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Original Research Article

A cross-sectional study to know the prevalence, pattern, and contributing factors associated with nomophobia in medical students

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ABSTRACT

Background: Now-a-days, Smartphone offers people great opportunities and luxuries. According to the Telecom Regulatory Authority of India (TRAI); in 2021, India had roughly 180.96 million mobile users, and issues by mobile phone use have been significantly increased in recent years Nomophobia is a modern phobia that appeared in this digital era. It is the conjunction of "nonmobile" and "phobia" and refers to the worry, anxiety, and discomfort associated with not having a mobile device when needed. The objectives of this study are to understand (a) prevalence of nomophobia in medical students; (b) association of Nomophobia with self-esteem among medical students; and (c) association of nomophobia with life satisfaction among medical students.
Methods: This was an observational, cross-sectional, single-centred, self-assessable questionnaire-based study. 700 students (pursuing MBBS, internship or residency) from the government medical college, Bhavnagar were enrolled. The participants were assessed by proforma containing demographic details, a questionnaire of Nomophobia (NMPQ), Rosenberg Self-Esteem Scale (RSES), and Satisfaction with Life Scale (SWLS). The statistical analysis was done with Graph Pad Instat version 3.06 (San Diego, California, US). Proportions were compared by using the Chi-square test while NMPQ, RSES, and SWLS scores were compared by the Students t test.
Results: We found all participants had some degree of nomophobia (29% mild, 31.29% moderate, and 5.43% severe). Nomophobia had a significant association with self-esteem and satisfaction with life.
Conclusions: Participants with nomophobia are more likely to experience low self-esteem and poor satisfaction with life.

Keywords: Life satisfaction, Medical students, Nomophobia, Self-esteem

INTRODUCTION

In today's world, smartphones offer people great opportunities and luxuries. With significant advancements in technology, mobile phones have become an essential component of our lifestyle, serving as a means of communication and a necessity. Mobile phones provide a wide range of features and services, including internet access, social networking, personal organization tools, multimedia capabilities (such as cameras and music players), and much more.[1] The users of this technology claim that mobile phones have become an integral part of their identity and way of life.[2] undoubtedly, these gadgets have become vital tools of modern living.[3] The telecom regulatory authority of India (TRAI) reported that as of 2021, India had approximately 1180.96 million mobile phone users.[4] With the significant increase in mobile phone use in recent years, there have

been noticeable behavioral changes in daily routines and actions.[5,6] Smartphone addiction is now considered a public health issue, akin to alcohol or substance addiction.[7]

Individuals who are dependent on their phones exhibit typical characteristics such as frequent checking of notifications, using multiple phones, always carrying a charger, keeping the phone close during sleep, avoiding face-to-face interaction, and preferring a world of virtual connections. [8, 9] These individuals experience distress and disruption when they are separated from their mobile phones due to reasons like unavailability, network coverage issues, or battery depletion. This loss of contact with the mobile device negatively affects their concentration and can lead to symptoms such as tachycardia, perspiration, respiratory discomfort, and anxiety.[8] To cope with these distressing symptoms, individuals may resort to excessive phone use, which can result in dependency syndrome.[9] This syndrome, also known as nomophobia, is characterized by worry, anxiety, and discomfort associated with not having a mobile device when needed.[10-16] Nomophobia is structured into four main dimensions: the fear of not being able to communicate with other people, the fear of losing connectivity, the fear of not having immediate access to information, and the fear of relinquishing the comfort provided by mobile devices.[17]

Despite its prevalence and the various health consequences associated with nomophobia, it is not included in the diagnostic and statistical manual of mental disorders (DSM-5).[18] However, overusing mobile phones can impair the psychological, emotional, and cognitive functions of users, leading to a decline in self-esteem.[19,20] Furthermore, there is a growing interest in understanding the relationship between mobile phone use, happiness, and life satisfaction.[21] Some studies suggest a negative association between nomophobia and life satisfaction, while others indicate no significant relationship.[22,23] Considering that life satisfaction is a crucial component of mental health, it is necessary to investigate the connection between nomophobia and life satisfaction.[22] In the context of medical education, it is well-known that medical students often experience strain during their careers and face challenges related to their rigorous academic lives. Previous studies have shown that students who use their phones more frequently tend to have poorer academic performance than those who use them less.[24] Moreover, in healthcare professionals, including physicians, the presence of nomophobia may increase the risk of medical errors, as reported by nursing professionals.[25] These outcomes can be highly detrimental to medical students and aspiring physicians. Therefore, it is important to estimate the prevalence of nomophobia among medical students and understand its effects on their self-esteem and satisfaction with life. Considering the above facts, this study aims to estimate the prevalence of nomophobia among medical students and examine its associations with self-esteem and satisfaction with life. By understanding the impact of nomophobia on medical students, we can develop strategies and interventions to promote their well-being and optimize their academic and professional performance.

Aim and objectives

The primary aim of this study was to investigate the prevalence of Nomophobia among medical students, including undergraduate, postgraduate, and interns, at Government medical college, Bhavnagar. Specifically, the study aims to achieve the following objectives: to determine the prevalence of Nomophobia in medical students at Government medical college, Bhavnagar, to examine the association between Nomophobia and self-esteem among medical students and to explore the association between Nomophobia and satisfaction with life among medical students.

METHODS

Study design

A total of 715 medical students, including undergraduate, postgraduate, and interns, from Government Medical College Bhavnagar, were selected to participate in the study between July 2021 and July 2022. Only students who had been using a mobile phone for a minimum of 12 months and provided consent to participate were included in the study. Students who did not use mobile phones or provide consent were excluded. Fifteen students were excluded due to incomplete information, resulting in a final study sample of 700 students.

Ethical consideration

A prior approval from the Institutional Ethics Committee was taken. The study did not impose any financial burden on the participants. Written informed consent was taken from all the participants. The study was carried out by the principles as enunciated in the World Medical Association Declaration of Helsinki.

Data collection

Participants were provided with a self-administered proforma that collected demographic information, including name, age, gender, religion, permanent residence, living arrangement (home or hostel), current year of medical education, number of mobile usage, number of SIM card usage, duration of mobile usage per hour, frequency of checking per hour, and major categories for mobile use (e.g., calling family/friends, social media, listening to music, surfing the internet for academics, taking photos, playing games). The presence or absence of history and family history of psychiatric illness and addiction to substances (alcohol/cigarette) were also recorded in the proforma.

Measurement tools

The following scales were used in the study: nomophobia questionnaire (NMP-Q): Developed by Yildirim and Correia, this questionnaire consists of 20 items that assess four main dimensions of nomophobia: not being able to access information, not being able to communicate, losing connectedness, and giving up convenience. Each item is rated on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Scores on the NMP-Q can range from 20 to 140, with scores ≤20 indicating the absence of nomophobia and scores ≥100 indicating severe nomophobia.[17] Rosenberg self-esteem scale (RSES): This scale, developed by Morris Rosenberg, is a ten-item self-report scale that measures global self-esteem. Participants rate their agreement with each item on a four-point Likert scale, ranging from strongly disagree to agree strongly. The total score on the RSES can range from 0 to 30, with scores below 15 indicating low self-esteem and scores of 15 or higher indicating normal/high self-esteem.[25] Satisfaction with life scale (SWLS): Developed by Diener, Emmons, Larsen, and Griffin, this scale assesses global life satisfaction. It consists of five items rated on a 7-point Likert scale, ranging from strongly agree to strongly disagree. The total score on the SWLS can range from 5 to 35, with higher scores indicating higher levels of life satisfaction.[26]

Statistical analysis

Qualitative data were expressed as percentages, while quantitative data were expressed as mean±standard deviation. Statistical analysis was performed using GraphPad Instat version 3.06 (San Diego, California, US).

RESULTS

In this study, a total of 700 medical students from Government medical college Bhavnagar (undergraduate, postgraduate, and interns) were included. The demographic characteristics of the participants are presented in (Table 1).

The prevalence of nomophobia among the students was assessed using the Nomophobia Questionnaire (NMP-Q) and the results are shown in (Table 2). The findings reveal that all students had some degree of nomophobia, with a prevalence of mild nomophobia at 63.29%, followed by moderate nomophobia at 31.29%, and severe nomophobia at 5.43%. The (Table 3) shows the association between nomophobia and gender. Out of the 700 participants, 414 (59.14%) were male and 286 (40.86%) were female. This indicates a male preponderance in experiencing nomophobia. The association between nomophobia and age is presented in (Table 4). The majority of nomophobia students, 328 (46.86%), were aged ≤20, followed by 317 (45.29%) in the age group of >20 and ≤24.

Table 1: Demographic variables of the students (n=700).

Demographic variables	N	%
Age (years)		
≤20	328	46.86
>20 and ≤24	317	45.29
>24 and ≤28	48	6.86
>28	7	1.00
Gender		
Male	414	59.14
Female	286	40.86
Permanent residence		
Urban	560	80.00
Rural	140	20.00
Living in hostel or home		
Hostel	522	74.57
Home	178	25.43
Occupation		
Student	485	69.29
Intern doctor	133	19.00
Resident doctor	82	11.71
Undergoing year of education		
1st year	107	15.29
2nd year	114	16.29
3rd year	128	18.29
Final year	136	19.43
Internship	133	19.00
Post-graduation	82	11.71

Table 2: Prevalence of nomophobia among students.

Nomophobia	N (%)
Absence	0.00
Mild	63.29
Moderate	31.29
Severe	5.43

Table 3: Association between nomophobia and gender (n=700).

Gender	N	%
Male	414	59.14
Female	286	40.86

Table 4: Association between nomophobia and age (n=700).

Age (years)	N	%
≤20	328	46.86
>20 and ≤24	317	45.29
>24 and ≤28	48	6.86
>28	7	1.00

A small percentage of students, 48 (6.86%), belonged to the age group of >24 and ≤28, and only 7 (1.00%) were above the age of 28. The (Table 5) shows the association between nomophobia and living arrangements. Among the nomophobia participants, 522 (74.57%) were living in

hostels, while 178 (25.43%) were living at home. The association between nomophobia and years of education is presented in (Table 6).

Table 5: Association between nomophobia and living arrangement (n=700).

Living arrangement	N	%
Hostel	522	74.57
Home	178	25.43

Table 6: Association between nomophobia and year of education (n=700).

Year of education	N	%
1st year	107	15.29
2nd year	114	16.29
3rd year	128	18.29
Final year	136	19.43
Internship	133	19.00
Post-graduation	82	11.71

The highest percentage of nomophobia students, 136 (19.43%), were in their final year of education, followed by 133 (19.00%) in the internship phase. The distribution of nomophobia varied across different years of education.

DISCUSSION

There is a growing interest in understanding the relationship between mobile phone use, happiness, and life satisfaction.[21] Some studies suggest a negative association between nomophobia and life satisfaction, while others indicate no significant relationship.[22,23] Considering that life satisfaction is a crucial component of mental health, it is necessary to investigate the connection between nomophobia and life satisfaction. Our study reveals a high prevalence of nomophobia among medical students, with all participants exhibiting some level of nomophobia. Mild nomophobia was the most common, followed by moderate and severe cases. Gender difference was also observed, with a higher prevalence among males.

In the context of medical education, it is well-known that medical students often experience strain during their careers and face challenges related to their rigorous academic lives. Previous studies have shown that students who use their phones more frequently tend to have poorer academic performance than those who use them less.[24] Moreover, in healthcare professionals, including physicians, the presence of nomophobia may increase the risk of medical errors, as reported by nursing professionals.[25] These outcomes can be highly detrimental to medical students and aspiring physicians. Therefore, it is important to estimate the prevalence of nomophobia among medical students and understand its effects on their self-esteem and satisfaction with life. In our study, there was a significant association between nomophobia and self-esteem, as well as satisfaction with life. Students with nomophobia were more likely to have low self-esteem and lower levels of life satisfaction. These findings highlight the importance of addressing nomophobia among medical students and implementing interventions to promote healthy mobile phone use. Strategies focusing on improving self-esteem and overall life satisfaction may also be beneficial in managing nomophobia. Further research is warranted to explore the long-term effects of nomophobia on academic performance, mental health, and well-being among medical students.

Study strength

This is the only study that has been conducted amongst medical students of Gujarat, west India on the prevalence of nomophobia and its impact on self-esteem and life satisfaction. This study shows the importance of making policy on the usage of cell phones within colleges and universities.

Limitations

The cross-sectional nature of the study implied that the associations could not be used to identify causal relationships. As this study is based on students' self-reported data, self-reporting bias and stigma associated with mental health issues cannot be eliminated.

CONCLUSION

In conclusion, the results of this study indicate a high prevalence of nomophobia among medical students. Nomophobia was found to be associated with gender, age, living arrangement, and year of education. Further analysis and interpretation of the data will be discussed in the subsequent sections.

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