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Original Research Article

Prevalence of nomophobia and factors associated with it: a cross-sectional study

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ABSTRACT

Background: Excessive use of mobile phones, including smart phones, is found to result in various health related, social and psychological problems. Nomophobia expands to 'No Mobile Phobia', i.e., fear of being out of mobile phone contact. Previous studies on nomophobia have focused on the student populations, since the younger generation is more technology savvy. This questionnaire-based study aimed to know the prevalence and factors leading to nomophobia in general population.
Methods: This study was conducted in western Gujarat from September 2018 to October 2018. A prevalidated questionnaire, containing three parts, the demographic details, details about the characteristics of mobile phone use and the Nomophobia Questionnaire (NMP-Q), was sent through emails and WhatsApp to 1000 individuals. The responses were tabulated and analyzed.
Results: Out of 331 respondents 192 (58%) were males and 139 (42%) females. There was no significant difference in average NMP scores with respect to gender ($p = 0.401$), age brackets ($p = 0.135$), marital status ($p = 0.123$) and profession ($p = 0.055$). However, NMP scores were significantly more in individuals who spent more time on mobile phones per day ($p = 0.000$), checked their mobile phones more frequently ($p<0.000$) and in whom phantom ringing syndrome was also present ($p<0.000$). 241 respondents (72.80%) felt that their mobile phone use was consuming time and affecting their other daily activities.
Conclusions: Nomophobia is an emerging health related adverse effect of prolonged mobile phone use. Interventions are required to promote judicious use of mobile phones.

Keywords: Mobile phone use, Nomophobia, Nomophobia questionnaire, Phobia, Smartphone addiction

INTRODUCTION

Mobile phones entered the human life in 1980s and since then have become the part and parcel of the very human existence. From being a luxury, to becoming indispensible, mobile phones have covered this distance rather quickly and 'smartly'. It is hard to imagine an hour, let alone a day, without using our mobile phones. Such continuous use is likely to be associated with adverse consequences which are being studied. There are various new terminologies being linked to mobile phone use; WhatsAppitis, phantom ringing syndrome, phantom vibration syndrome, to name a few.[1,2] Nomophobia is a recent addition to this ever growing fancy list.

Nomophobia expands to 'No Mobile Phobia', i.e., fear of being without a mobile device or out of mobile phone contact.[3] According to a report released by the Telecom Regulatory Authority of India (TRAI), the wireless subscriber base in India in May 2018 was 1,131.01 million. With such widespread and rampant use, mobile phone addiction may become one of the biggest non-drug

addictions of the 21st century, with nomophobia being one of its manifestations. Most of the previous studies on nomophobia have been done to find its prevalence among student population. We could not find any previous study to assess the prevalence of nomophobia in general population. This study was intended to know the prevalence of nomophobia among the online questionnaire respondents and to identify the factors associated with it.

METHODS

This was a cross-sectional (online questionnaire based) type of study. This study was conducted at Medical Teaching Hospital of Western Gujarat, India. This study was conducted for two months (September 2018 to October 2018). Since this study carried less than minimal risk for the participants, it was exempted from Institutional Ethics Committee review.

Preparation of questionnaire

A questionnaire was prepared and validated. It contained three parts, the demographic details, details about the characteristics of mobile phone use and the Nomophobia Questionnaire (NMP-Q), developed in English by Yildirim and Correia in 2015.[4] NMP-Q covers four dimensions; not being able to communicate, losing connectedness, not being able to access information and giving up convenience. It contains 20 questions and each question has to be responded on a 7-point Likert scale, with 1 being 'Strongly Disagree' and 7 'Strongly Agree'. Total score <20 means 'no nomophobia', while scores between 21-60, 61-100 and 100-140 meant 'mild', 'moderate' and 'severe' nomophobia respectively. This 3-part questionnaire was sent through emails and WhatsApp to 1000 individuals.

Inclusion criteria

All individuals who responded to the questionnaire voluntarily within 15 days were included in the study.

Exclusion criteria

Individuals with incomplete responses.

Statistical analysis

The responses were tabulated in MS Excel Sheet 2007. For qualitative analysis, percentage and mean were calculated. For quantitative analysis, unpaired t-test, one-way ANOVA and Pearson's correlation coefficient were used. A p value <0.05 was considered as significant.

RESULTS

Of the 1000 individuals to whom the questionnaire was sent, 331 responded within 15 days. 192 (58 %) respondents were males and 139 (42 %) females.

The average age of males was more than females (27.91 v/s 25.35, p = 0.006). Among males, 48.9% had moderate nomophobia, 37.5% had mild nomophobia while 12.5% were severe nomophobes. Among females, 55.3% had moderate, 34.5% had mild and 10% had severe nomophobia (Table 1). However, there was no significant difference in males and females with respect to the severity of nomophobia (p = 0.401).

Table 1: Distribution of male and female respondents and their nomophobia severity.

	Number (n)	Average age (years)*	Nomophobia (n)**			
			No	Mild	Moderate	Severe
Male	192	27.91	2	72	94	24
Female	139	25.35	0	48	77	14

* p = 0.006, ** p = 0.401

The demographic factors related to mobile phone use are shown in Table 2. There was no significant difference between the average NMP scores of males and females. Maximum respondents (65.2%) were between 20-40 years of age, but there was no significant difference in the average NMP scores among different age groups. Similarly, the average NMP score was not affected by the marital status. However, if we see the difference in average NMP score between married and unmarried groups only (excluding divorcee group), then p = 0.033. Both, medical and non-medical respondents exhibited similar average NMP scores.

There were 159 respondents (48.03%) using mobile phones for less than 5 years, 128 (38.67%) between 5-10 years and 44 (13.29%) for more than 10 years. However, the difference in their average NMP scores was not significant. 240 respondents (72.5%) spent 1-5 hours daily using their mobile phones while only 34 (10.2%) respondents spent less than 1 hour on their mobile phones. The average NMP scores significantly increased with the daily duration spent on mobile phones (p = 0.000) (Table 2). Similarly, those individuals who checked their mobile phones more frequently had significantly higher average NMP scores (p<0.000) than

those who checked their phones less frequently. In 149 respondents (45.01%), phantom ringing sensation (PRS) was also present and their average NMP score was significantly more than those in whom PRS was absent (p<0.000). 241 respondents (72.80%) felt that their mobile phone use was consuming time and affecting their other daily activities and their average NMP score was significantly higher than those who did not feel so (p = 0.001).

Table 2: Relation of various factors with average nomophobia score.

Factor		Average NMP Score	Significance
Gender	Male (n = 192)	70.53	p = 0.401
	Female (n = 139)	71.24	
Age (in years)	<20 (n = 92)	73.39	p = 0.135
	20-40 (n = 216)	70.94	
	40-60 (n = 21)	59.14	
	>60 (n = 2)	62.50	
Marital status	Married (n = 111)	67.08	p = 0.123
	Unmarried (n = 217)	72.55	
	Divorcee (n = 3)	84	
Profession	Medical (n = 264)	71.95	p = 0.055
	Non-medical (n = 67)	66.38	
Duration of mobile phone use (in years)	<5 (n = 159)	69.74	p = 0.103
	5-10 (n = 128)	74.10	
	>10 (n = 44)	65.20	
Approximate duration in a day spent on mobile phone (in hours)	<1 (n = 34)	53.61	p = 0.000
	1-5 (n = 240)	71.77	
	>5 (n = 57)	77.10	
Frequency of checking mobile phone	Every 5 minutes (n = 51)	79.05	p<0.000
	Every 30 minutes (n = 123)	75.65	
	Every 1 hour (n = 73)	73.17	
	>1 hour (n = 84)	56.70	
Phantom ringing sensation	Present (n = 149)	77.94	p<0.000
	Absent (n = 182)	65	
Do you feel that your mobile phone use is consuming time and affecting your other daily activities?	Yes (n = 241)	73.40	p = 0.001
	No (n = 90)	63.93	

Table 3: Distribution of symptoms associated with mobile phone use.

Symptom	Number (percentage)
Sleep disturbance	127 (38.3%)
Straining of eyes	114 (34.4%)
Shoulder/ Neck/ Back pain	60 (18.1%)
Headache	59 (17.8%)
Watering of eyes	40 (12%)
Fatigue	36 (10.8%)
Wrist pain	35 (10.5%)

As seen in Table 3, the most common symptoms that the respondents associated with their mobile phone use were sleep disturbance (38.3%) and straining of eyes (34.4%). Other less common symptoms were shoulder/neck/back pain, headache, watering of eyes fatigue and wrist pain.

DISCUSSION

Mobile phone use has increased manifolds recently due to access to cheaper handsets and data, which has resulted in prolonged, continuous use and getting dependent on it. Many studies are being conducted to assess the effects of mobile phone use on individual's health. Addiction to internet and mobile phones has led to the development of many scales and questionnaires to quantify and classify this addiction. NMP-Q is one such questionnaire which classifies nomophobia into mild, moderate and severe degree. Originally developed in English language, NMP-Q has been translated and validated in Turkish, Persian and Italian languages.[5-7] Most of the previous studies on nomophobia have been conducted on student population.[8-12] The prevalence of nomophobia in these studies has varied from 38% to 100%. In our study, out of 331 respondents, only 2 females did not have nomophobia (Table 1).

As more time is spent on phone, it is expected to create adverse health consequences such as loneliness and lack of self-esteem and self-happiness.[12] In our study, there was no difference between the average nomophobia scores with respect to gender. However, in other study by Beranuy M et al, it was found that problematic mobile phone use lower in the female students compared to the males.[13] We found no significant difference in the average NMP scores among the different age brackets, but, there was a negative and significant correlation between age and NMP score (r = -0.131, p = 0.017), indicating that younger individuals tended to have higher levels of nomophobia. Further, in our study, the NMP score was not affected by marital status (married v/s unmarried v/s divorcee), profession (medical v/s non-medical) and duration (in years) of mobile phone use. However, if we exclude the divorcee group (n = 3), then unmarried individuals had significantly higher average NMP scores than married individuals (p = 0.033), which may be because unmarried individuals are relatively lonely.

We studied factors, such as duration of phone use, daily time spent on mobile phone, frequency of checking mobile phone and presence of phantom ringing syndrome, related to mobile phone use (Table 2). 240 individuals (72.5%) used mobile phones between 1-5hours daily. Those who used mobile phones for >5hours daily had significantly higher average NMP scores, than those who used for <1hour. Similarly, those who frequently checked their mobile phones (every 5minutes) had more NMP scores than those who checked less frequently. In 149 (45.01%) participants of our study, Phantom Ringing Syndrome (PRS) was also present, which is an auditory hallucination seen in mobile phone users when they feel that their phone is ringing when it is actually not, and NMP score was significantly higher in this group than when PRS was absent. In a previous study by the first author (Khilnani AK et al), the prevalence of PRS was found to be 54.4%, which is almost similar to this study.[14]

Perceived impact of mobile phone use on daily life of individual user was also studied. We found that 241 respondents (72.80%) felt that their mobile phone use was consuming time and affecting their other daily activities and their average NMP score was significantly higher than those who did not feel so (p = 0.001). In a study from Bangalore, 43% participants felt that mobile phones had severe adverse effects on their study and academic achievement.[8]

We also enquired about some physical symptoms that the participants related to their mobile phone use (Table 3). 127 (38.3%) respondents felt that they had sleep disturbance because of mobile phone. Similarly, 114 (34.4%) individuals had straining of eyes because of prolonged mobile phone use. The less common symptoms were shoulder/neck/back pain (18.1%), headache (17.8%), watering of eyes (12%), fatigue (10.8%) and wrist pain (10.5%). Bilateral wrist pain due to prolonged use of smartphone was described as 'WhatsAppitis' in a 34-year-old emergency medicine physician in 2014 by Fernandez-Guerrero IM.[1]

CONCLUSION

Nomophobia is an emerging adverse effect associated with mobile phone use. It is prevalent in all age groups and varied geographical locations and is associated with prolonged use of mobile phones. Early intervention for such unconventional problematic entity, in the form of lifestyle changes and promoting the judicious use of mobile phones, is required to avoid dependency and addiction of mobile phones and its adverse effects on individual's health.

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