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Research Article

Nomophobia –Mobile Phone Dependence, A Cross-Sectional Study Among Engineering Students of Raichur

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ABSTRACT

Background: Nomophobia (no-mobile-phone phobia) is an emerging behavioral dependence associated with excessive smartphone use and adverse psychosocial outcomes. Limited data exist from engineering student populations in semi-urban India. **Objectives:** To estimate the prevalence and severity of nomophobia and to identify usage patterns and determinants among undergraduate engineering students at NET Engineering College, Raichur. **Methods:** An institutional cross-sectional study was conducted during August–December 2025. Five hundred seventeen undergraduate engineering students completed the validated Nomophobia Questionnaire (NMP-Q), a 20-item instrument rated on a 7-point Likert scale. Data on demographic characteristics and smartphone use behaviors were collected. Prevalence estimates, severity distributions, common usage activities, and associations between nomophobia and potential determinants were analyzed; statistical significance was set at $p \leq 0.05$. **Results:** The overall prevalence of nomophobia in the sample was 70.99%. Severity categories recorded in the study population were: mild 29.59%, moderate 51.06%, and severe 17.98%. The most frequently reported smartphone activities were music streaming, gaming, internet browsing and social media engagement. Duration of smartphone usage was identified as a significant determinant of nomophobia ($p = 0.05$). Neither gender nor age demonstrated statistically significant associations with nomophobia in this cohort. **Conclusion:** Nomophobia affected a substantial proportion of engineering students at NET Engineering College, with common engagement in music, gaming, browsing and social media rather than for academic purposes. These findings underscore the need for interventions addressing the prolonged smartphone use.

Keywords – Nomophobia, smartphone usage, phobia

INTRODUCTION

Nomophobia, commonly termed "no-mobile-phone phobia," denotes the distress, anxiety or marked discomfort experienced when an individual is unable to access or use a mobile

phone. This phenomenon has been conceptualised not merely as momentary inconvenience but as a reproducible behavioural response with potential implications for daily functioning and wellbeing, particularly among digitally immersed cohorts.[1]

Contemporary conceptualisations focus on four key dimensions—inability to communicate, loss of connectedness, inability to obtain knowledge, and sacrifice of convenience—and measurement attempts have focused around standardised instruments such as the Nomophobia Questionnaire (NMP-Q). These categories correspond to observable actions (compulsive checking, panic when the battery is low, avoidance of phone-free settings) and provide a useful framework for epidemiological assessment and intervention design.[2]

According to behavioral and cognitive theories, nomophobia is perpetuated by reinforcement learning from intermittent notifications and social rewards, while device-dependent emotional regulation mechanisms strengthen maladaptive reliance. Neurobehavioural analogies with other compulsive behaviors include overlapping systems of reward anticipation and attentional bias, which explains why momentary detachment quickly escalates into exaggerated anxiety for some people.[3]

When access is restricted, closely related concepts like social-comparison orientation and fear-of-missing-out (FoMO) increase somatic symptom reporting and anxiety response. People with strong social comparison are more likely to experience pain during forced digital absence because they are more sensitive to online assessments.[4]

Nomophobia has shown to negatively affect academic functioning in addition to causing subjective discomfort. Because excessive smartphone use fragmented attention, reduces encoding and retrieval, and reduces study efficiency, higher scores are consistently linked to lower performance; even short interruptions result in quantifiable drops in task performance and test scores.[5] Additional clinical and subclinical research relates increased nomophobia to sleep disturbances, daytime drowsiness, and decreased cognitive function, generating a vicious cycle that sustains nomophobic behaviors and psychological suffering.[6]

According to numerous surveys conducted among college and university populations in India, prevalence estimates are remarkably high and frequently approach saturation levels among young people and professional students.[7] Significantly higher percentages are seen among engineering and technical student groups in particular, which is indicative of a strong curriculum-based reliance on smartphones for file sharing, virtual meetings, coding references, and the blending of social and academic use.[8]

Hostel living, peer norms regarding attentiveness, and reliance on phones for convenient tasks (transport, payments, and schedules) are among the demographic, behavioral, and environmental factors that have been mapped in recent cross-sectional studies.[9] Heterogeneity in instruments, scoring thresholds, and cultural adaptations, however, is a persistent methodological restriction that makes comparative inference and pooled prevalence estimation challenging.[10]

India's swift digital transition, which is typified by a sharp surge in mobile subscriptions and almost universal smartphone availability among younger generations, has made it difficult to distinguish between problematic use and educational necessity. In addition to increasing functional dependence, broader cultural movements toward mobile platforms for socializing, e-learning, and services have also raised the potential of maladaptive

reliance.[11] Additionally, contextual studies from Central India have brought attention to the relationship among loneliness, self-esteem, and nomophobia.[12] Despite the continuous growth of technical education into rural, semi-urban, and smaller district settings, the majority of published Indian research come from metropolitan institutions, indicating persistent geographic and sample gaps.[13] Stakeholder-engaged solutions and evidence specific to a given location are essential, according to recent nursing and allied health research.[14]

Given these considerations, a focused prevalence and correlates study among engineering students in semi-urban districts such as Raichur—where academic pressures, rising smartphone dependence for coursework, limited mental-health resources and minimal prior local data converge—is both timely and necessary. Estimating local prevalence and identifying modifiable risk factors will enable institutions to prioritise resource allocation, design contextually appropriate workshops, and monitor outcomes of targeted digital-wellbeing initiatives.[15]

Objectives:

To assess the prevalence of nomophobia and to study the determinants of nomophobia among engineering students.

METHODOLOGY

Study design: Cross-sectional study

Study setting: NET engineering college, Raichur city

Sample size: Engineering students of NET College present at the time of study.

Study period: August-December 2025 (5 months)

The study was conducted among undergraduate engineering students of NET College, Raichur

Undergraduate students from second year to final year were enrolled for the study. Oral consent was taken from each participant.

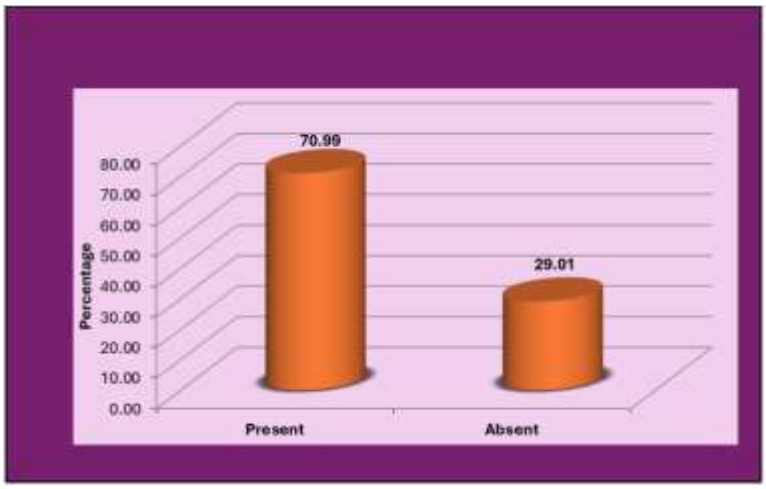
Data was collected from a total of 517 students with a validated, predesigned, pretested questionnaire with 3 sections including nomophobia questionnaire scale with 20 questions with 7 levels of agreement for each was used to assess nomophobia.

Data was compiled, analysed and results were expressed as percentages. Appropriate test like chi square test was used to study the association between study variables and the outcome variables.

Levels of nomophobia was calculated by summing up the responses to each item and then categorizing the total score as nomophobia absent (score <59) and nomophobia present (score 60-140).

Ethical consideration: Ethical clearance was obtained from the Institutional Ethical Committee of Navodaya Medical College Hospital and Research Institute, Raichur before conducting the study.

RESULTS



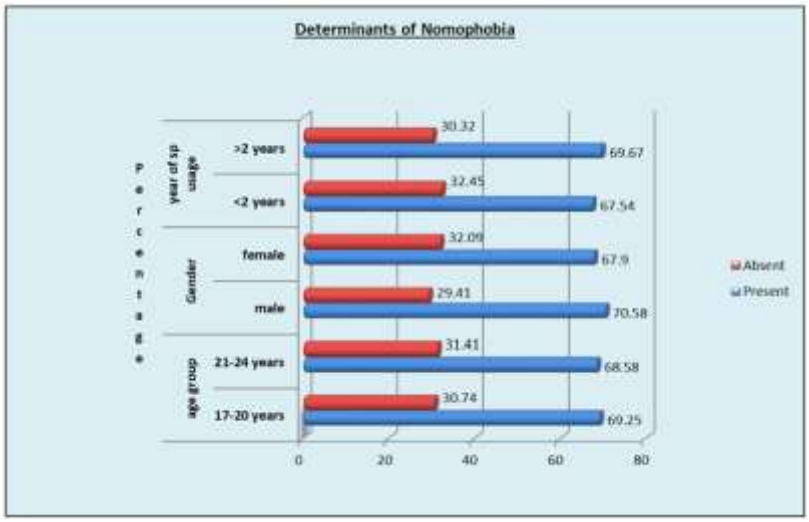
Graph No.1 Prevalence of Nomophobia

Graph 1 depicts the prevalence of nomophobia among engineering students. Based on the scoring there was presence of nomophobia in 70.99%.

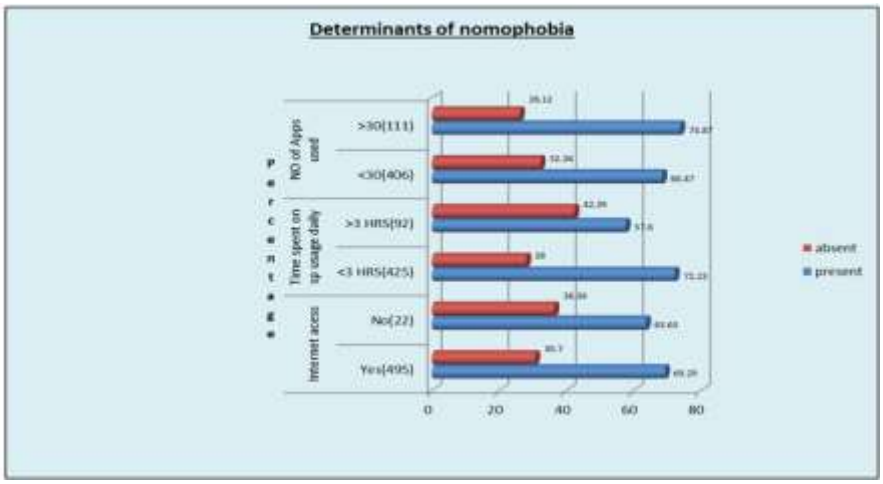
Table no.1 Pattern and practices of smart phone usage

Purpose of usage	Frequency	Percentage
Listening to Music	448	86.65
Gaming	439	84.91
Looking info up on the internet	438	84.71
Checking social media	421	81.43
Checking lecture notes	343	66.34
Getting news	318	61.5
Texting/call family and friends	255	49.32
Checking email	204	39.45

The majority (86.65%) of the study subjects used smartphones for listening to music, followed by 84.91% for gaming purposes. Around 84.71% of them used to look info on the internet and only 39.45% of them used to look for emails.



Graph no.2: Determinants of nomophobia



Graph no.3: Determinants of nomophobia

Graph no 2 & 3 depicts the determinants of nomophobia like years of usage, age groups, number of apps used, time spent and internet access.

Among these 70.58 % of them were males who used smartphones, 69.67% of students starting using smartphone for more than 2 years, and around 57.6% of them spent more than 3 hours in a day, the most common age group who used smartphones were from 17-20 years (69.95%). Around 69.29% of them had internet access.

Table no 2: Degrees of Nomophobia

Degree	Frequency	Percentage
No Nomophobia	7	1.35%
Mild Nomophobia	153	29.59%
Moderate Nomophobia	264	51.06%
Severe Nomophobia	93	17.98%
Total	517	

Majority of them were classified under moderate level of nomophobia (51.06%) followed by mild nomophobia (29.59%) based on the scoring.

Table no.3 Relationship of determinants with nomophobia

Determinants	Degree of nomophobia			p value
	Mild	Moderate	Severe	
Gender				
Male	61(39.9)	116(42.6)	40(47.1)	0.629
Female	92(60.1)	156(57.4)	45(52.9)	
Age				
17-20	108(70.6)	194(71.3)	56(65.9)	0.348
21-24	45(29.4)	78(28.7)	29(34.1)	
Year of usage				
2nd year	65(42.5)	131(48.2)	35(41.2)	
3rd year	51(33.3)	80(29.4)	31(36.5)	0.05
Final year	37(24.2)	61(22.4)	19(22.4)	

Chi square test was used to determine the association between the determinants of nomophobia, Gender and age were found to be statistically insignificant whereas the year of usage of smartphones was found to be statistically significant.

DISCUSSION

The present study conducted among 517 engineering students at NET College, Raichur, revealed a high prevalence of nomophobia at 70.99%. Regarding the severity of the condition, the majority of the students (51.06%) were categorized as having moderate nomophobia, while 29.59% exhibited mild nomophobia and 17.98% suffered from severe nomophobia. These findings indicate that a significant proportion of the technical student population is experiencing distress when separated from their mobile devices, with very few students (1.35%) reporting no symptoms at all.

A study done by Ghanate AN *et al.* conducted specifically on engineering students, similarly highlighted the extensive reach of this phenomenon in technical education settings. Their research supports the observation that the unique academic demands placed on engineering students—such as the need for constant connectivity for coding, file sharing, and virtual simulations—may contribute to higher saturation levels of smartphone dependence compared to other disciplines.[8]

A study done by Humood A *et al.* which conducted a systematic review and meta-analysis of nomophobia prevalence by population, identified that university students consistently exhibit higher pooled prevalence rates compared to the general adult population. Their analysis suggests that the variation in prevalence rates across different regions often correlates with the type of assessment tool used and the cultural integration of technology, supporting our finding that technical students are a high-risk subgroup globally.[10]

In the present study, the analysis of smartphone usage patterns showed that entertainment and social connection were the primary drivers of device interaction. Listening to music was the most frequent activity (86.65%), followed closely by gaming (84.91%) and looking up information on the internet (84.71%), whereas checking emails was the least reported activity (39.45%). This data suggests that while the device is an academic tool, its utility is heavily dominated by recreational applications which reinforce compulsive checking behaviors.

A study done by Aldhahir AM *et al.* which examined physiotherapy students, found that while smartphones are critical for academic

performance, there is often a blurring of lines between study-related usage and social networking. This correlates with our observation that students may justify high screen time for "information seeking," yet the dominant behaviors remain recreational, potentially leading to the fragmented attention spans discussed in broader cognitive theories.[5]

The present study analyzed the relationship between nomophobia and various sociodemographic determinants, revealing that the year of smartphone usage was a statistically significant factor ($p = 0.05$). Conversely, other demographic variables such as gender ($p = 0.629$) and age ($p = 0.348$) were found to be statistically insignificant, suggesting that the vulnerability to nomophobia in this cohort is driven more by the duration of habituation to the device rather than biological or age-related factors.

A study done by Yogeshkumar S *et al.* focusing on predictors of nomophobia among medical students in South India, explored similar demographic variables to identify risk groups. While some literature posits that females or younger adolescents are more prone to social-comparison anxiety, our findings align with research suggesting that in highly professional courses like engineering, the functional necessity of the phone equalizes usage habits across gender and age groups.[7]

In the present study, while specific anxiety scales were not the primary focus, the severity data revealed that nearly 70% of students suffer from moderate to severe nomophobia, implicating a strong undercurrent of psychological distress. The usage patterns dominated by gaming (84.91%) and social media (81.43%) further point to a behavior pattern where the device is used as a primary mechanism for emotional regulation or escapism, rather than just communication.

A study done by Sayed AM *et al.* investigated the association between anxiety, activity performance, and nomophobia in students, finding a direct correlation where higher nomophobia scores significantly hindered daily activity performance. Their research posits that the anxiety stemming from smartphone separation acts as a cognitive load that degrades academic and functional efficiency, a mechanism that likely explains the intense device attachment observed in our engineering cohort.[3]

The present study focused on a specific cohort of undergraduate engineering students ranging from second year to final year, finding that the duration of smartphone usage was a significant predictor of nomophobia ($p = 0.05$). This demographic is particularly vulnerable due to the "always-on" culture of modern campuses, where peer communication and academic updates are exclusively routed through mobile channels.

A study done by Tuco KG *et al.* providing a systematic review of nomophobia specifically in university students, highlighted that this population is uniquely susceptible due to a combination of academic stress and social expectation. Their findings align with our observation that as students progress through their years of study—and consequently their years of smartphone usage—their dependency deepens, likely due to the social survival and academic success.[2]

CONCLUSION

The majority of the individuals were between the ages of 18 and 24 years. The study found that nomophobia affected 70.99% of participants. 70.58% of males and 67.90% of females depended on mobile phones. The majority of them used their smartphones to listen to music, play games, browse the internet, and check social media. The variable of time spent on smartphone usage was a significant predictor of nomophobia.

Recommendations: As there is a saying prevention is better than cure, as in the present study the prevalence of nomophobia is 70.99%, so proper education and awareness regarding the effects of mobile phones that cause nomophobic behaviours and attempts to combat and reduce the effects of mobile phone addiction will be effective

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