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ORIGINAL ARTICLE

A Study on Nomophobia among Students of a Medical College in Malaysia.

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Abstract

Background: The word 'Nomophobia' coined from 'no mobile' phobia refers to the fear of not being with the phone. Nomophobic person tend to experience a few symptoms of mobile phone withdrawals. This study was designed to evaluate the occurrence of nomophobia, to determine its possible association with sociodemographic determinants and to assess the health-related consequences.
Methods: This cross-sectional study was conducted among medical students of UniKL Royal College of Medicine Perak and data were collected from a total of 259 medical students using the standard and validated 'Nomophobia Questionnaire' (NMP-Q) to assess nomophobia.
Results: The prevalence of nomophobia was 51.0%, which was slightly higher among males (52.2%) compared to females (47.8%). There were significant association between nomophobia and uses of social media apps such as Twitter, Instagram, and WhatsApp. Headache was the main health consequence of nomophobia (62.5%). Money spent on mobile phone was significantly associated with nomophobia.
Conclusion: Higher prevalence of nomophobia among the medical students thereby indicating their excessive mobile phone dependence is an issue of concern and could possibly impact their mental and physical health of students. Strategies are to be devised on a priority basis for minimizing nomophobia among the students.

Keywords: Nomophobia, mobile applications, mobile phone, medical students

Introduction

Mobile phones have become indispensable and apart from making calls and sending text messages, they are enriched with a variety of functions such as instant messaging, downloadable applications, utilization of information services such as Wi-Fi, Global Positioning System (GPS) and entertainment. Smartphones also enable the user to have internet access, communicating, social networking and even able to monitor their health and lifestyle. It is estimated that as much as 48% of the world population uses smartphones. About 94% of those in the age group of 18 to 29 are users of smart phones.[1]

The term 'nomophobia' was coined by Dixit et al. (2010) referring to the fear of being without the presence of a phone as 'Nomophobia' which was the portmanteau word of no – mobile – phone – phobia.[2] Nomophobia, considered as the phobia of the 21st century has been described in the context of clinical psychology as the irrational fear of not being able to reach to a mobile phone or not being able to communicate through a mobile device.[3,4] Ever increasing reliance on smart phones among adolescents, young adults and college students may signify the evolution of smartphone use evolving from a habit to an addiction.[5]

College students commonly view their smartphones as an integral part of who they are and as an extension of their own selves.[6] Presently, smart phones are being a critical part of maintaining social relationships and conveying the more mundane exigencies of everyday life. Adolescents and young adults today cannot envision an existence without smartphones.[6]

Few studies have suggested that the media use has become such a significant part of a student life that it is 'invisible' to them that they do not necessarily realize their level of dependency on and/ or addiction to the smart phones. Challenging life in college, responsibilities and development of one keen sense of self – identity make students become vulnerable to technology dependence.[7] It is a common observation that students are mostly lost in their own virtual world and much more prefer looking in phone notifications, talking, texting and listening to music rather than talking to the person sitting next to and in front of them.[8]

Common characteristics that have been found to be exhibited by individuals that have nomophobic behaviours become anxious when they have forgotten to take their mobile phones with them, when the battery runs out, or when they have no network coverage. This state of anxiety can adversely affect and individual's concentration to perform their daily activities.[2]

A study conducted in the UK in 2008 stated that 66% of the teenagers and younger population are troubled with the idea of losing their mobile phones.[9] A study from United States found that most students' scores fell within the "moderate" nomophobia range (56.8%), with 24.5% falling into the "mild" range and 18.2% being classified as "severe." The effect of gender on nomophobia scores was also assessed in this study and found that female students' mean score was significantly higher than that of male students.[10]

In finding the ground of nomophobia, it is relevant to identify the most common mobile apps that increase the dependency of user towards mobile phones as in study of Antoine et al. by using Beck Depression Inventory and Internet Addiction Test of Echeburúa, it was proved that it is interrelated in many ways in causing depression and anxiety.[11] While this phobia was not realized by most population, the health-related consequences like sleep disturbance, headache, decreased participation in social activities, lack of activity next day, weight gain and others that cause by this event become a concern which we need to be evaluate.[12]

There is a lacuna of research work that has been done in this field involving our locality hence we have decided to carry out our study to see the prevalence of nomophobia students in our medical college. Hence, we set out to determine the prevalence of nomophobia among medical students in UniKL RCMP, Ipoh, Malaysia and evaluate its possible association with sociodemographic determinants, mobile phone usage pattern and health-related consequences.

Methods

This cross-sectional study was performed among MBBS students in UniKL RCMP over a period of 6 weeks from October to November 2020. The sample size of this study was calculated as 240, based on the population size, estimated prevalence of 71.39%, and the confidence limit of 95% using the online sample size calculator (OpenEpi, Version 3, open source calculator). MBBS students using mobile phones for at least 1 year and willing to participate were included in the study. Of those included, simple random sampling method was used to choose students that will participate in the study.

Nomophobia was assessed among the study participants by applying the most well studied and validated nomophobia questionnaire (NMP-Q). The survey consists of the 20-question NMP-Q in which the respondents rate their level of agreement with each item using a seven-point Likert-type scale. The reliability of the NMP-Q was high (Cronbach's alpha = .95) and the Cronbach's alpha values for the four dimensions of the NMP-Q were .94, .87, .83, and .81, respectively. [13] Thus, being a valid and reliable self-reported questionnaire specifically developed to measure the nomophobic behaviors, the NMP-Q was adopted in the present study. In addition, we also included the sociodemographic, pattern of mobile phone usage, health related consequences, type of applications used the longest and sleeping duration questions into our questionnaire. Each item (consisting of an affirmative statement) was evaluated by the respondent using a Likert-type scale ranging from 1 = Strongly disagree to 7 = Strongly agree, with 4 = Neither agree nor disagree. A two-stage cluster analysis was conducted to identify groups of students with respect to their nomophobic behaviours and by using log-likelihood distance measure, a two cluster solution was identified. The clusters were labelled as "nomophobic" and "non-nomophobic". The survey was conducted through online questionnaire and it was pre-tested using a convenience sample of five medical students consisting student from year 1 - year 5 for the validity and comprehensibility of the sociodemographic and background questions. Statistical analyses were performed on the data set using Microsoft Excel 2019 and SPSS ver. 21.0 (SPSS Inc., Chicago, IL, USA).

Results

Of the 259 study participants, 74.1% (192) were females and nomophobia was observed in 51% of the study participants. Table 1 shows the pattern of mobile phone usage by the study participants listing the purpose of using mobile phones, average time and money spent and mobile phone usage during driving. Health-related consequences of using mobile phones as observed in the study participants are demonstrated in table 2. Headache followed by sleep disturbances were the most observed health-related consequences.

Table 3 shows the association of sociodemographic determinants of study participants with nomophobia. Prevalence of nomophobia was slightly higher among males (52.2%) than females (50.5%) though not statistically significant. The prevalence of nomophobia was observed to be highest among students in age group of 19-20 (57%). The prevalence of nomophobia was found to be significantly associated with the study participants spending 100-150 MYR/month on their mobile phones (p=0.04).

Table 4 shows the association between nomophobia and the commonly used mobile applications. Extended use of social media apps such as Instagram, Twitter and WhatsApp were found to be statistically significantly associated with nomophobic behaviour.

The association of sleep duration of the study participants with nomophobia are shown in table 5. The prevalence of nomophobia was observed to be high among students that slept only five to six hours a day (59.8%).

Discussion

The prevalence of nomophobia among medical students in this college-based cross-sectional study was 51% which was relatively lesser than similar studies from other geographical locations. A recent study from Saudi Arabia had reported 85.3% prevalence of nomophobia among university students.[14] Nomophobia was observed in 86.9% of medical students in a study from Bengaluru, India.[15]

In the present study, prevalence of nomophobia was observed to be slightly on higher side among males (52.2%) as compared to females (50.5%) though not statistically significant. This finding corroborates with the previous findings by Pavithra et al, and Beranuy et al, in their studies among medical students of Bangalore and the study conducted among college students respectively.[9,12] However, a study from the United States had reported higher prevalence of nomophobia among females.[10]

Considering the pattern of mobile phone usage, majority of students were using their mobile phones for social media (92%); to get general information (91.5%); for academic purpose (88.8%); for calling and SMS (87.6%), to avoid loneliness (44.8%) and for playing games (39.8%). Findings from similar studies have also shown comparable patterns of mobile phone usage with social networking and academic reference being the most common reasons for usage.[9,16]

It was observed that, majority of the study participants as high as 47.1% were spending over 3 to 6 hours per day, about 27.8% over 6 to 9 hours per day, 16.6% for more than 9 hours per day on mobile phones. Based on their study, Choliz et al., had reported that mobile phone addiction was determined in the individuals whose duration of mobile phone use is approximately over two hours.[17] The increase in the number of hours of mobile phone usage observed in the present study is an issue of concern. Likewise, our study findings also revealed over 50% of the study participants spending about 50 to 100 MYR per month on their mobile phones and this spending was observed to be statistically associated with the prevalence of nomophobia.

Our study findings showed that, about 48% of study participants would not attend to the phone calls while driving vehicles while 34% would attend phone calls during driving. In a similar study by Vanita et al, majority of students (about 40%) had reported that they would attend to the phone calls while driving vehicles.[16] This differences might be due to the difference in the awareness among students regarding use of mobile phones while driving and its hazardous consequences like accidents.

The most common health-related consequence of mobile phone dependence observed in the present study was headache (62.5%) followed by disturbance of sleep (52.8%), and decreased participation in social activities (37.1%). In a study by Masthi et al, lack of sleep(43%) was observed to be the most common health-related consequence followed by headache (29%).[18] Likewise, Dongre A et al., had also reported the lack of sleep as the most common health-related consequence in about 71% of study participants.[19] As with the findings observed in other similar studies, headache and sleep

disturbances being the major health-related consequence of mobile phone dependence highlights the need for reducing the mobile phone usage and dependence by the students.

There were significant association observed between the presence of nomophobia with money spent by the students for their mobile phones. This finding corroborated with a study from a medical college in India, where the money spent on mobile phones correlated with the trend of nomophobia.[16] However, for other sociodemographic determinants like gender of study participants, there were no significant association observed with nomophobia. This was in line with similar earlier studies by Bianchi and Phillips, and Dixit, S., Shukla, H. wherein no significant difference in terms of gender were observed.[2,20,21] However, a few studies have reported a higher prevalence of nomophobia among males while a few have reported higher prevalence among female students.[10,16,22–24]

While the present study results indicated no significant differences between the nomophobia scores in term of age factor, nomophobia was most common among the students in the age group of 19 to 21. This finding was in line with earlier studies from UK and middle East regions.[25]

As for the usage of mobile applications, there were associations between the apps used for most duration with nomophobia, that included Twitter, Instagram and WhatsApp that indicates the increase in use of social media by the students. There was no statistically significant association observed between the prevalence of nomophobia and the sleep duration of study participants. Self-reported data from the study participants not being accurate could be one of the limitations of the present study and future studies with increased sample size could throw more light on the implications of nomophobic behaviour among the students.

Conclusion

Nomophobia, a 21st century disorder is observed to be emerging as a problem with increase in the usage of mobile phones owing to the online teaching and learning scenario during this COVID-19 pandemic. The present study indicates higher prevalence of nomophobia among the medical students and that there could be health-related consequences. While usage of mobile phones can include attending online classes and referring for academic purposes, the extended addiction and dependence on mobile phones has to be avoided by the students by judicious use of mobile phones.

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Conflict of Interest

The authors declare no conflict of interest.

Table 1. Pattern of mobile phone usage among the study participants

Pattern of mobile phone usage	Frequency (%)
Purpose of using mobile phones	
Calling and SMS	227(87.6%)
To play games	103(39.8%)
Academic	230(88.8%)
Social Media	239(92.3%)
To get general information	237(91.5%)
To avoid loneliness	116(44.8%)
Other*	29(11.2%)
Average time spent on mobile phones per day (Hours)	
1-3	22(8.5%)
>3-6	122(47.1%)
>6-9	72(27.8%)
>9	43(16.6%)
Monthly average money spent on mobile phones (MYR)	
≤50	101(39%)
>50 - 100	131(50.6%)
>100 - 150	19(7.3%)
>150	8 (3.1%)
Usage of mobile phones during driving vehicles	
Stop vehicle and attend	21(8.1%)
Attend while driving	88(34.0%)
Will not attend	124(47.9%)
Do not drive any vehicle	26(10.0%)

*Listening to music, watching movie, online shopping etc.

Table 2. Health-related consequences of mobile phone usage

Health related consequences	**Frequency (%)**
Disturbance of sleep	142(54.8%)
Headache	162(62.5%)
Decreased participation in social activities	96(37.1%)
Lack of activity next day	85(32.8%)
Decreased academic performance	67(25.9%)
Weight gain	25(9.7%)
Road traffic accidents	4(1.5%)

Table 3. Association of sociodemographic determinants with nomophobia

Sociodemographic factor	**Nomophobia (%)**	**p-value**
Gender		
Male	35(52.2%)	0.81
Female	97(50.5%)	
Age (years)		
19 – 21	102(57%)	
22 – 24	30(38%)	0.09
24 – 26	0(0%)	
Year of study		
Pre-clinical (Year 1 & 2)	69(54.3%)	0.29
Clinical (Year 3 to 5)	63(47.7%)	
Money spent (MYR)		
≤50	51(50.5%)	
50 – 100	61(46.6%)	0.04
100 – 150	13(68.4%)	
150 – 200	7(87.5%)	

Table 4. Association of most used mobile apps with nomophobia

Mobile application	Nomophobia (%)	p-value
Instagram	93(57%)	0.01
Twitter	72(62.1%)	0.001
Facebook	6(33.3%)	0.12
YouTube	66(48.6%)	0.41
TikTok	21(52.5%)	0.83
WhatsApp	94(56.3%)	0.02
Others*	17(40.5%)	0.72

*PUBG, shopping apps, Netflix, snapchat, etc.

Table 5. Association of sleep duration with nomophobia

Sleep duration (hours)	Nomophobia (%)	p-value
<5 hours	16(39.0)	0.05
5 – 6 hours	73(59.8%)	
6 – 7 hours	27(43.5%)	
>7 hours	16(47.1%)	

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