

Association of Nomophobia with Decision Making of Dental Students

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ABSTRACT

Objective: With recent advancement in technology, generation Z has become addicted to gadgets, particularly smartphones. The fear of being separated from mobile phones, is known as Nomophobia. The aim of our study was to ascertain whether nomophobia and/or problematic mobile phone use has any influence on decision-making of undergraduate dental students.

Methodology: A descriptive, cross-sectional study was conducted on dental students of Pakistan. The level of nomophobia was determined using the Nomophobia Questionnaire (NMP-Q), Mobile Phone Problematic Use Scale (MP-PU), and the decision-making skills of dental students was determined using the Melbourne Decision Making Questionnaire (MDM-Q).

Results: The mean score of the NMP-Q was 102.49 ± 11.07 , and the mean score of MP-PU Scale was 83.45 ± 17.82 . Positive correlation was present between the measure of mobile phone problematic use scale and nomophobia. Similarly, positive correlations were discovered between nomophobia and the measure of buck-passing, procrastination and hypervigilance in regard to decision-making. As for the MDM-Q scale, the procrastination measure had a high correlation with the decision-making value.

Conclusion: The results of our study suggest an increasing prevalence of nomophobia among dental students of Pakistan.

Keywords: Smartphone; Nomophobia, Decision making, Dental student

INTRODUCTION

In the recent era of technology, smart phones have become a mandatory tool of routine life. Individuals are depending on mobile phone for their multiple social and professional life activities such as social networking, scheduling appointments, searching information and emailing¹. The advancement in mobile applications has changed the dynamics of human behavior and environment by assisting in dietary plans, drug dosage, physical activity, disease diagnosis and management. This uptake allows the individuals to meet their needs for individual capacity, safety, learning and social cohesion².

However, the excessive or problematic use of these electronic devices is positively correlated with addictive behavior. Moreover, this behavioral disorder is manifested by anxiety, restlessness, anger, irritability, stress, nervousness, emotional instability, sleep disorder and depression. Researchers have identified a new phobia that is caused by fear of being separated from mobile phones, is known as Nomophobia. This term was coined in 2008 by UK post office during a study to investigate anxieties among mobile phone users³. This term is an abbreviation of the "no mobile phone phobia". Researchers have described some characteristics of a person with nomophobia which include avoidance of places where mobile phone is prohibited and lack of social connectedness. Furthermore, they feel anxious when mobile is not available, out of battery or out of balance with habit of compulsive phone checking⁴.

Several studies have explored that people with nomophobia lack attention to detail and have a hard time performing routine tasks due to the fear of not being able to access information, communicate and loss of convenience.

In addition, nomophobia increases stress and anxiety that results in poor academic performance of university students. In the same regards a study has manifested a positive relation between nomophobia and compromised professional performance⁵. As for medical students, studies indicated correlation between poor academic performance and nomophobia. For medical and dental professionals, decision making is an important process which involves the compilation and interpretation of information⁶. During clinical practice mobile phones are a source to collect information, take notes and calculate drug dosage. However smart phone addiction has resulted in decrease concentration span, poor communication skills and maladaptive coping strategies. Moreover, this psychological and physical dependency can have serious repercussions in the form of compromised professional skills as well as poor quality of treatment. In clinical setting this could lead to low self-confidence, neglecting essential tasks and loss of critical clinical information which are prerequisite for decision making skill. Moreover, behavioral addiction has been described in seven signals which are in correspondence with nomophobia. In the same regard, nomophobia has shown a decline in intellectual thinking which is a standard for problem solving and critical thinking.

The prevalence of this new phenomenon has been explored in several studies among nurses, university students and medical residents⁷. Regarding mobile phone addiction and academic performance of dental students, a study has showed that mobile phone overuse negatively affects the academic performance. However, none of the studies has explored the influence of nomophobia upon decision making skills of dental students and dental residents.

This study aims to determine the impact of nomophobia on decision making skills of dental students and dental professionals.

MATERIALS AND METHODS

Study Design: A descriptive, cross-sectional study was carried out at Dental College, University college of Medicine and Dentistry during September-November 2021. to determine the association of problematic mobile phone use with decision-making in dental students and faculty members of different dental institutes. Ethical approval was taken from the institute's ethical review board before data collection.

Inclusion criteria: a) Participants above 18 years of age of any gender b) students enrolled in the undergraduate dentistry program at different dental institutes.

Exclusion criteria: a) incomplete surveys

Data Collection tools: The data was collected by using a structured questionnaire as in previous research. The survey comprised of three parts. The first part encompassed demographic data (sex, age, marital status, institute, undergraduate or faculty member). The second part measured the level of nomophobia in dental students by using a pre-validated nomophobia questionnaire (NMP-Q). The replies were graded on a Likert-type scale of 1 to 5, with 1 denoting "totally disagree" and 5 denoting "absolutely agree." The total score was derived by summing all of the replies' scores, yielding a range of 20 to 140 points. The higher the score, the more severe the individual's nomophobia is. Cronbach's alpha score of 0.945 was used to determine the questionnaire's reliability. The third section dealt with an individual's decision-making process. To determine decision-making abilities, the Melbourne Decision Making Questionnaire was employed (Mann et al., 1998). This questionnaire asked 22 questions on four separate variables: "buck-passing" (6 questions; maximum points 12), "vigilance" (6 questions; maximum points 12), "procrastination" (5 questions; maximum points 10) and "hypervigilance" (5 questions; maximum points 10).

Procedure: The researchers used Google Forms to create an e-Questionnaire using the NMP-Q scale, which made it easier for students to provide information. A brief URL or link was generated and sent to pupils through their school's electronic mail and Short Message Service to disseminate the e-Questionnaire (SMS). In the online survey method, students were only allowed to submit one answer. Between September 2021 and October 2021, data was gathered.

Data analyses: The accumulated data was transferred to the statistical software (SPSS) version 25. A non-parametric To compare the quantitative and qualitative variables, a non-parametric Mann Whitney U test was utilized. Spearman's correlation test was used to contrast the quantitative variables. A p value of <0.05 was considered significant.

RESULTS

Out of 200 students, 69.5% were females (n=139) and 30.5% were males (n=61). A total of 56% students were in the preclinical years (n=112) and 44% were from clinical years (n=44). The average mean age at which dental students started using smart phones was 15±7.78. The

mean screen time of dental students was 4.21±5.21 hours per day.

Nomophobia questionnaire (NMP-Q) and Mobile Phone Problematic Use Scale (MP-PU): After measurement, the score was as follows:

Table 1: Mean values, standard deviation and range of each domain of nomophobia

Domain	M ^α	SD ^β	Range
Giving up convenience	21.26	4.38	5-29
Not being able to access information	28.05	6.60	6-36
Losing connectedness	31.41	5.66	7-43
Not being able to communicate	21.33	8.23	6-36
Total	102.49	23.19	20-140

^α Mean

^β Standard Deviation

There was no statistical difference between genders. However, the state of nomophobia was statistically significant in pre-clinical years than in the clinical years.

Table 2: Mean values, standard deviation and range of each domain of The Mobile Phone Problematic Use Scale

Domain	M ^α	SD ^β	Range
Loss control	21.37	4.47	4-28
Abuse and excessive phone use	28.05	5.71	5-35
Tolerance	31.52	5.77	6-42
Social context induced craving	21.55	8.12	5-35
Total	83.45	13.08	26-120

^α Mean

^β Standard Deviation

Melbourne decision making questionnaire: Table 3 shows scores of decision-making skills of dental students. Male students had a significantly higher level of vigilance than female students. There was positive correlation found between nomophobia and hypervigilance, buck-passing and procrastination. There was no significant difference between age.

Table 3: Association between nomophobia (NMP-Q), the mobile phone problematic use scale (MP-PU) and Melbourne decision making (MDM-Q) questionnaire

Item		Buck-passing	Vigilance	Hypervigilance	Procrastination
Nomophobia	Rs	0.207	0.362	0.206	0.384
	P	0.337	0.027	0.022	0.003
Mobile phone problematic use scale	Rs	0.042	0.066	0.218	0.081
	p	0.214	0.488	0.025	0.217

DISCUSSION

Anxiety and stress that comes with decisional conflict is a principal determinant of failure to demonstrate quality decision making⁸. Moreover, some studies have demonstrated that smart phone addiction is related with problematic decision making which is similar to other substance as well as behavioral addiction⁹. Thus, the decisional conflict is a source of loss of self-esteem and reputation¹⁰. The aim of this study was to determine a

correlation between nomophobia and decision making of dental students. Several previous studies have concluded that female students have higher level of nomophobia than male students¹¹⁻¹³. The result of our study is in line with previous literature. However, there are few studies that support the opposite; male students suffering from nomophobia more than female students¹⁴. There is no substantial literature to explore the reason behind this difference in gender.

In regards to age, our results indicate that older students have lesser score of nomophobia. These results are similar to previous literature and is backed by several studies^{15, 16}. Studies have suggested that younger age people are more socially introverts and they tend to refrain from socialization and spend more time on smartphones¹⁷, whereas, with increase in age and maturity, people tend to start living in the moment and spend more time in practical life³.

In addition, our study suggests a positive correlation between nomophobia and poorer decision making of individuals. Problematic phone use is linked with sleep deprivation, wastage of time and energy and negligence of duties. These traits in turn affect decision making power of individuals¹⁸. Dentistry is a field that requires vigilant decision making and extreme levels of conscientiousness. Any error on the dentist's part can have serious consequences.

CONCLUSION

Excessive use of mobile phone in dental college may have detrimental consequences on individuals especially in their decision-making skills. Thus, smartphone usage in dental college should be limited.

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