



RESEARCH ARTICLE

MOBILE USAGE AMONGST MEDICAL AND PARAMEDICAL STUDENTS: AN INSTITUTION BASED STUDY

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ABSTRACT

Introduction: Today, Indians and especially the youth are increasingly using the mobile as a means of communication with their near and dear ones as well as with their professional contacts. However, concerns continue to be raised about the widespread potential adverse health impacts associated with their use.

Material and methods: A cross sectional study was conducted amongst medical and paramedical students of a Health institute to study mobile phone dependence among the study subjects.

Results: 159 out of 270 were aware of the documented increased risk of cancer with high mobile usage. Out of the 270 responders, 143 had experienced eye strain and headache was noted by 122. It was significant that 33% of the responders perceived themselves as nomophobic.

Conclusion: The results from our study are indicative that nomophobia is an emerging problem of the modern era. It is necessary to raise awareness about nomophobia by informing students, parents, teachers and psychological counsellors.

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INTRODUCTION

According to Oxford dictionary one of the earliest uses of the word 'mobile' was in association with the Latin phrase 'mobile vulgus' i.e. excitable crowd. Today's mobile phones sure live up to this origin (Dixit *et al.*, 2010). A mobile phone is a portable telephone that can make and receive calls over a radio frequency carrier while the user is moving within a telephone service area (Dixit *et al.*, 2010). The first handheld mobile phone was demonstrated by John F. Mitchell and Martin Cooper of Motorola in 1973, using a handset weighing c. 4.4 lbs (2 kg). In addition to telephony, the modern era mobile phones which are now referred to as smartphones, support a variety of other services, such as text messaging, MMS, email, Internet access, short-range wireless communications (infrared, Bluetooth), business applications, gaming, and digital photography (Dixit *et al.*, 2010).

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Since 2000, when the first camera phone was introduced, the number of mobile users has quintupled. By 2020, there will be 5.5 billion mobile users, representing 70 percent of the global population (Arumugam, 2014). Today, like populace the world over, Indians and especially the youth are increasingly using the mobile as a means of communication with their near and dear ones as well as with their professional contacts. These devices have proved to be lifesaving in certain circumstances in instances such as mishaps and after accidents and helped to improve the quality of life (Babu Santhalingam). However, concerns continue to be raised about the widespread potential adverse health impacts associated with their use. In addition to the physical harmful effects, the use of mobiles has also been documented to affect social and mental aspects. Nomophobia literally means "no mobile phobia;" that is the fear of being out of mobile phone contact (Arumugam, 2014). With this background in mind, our study was undertaken to describe patterns of mobile phone usage and associated effects on health including nomophobia in the Indian youth scenario

considering the tremendous increase in the number of mobile phone users in the past decade.

MATERIALS AND METHODS

A cross sectional study was conducted amongst medical and paramedical students of a Health institute. Over 270 students of the university met the inclusion criteria of which, systematic random sampling was done. A pre-designed and pre-tested questionnaire suitable for local conditions was designed to study mobile phone dependence among the study subjects. After getting the ethical clearance and official permission from the respective college authorities, the questionnaire was administered in a classroom. The data were collected to elicit information on demographic and psychographic aspects of the respondents. The demographic variables included age, gender, education and residence. The psychographic variables included attitude towards usage of cellular phones, mobile phone dependence and associated anxiety. The questions focusing on nomophobia included : duration of having mobile phone with self; nervousness experienced when the cell phone battery is almost exhausted, work getting missed due to preoccupation with mobile, mobile usage in bathroom, carrying mobile to lectures, amount spent per month on recharge frequency and updating of phone, etc. The individual responses thus obtained were then compiled, processed and analysed to arrive at the results on various issues.

RESULTS

The faculty wise distribution of the respondents included 72(26.6%) students were from MBBS, 71(26.3%) each from BDS and nursing 56(20.7%) students from BPTH as seen in Fig 1.

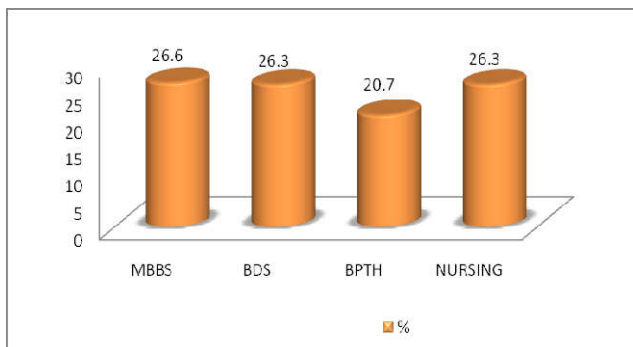


Fig.1. Cylindrical Bar Diagram Representing Faculty wise Students

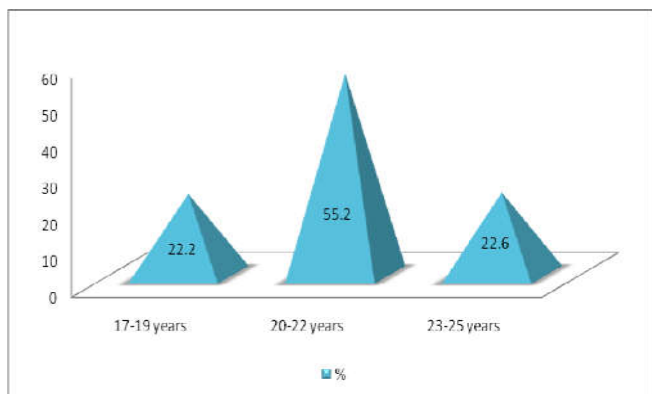


Fig.2: Pyramid Bar Diagram Representing Age wise Distribution in this study

In our study, the majority 149(55.2%) students were of the age group 20-22 years; while 60(22.2%) were in the age group of 17-19 years and 61(22.6%) were in the age group of 23-25 years as depicted in Fig. 2. A whopping number of 68.1% students responded that they use their mobile at night with 26.3% and 23% students using mobile phone during lectures and while driving respectively as shown in Table 1. When the data identifying perceived importance of mobile in the life was assessed, it was found that a 73.3% of the students considered mobile to a necessity. 58.9 % of the students also got anxious when the mobile showed low battery while 39.6% thought that they would not be able to survive a single day without mobile as shown in Table 2. 159 out of 270 were aware of the documented increased risk of cancer with high mobile usage. Out of the 270 responders, 143 had experienced eye strain and headache was noted by 122. It was significant that 33% of the responders perceived themselves as nomophobic as shown in Table 3.

DISCUSSION

At present there are not much larger studies or information about the mobile phone usage pattern and behavioural pattern on mobile usage among students of a health institute. The result of this study shows that 3.6% of the study subjects are addicted to mobile phone usage which made them to answer that it is not possible to live without mobile phone. A study conducted by Market Analysis and Consumer Research Organization (MACRO) in Mumbai to study the various patterns and association of mobile phone usage reported that 58% of the respondents could not manage without a mobile phone even for a day (Mortazavi, 2011). A whopping number of 68.1% students responded that they use their mobile at night with 26.3% and 23% students using mobile phone during lectures and while driving respectively in our study. These values are comparable with the study conducted among medical college students at Indore, in which 73% students responded that they keep their mobile phones with them even when they go to sleep (for 24 hrs. a day) and 18.5% students used mobile phones during college hours (Arumugam, 2014).

A study from United Kingdom on 2163 people revealed that 53% of the subjects tend to be anxious when they lose their mobile phone, run out of battery or credit or have no network coverage. The study found that about 58% of men and 48% of women suffer from the phobia, and an additional 9% feel stressed when their mobile phones are off. About 55% of those surveyed cited keeping in touch with friends or family as the main reason that they got anxious when they could not use their mobile phones (Gold et al., 2015). The present observations in this study are from a small group of students only, which may not reflect the scenario worldwide since millions of cellular mobile subscribers are added every month indicating that full blown nomophobia has all the possibilities to reach to the epidemic scale.

In reality these results give an alarming indication that as days goes by the youth is getting more and more dependent on mobile phones, which may lead to serious psychiatric (King, 2010) and psychological problems among the users. The study conducted in Poland randomly selected university students showed that 70% complained of headache and 20% of dizziness (Bhatia, 2008). In our study, out of the 270 responders, 143 had experienced eye strain and headache was noted by 122.

Table 1. Faculty wise distribution of students using mobiles at night, during lectures and while driving

	No of students using mobile at night	No of students using mobile during lectures	No of students using mobile during driving
MBBS	52	23	19
Nursing	46	18	20
BDS	50	18	14
BPTH	36	12	9
Total number of students	184	71	62
% out of sample studied	68.1	26.3	23

Table 2. Faculty wise distribution of students showing the perceived importance of mobile in the life of the students

	No of students who consider mobile as a necessity	No of students who get anxious when mobile has low battery	No of students who say they cannot survive without mobile even for a day
MBBS	50	52	30
Nursing	51	40	31
BDS	56	40	27
BPTH	41	27	19
Total number of students	198	159	107
% out of sample studied	73.3	58.9	39.6

Table 3. Faculty wise distribution of students showing awareness about health hazards associated with mobile use

	MBBS	Nursing	BDS	BPTH	Total number of students	% out of sample studied
Get Agitated when cell not in sight	43	39	48	31	161	59.6
Hard time in getting work done	31	24	30	20	105	38.8
Self perceived Nomophobic	24	26	27	15	92	34
Eye Strain	38	37	43	25	143	53.9
Headache	35	33	31	23	122	45.1
Ear ache	13	13	12	7	45	16.6
Impaired Concentration	28	23	23	17	91	33.7
Sleep Disturbances	26	24	25	9	84	31.1
Signs of fatigue	16	16	22	14	68	25.1
Aware about Risk of Cancer/ Tumors	50	43	38	28	159	58.8
Aware about Specific Absorption Rate values	23	30	22	15	90	33.3

A study by the London School of Economics found that banning mobile phones in schools could increase pupils' academic performance, providing benefits equal to one extra week of schooling per year (Krajewska-Kulak *et al.*, 2012). Söderqvist *et al* recently reported that in Sweden, the most frequently self-reported complaints associated with mobile use were fatigue, stress, headache, anxiety, concentration difficulties and sleep disturbances (Toda *et al.*, 2006). The effect of mobile phone radiation on human health is the subject of recent interest and study, as a result of the enormous increase in mobile phone usage throughout the world.

Mobile phones use electromagnetic radiation in the microwave range, which some believe may be harmful to human health. On 31 May 2011, the World Health Organization stated that mobile phone use may possibly represent a long-term health risk (Sato, 2010). Classifying mobile phone radiation as "possibly carcinogenic to humans" after a team of scientists reviewed studies on mobile phone safety (Khan, 2008). The mobile phone is in category 2B, which ranks it alongside coffee and other possibly carcinogenic substances (Choliz, 2010). Some recent studies have found an association between mobile phone use and certain kinds of brain and salivary gland tumors. Lennart Hardell and other authors of a 2009 meta-analysis of 11 studies from peer-reviewed journals concluded that cell phone usage for at least ten years "approximately doubles the risk of being diagnosed with a brain tumor on the same ('ipsilateral') side of the head as that preferred for cell phone use (Sahn).

Thus, the modern cellphone use is a paradox in that it can be "both freeing and enslaving at the same time. It is needed to identify the activities that push cellphone use from being a helpful tool to one that undermines our well-being and that of others (Kawasaki, 2006).

Conclusion

The results from our study are indicative that nomophobia is an emerging problem of the modern era. It is necessary to raise awareness about nomophobia by informing students, parents, teachers and psychological counsellors. Thus, it will be possible to fight against and eliminate the effects of nomophobia. Teachers and parents must have a system of controlled use of mobile phones and mobile learning practices and they must put a time limit for their children and students.¹⁵ Prevention is better than cure therefore health education strategies should be targeted towards the youth to prevent harmful effect of this great invention.

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