among students of a medical college in Madhya Pradesh. Natl J Community Med. 2018;9(7):451–4.

9. Pavithra MB, Madhukumar S, Mahadeva M. A study on nomophobia – mobile phone dependence among students of a medical college in Bengaluru. Natl J Community Med. 2015;6(3):340–4.
10. Moreno MA, Whitehill JM. Influence of social media and smartphones on adolescent health. Pediatrics. 2014;133(2):e530–5.
11. Goncalves, S., Dias, P., & Correia, A. P. (2020). Nomophobia and smartphone addiction: A systematic review. Computers in Human Behavior Reports, 1, 100008.
12. Lee, S., & Kim, H. (2021). The role of Fear of Missing Out (FoMO) and social comparison in the relationship between social media use and nomophobia. Journal of Behavioral Addictions, 10(2), 305-314.
13. Sharma, N., Sharma, P., & Sharma, S. (2019). Assessing nomophobia among undergraduate students: A cross-sectional study in a university setting. Journal of Family Medicine and Primary Care, 8(8), 2607–2612.
14. Bhattacharya, S., Bashar, M. A., Srivastava, A., & Singh, A. (2019). Nomophobia: No mobile phone phobia. Journal of Family Medicine and Primary Care, 8(4), 1297–1300.
15. Alhassan, A. A., Alqadhib, E. M., Taha, N. W., Alahmari, R. A., & Salam, M. (2021). The relationship between smartphone use, insomnia, and academic performance in Saudi medical students. Journal of Nature and Science of Medicine, 4(1), 45-51.
16. King, A. L. S., Valença, A. M., & Nardi, A. E. (2010). Nomophobia: The mobile phone in panic disorder with agoraphobia: Reducing phobias or worsening of dependence? Cognitive and Behavioral Neurology, 23(1), 52–54.
17. Rahman, T., Bari, M. S., & Rahman, M. M. (2022). Smartphone dependency and its impact on clinical performance among medical students in Bangladesh: A cross-sectional study. BMJ Open, 12(3), e058175.
18. Garcia-Montes, J. M., Perez-Alvarez, M., & Balbuena, C. S. (2020). Psychological factors in nomophobia: The role of self-criticism and dependency. Cyberpsychology, Behavior, and Social Networking, 23(5), 306-311.
19. Yildirim, C., & Correia, A. P. (2015). Exploring the dimensions of nomophobia: Development and validation of a self-reported questionnaire. Computers in Human Behavior, 49, 130–137.
20. Lin, Y. H., Chang, L. R., Lee, Y. H., Tseng, H. W., Kuo, T. B., & Chen, S. H. (2014). Development and validation of the Smartphone Addiction Inventory (SPAI). PLOS ONE, 9(6), e98312.