



Pattern of Smart Phone and Internet Usage among Medical Students in Surat, Gujarat – A Cross Sectional Study

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ABSTRACT

Background: Advent of mobile and internet has been most important technological advancement of the century. About 60 percent of internet users in India access internet via their smart phones.

Objective: To study the pattern of smart phone, internet usage, its perception and addiction among medical students.

Methods: Cross-sectional study, conducted among medical students of Government Medical College, Surat. A semi-structured proforma along with Young's Internet Addiction scale was used.

Results: Of 313 participants, 51.4% were male & 48.6% were female. Majority of them were using smart phone. Majority were using internet on smart phone. Social networking (65.2 %) was the most common purpose, 53.7 % using internet for 1 to 3 hours daily. About (48.6 %) felt addicted to internet. Porn was watched by 34.8 % on mobile; while 11.2 % feels addicted to watching porn material. According to Young's Internet Addiction scale, 59.1 % average online users, 23.3 % less than average online users, 17.3 % possible addict and 0.3 % addicted to internet.

Conclusion: Although some participants were using smartphone for academic literature search, majority were using it for social networking. About half of the participants felt addicted to internet.

Key words: Internet addiction, medical student, smart phone.

INTRODUCTION

One of the important technological advancement in the last few decades has been the advent of mobile.¹ Mobile phone, particularly internet enabled smart phones holds a great importance in today's world. A study by Kung (2012) shows that 66% of mobile phone users suffer from 'nomophobia': severe anxiety and panic due to being without a mobile phone. Since the introduction of Apple's iPhone in 2007, mobile phones are being gradually replaced by smartphones.² Globally, there were about 3.53 billion mobile internet users by April 2017.³ The number of mobile internet users in India has reached 371 million by June 2016, and is on track to cross 500 million users by next year.⁴

Mobile phone and internet usage have become universal practice especially among college

students. College students are unique population, occupying middle ground between childhood & adulthood, between work and leisure.⁵

Use of internet is a part of college students daily routine. It is integrated in to their daily communication habit. College students use internet nearly as much for social communication as they do for their education.⁶ Mobile phone usage has both pros and cons.¹ Medical students need to study throughout their MBBS syllabus for longer hours compared to other streams. On one hand, availability of smartphones very easily can hamper their concentration and learning process. But on the other hand, availability of e-text books, powerpoints of their study materials by smartphone also help a lot in study.⁷ In addition, its usage has also become an important public health problem as there have been reports of

plenty of health hazards, both physical and mental, in people of all age groups.¹There is lack of studies on medical students about the pattern of smartphone use. So our study will look into the matter and will evaluate the pattern of smartphone and internet usage among medical students.

OBJECTIVES

This research was conducted to study the pattern of smart phone, internet usage, its perception and addiction among medical students of Government Medical College, Surat

POPULATION AND METHODS

A present cross-sectional study was carried out in Government Medical College, Surat, to assess the pattern of smart phone and internet usage. The study population consisted of 313 medical students. Data was collected using semi-structured questionnaire. Prior to administering the questionnaire, verbal informed consent was obtained from the students. Students were addressed regarding the purpose of study and the way of filling questionnaire. Questionnaire was anonymous to increase the participation and reduce the respondent bias. Questionnaire elicited information about demographic profile of students and pattern of smart phone and internet usage. Variables studied were, type and cost of smart phone, time and money spent on internet use, purpose of mobile internet use and its effect on their studies. Young's Internet Addiction scale, a likert based scale was used to find out prevalence of internet addiction among medical students. Internet Addiction Test (IAT) is a reliable and valid measure of addictive use of Internet, developed by Dr. Kimberly Young. It consists of 20 items that measures mild, moderate, and severe level of Internet Addiction.⁸ Data were entered in MS Office Excel 2007 and analysed using SPSS version 20.

RESULTS

Demographic profile: In present study, among 313 medical students, 51.4 % were boys and 48.6 % were girls. About 45.4 % of the participants were of age below 18 years, 30.7 % were in the age group of 18-20 years, 23.6 % were in the age group of 21-23 years and only one (0.3 %) participant was of age more than 23 years. According the year of study, 29.7 %, 35.8 % and 34.5 % students were studying in the first, second and third year, respectively. [Table 1]

Pattern of smart phone usage: About 99.7 % of the study participants were using smart phone; major-

ity of study participants (28.3 %) were using Samsung brand, followed by Sony (12.5 %); about 8 % of the study participants were using Apple I phone. [Table 2]

Table 1: Demographic profile of study participants

Characteristics	Frequency (n=313) (%)
Age	
Less than 18	142 (45.4)
18-20	96 (30.7)
21-23	74 (23.6)
More than 23	1 (0.3)
Gender	
Male	161 (51.4)
Female	152 (48.6)
Year of study	
First	93 (29.7)
Second	112 (35.8)
Third	108 (34.5)

Table 2: Distribution of study participants according to brand of smart phone

Brand of smart phone	Frequency (n=313) (%)
Sony	39 (12.5)
Samsung	89 (28.4)
Nokia	15 (4.8)
Motorola	17 (5.4)
LG	10 (3.2)
Lenovo	13 (4.2)
Apple I Phone	25 (8)
Micromax	19 (6.1)
Others	85 (27.1)
Nil	1 (0.3)

Table 3: Pattern of internet usage among study participants (n=313)

Characteristics	Frequency (%)
Use of internet on mobile device	
Yes	307 (98.1)
No	6 (1.9)
Most common purpose of using internet	
Academic literature search	61 (19.4)
Social media sites	204 (65.2)
Gaming	18 (5.8)
Watching online movies and songs	26 (8.3)
Not answered	4 (1.3)
Time spent on internet usage daily	
Less than 1 hour	80 (25.6)
1 to 3 hour	168 (53.6)
4 to 6 hour	41 (13.1)
7 to 9 hours	10 (3.2)
More than 10 hours	10 (3.2)
Not answered	4 (1.3)
Money spent on mobile internet usage monthly	
<200	156 (49.8)
200-500	120 (38.4)
501-1000	23 (7.3)
>1000	4 (1.3)
Not answered	10 (3.2)

Table 4: Perception about internet usage among study participants

Perception about internet usage	Boys (n=161)(%)	Girls (n=152)(%)	Total (n=313)(%)
Feel addicted to internet			
Yes	74 (45.9)	78 (51.3)	152 (48.5)
No	87 (54.1)	74 (48.7)	161 (51.5)
Impaired academic performance			
Yes	70 (43.4)	61 (40.1)	131 (41.8)
No	91 (56.6)	91 (59.9)	182 (58.2)
Improved academic gain			
Yes	130 (80.7)	110 (72.3)	240 (76.6)
No	31 (19.26)	42 (27.7)	73 (23.4)

Table 5: Behaviour of students about porn material

Characteristics	Boys (n=161)(%)	Girls (n=152)(%)	Total (n=313)(%)
Watch porn materials on mobile			
Yes	101 (62.7)	8 (5.2)	109 (34.9)
No	60 (37.3)	144 (94.8)	204 (65.1)
Addicted to porn watching			
Yes	35 (21.7)	0 (0.00)	35 (11.2)
No	126 (78.3)	152 (100)	278 (88.8)
Porn affect study			
Yes	20 (12.4)	3 (1.9)	23 (7.3)
No	141 (87.6)	149 (98.1)	290 (92.7)

Table 6: Young's internet addiction scale

Scale	Boys (n=161)	Girls (n=152)	Total (n=313)
Less than average users	23 (14.3)	50 (32.9)	73 (23.4)
Average online users	97 (60.2)	88 (57.9)	185 (59.1)
Possible addict	41 (25.5)	13 (8.7)	54 (17.2)
Addict	0 (0.0)	1 (0.5)	1 (0.3)

Figure in parenthesis indicate percentage.

Regarding cost of smart phone, about half of the participants (49.2 %) were using smart phone costing between 5000 to 15000 rupees; about one fourth (27.5 %) of participants were using smart phone costing from 16000 to 25000 rupees. Only 5.8 % were using smart phone costing more than 51000 rupees.

Pattern of Internet Usage: About 98.1 % of study participants were using internet on their smart phone. Majority (65.2 %) students used internet for social networking while 5.8 % played online games and 8.3 % watched online movies and songs. Only 19.5 % mentioned academic literature search as main purpose of internet use on mobile phones. [Table 3]

Time and money spent on internet: About half (53.6 %) of the participants used internet daily for 1-3 hours and about 20 % of the participants used internet for more than 3 hours. Near about 40 % of the participants spent 200 - 500 rupees monthly for internet use on their smart phone. [Table 3]

Perception about internet usage: About 45.9 % of the boys and 51.3 % of the girls felt addicted to internet; about 43.4 % of the boys and 40.1 % of the girls perceived that usage of internet impairs their academic performance; about 80.7 % of the boys and 72.3 % of the girls felt that usage of internet has improved their academic gain. [Table 4]

Porn watching and addiction: About 62.7 % of the boys and 5.2 % of the girls watched porn material on their mobile. 21.7 % boys were addicted to watch porn material on their mobile. About 12.4 % boys and 1.9 % girls stated that watching porn affects their study. [Table 5]

Young's Internet addiction scale: According to Young's Internet addiction scale, users were divided into four groups: 59.1 % as average users, 17.1 % as possible addicts, 0.3 % as addicts, and in 23.5 % of medical students' internet usage was less than average user. [Table 6]

DISCUSSION

A number of studies have been conducted across the world, especially among adolescents with respect to internet addiction. Our study was a preliminary step toward understanding the pattern of smart phones and internet usage among medical college students studying in Government Medical College, Surat.

Demographic characteristics

In our study, about 51.4 % participants were boys and 48.6 % participants were girls. In the study of Unnikrishnan B et al (2008), carried out among medical students in Coastal South India, 56 % participants were boys and 44 % participants were girls.⁶ In contrast, in the study of Srijampana et al (2014), carried out in two different medical colleges of Guntur, Andhra Pradesh, female participants were more (57.2 %) as compared to male (42.8 %).⁹

In the current study, majority of participants (99.7 %) were of age less than 23 years, only 0.3 % participants were of age more than 23 years. In the study of Unnikrishnan B et al, 84.8 % of study participants were of age less than 24 years and about 15.2 % participants were of age more than 24 years.⁶ Probable reason for the difference in the socio-demographic characteristics in this study and other studies might be the difference in the study setting.

Pattern of Smart Phone Usage

In this study, 99.7 % participants were using smart phones; with majority of using Samsung brand (28.3 %), followed by Sony (12.5 %), Nokia (4.8 %); and few participants were using Apple I phone (8 %). In the study of Dhara Prajapati et al (2014),

among medical students in Ahmedabad, majority of participants were using Samsung brand (45.45 %), followed by Nokia (18.48 %), Micromax (9.39 %), Sony (5.15 %); about 8.48 % participants were using Apple I phone.¹ In the study of Nasiru A Ibrahim et al (2014), among medical students in Sub Sahara Africa, majority of participants (58.5 %) were using smart phone of Blackberry brand, followed by Nokia (21.1 %), Samsung (3.3 %); 5.5 % participants using Apple I phone.¹⁰

Regarding cost of smart phone, about half of the participants (49.2 %) were using smart phone costing from 5000 to 15000 rupees; about one fourth (27.5 %) of participants were using smart phone costing from 16000 to 25000 rupees. About 5.8 % were using smart phone costing more than 51000 rupees. Similarly, in the study of Dhara Prajapati et al, about 60 % of the participants were using smart phone costing between 5000 to 20,000 rupees and about 15 % participants using smart phone costing more than 30, 000 rupees.³ Reason for similar finding in this study and in the study of Dhara Prajapati et al might be the similarity in the study setting, as both the studies have been carried out among the medical students of different Government Medical Colleges of Gujarat.

Pattern of Internet Usage

In this study, 98.1 % participants were using internet on their smart phones. Similarly, in the study conducted by Aggrawal Sumit et al (2015) among medical students at Government Medical College, Akola, 97.02 % participants were using internet enabled mobile and 94 % participant were using internet on their mobile phones.⁵

Regarding most common purpose of using internet in current study, 65.2 % participants mentioned social networking, about 19.5 % have mentioned academic literature search, 8.3 % were watching online movies & songs and 5.8 % were mentioned playing online games. In the study of Aggrawal Sumit et al, 81.55 % participants accessed social sites, 76.79 % participants' accessed academic literature and 13.10 % participants accessed pornographic material on internet.⁵ In the study of Abhishek Ghosh et al (2016), carried out among medical students of College of Medicine & JNM Hospital, Kalyani, Nadia, West Bengal, 124 students (51.02%) responded Social networking as their most frequent activity. 35 students (14.4%) used smart phone mostly for gaming, listening songs was most favorite activity for 53 students (21.81%). 4 students (1.64%) liked to watch and download videos most. 27 students (11.11%) mostly used their phones for academic purpose and eBook reading.⁷

Time and money spent on internet:

In this study, about quarter of participants (25.6 %) spent less than one hour daily, about half of the participants (53.6 %) spent one to three hours daily, and about 20 % participants spent more than three hours daily on internet usage. Similarly, in the study of Aggrawal Sumit et al, about 20 % of participants spent less than one hour daily, about 60 % participants spent one to four hours daily and about 20 % participants spent more than four hours daily on internet usage.⁵ In this study, about 8.6 % of the participants were spending more than 500 rupees on mobile phone internet usage while in the study of Dhara Prajapati et al, about 23.6 % participants spending more than 500 rupees on internet usage.¹

Perception about internet usage:

Usage of internet enabled smart phone among students may cause both positive as well as negative impact among students depending upon the usage of smart phone. In this study, about 45.9 % of the boys and 51.3 % of the girls felt addicted to internet; about 43.4 % of the boys and 40.1 % of the girls perceived usage of internet impaired their academic performance and about 80.7 % of the boys and 72.3 % of the girls felt usage of internet has improved their academic gain. In the study of Abhishek Ghosh et al, about 19.75 % students reported improved performance, 35.81 % reported deteriorating performance while 44.44 % reported usage of internet and smart phone doesn't have any effect on academic performance.⁷ In contrast, in the study of Arwa Jamal et al, carried out among female medical students at Taibah University, Madinah, Saudi Arabia, about 13.3 % of the participants reported that internet enabled smart phone impaired their academic performance.¹¹

Behaviour about porn watching:

Availability of internet on mobile phones gives opportunity to search different social media sites as well as pornographic sites. Sometimes, students may not have control in watching porn sites due to easy availability. This kind of behaviour may ultimately affect their academic performance. About 62.7 % boys and 5.2 % girls watched pornographic material on their mobile, about 21.7 % boys felt addicted to watch pornographic material. About 12.4 % boys and 1.9 % girls' felt that watching pornographic material affect their academic performance. In contrast to this study, about 29.33 % males whereas no female accessed pornographic material in the study of Agrawal Sumit et al.⁵

Young's Internet addiction scale:

In our study, according to Young's Internet addiction scale, 59.1 % as average users, 17.1 % as possible addicts, 0.3 % as addicts, and in 23.5 % of medical students' internet usage was less than av-

erage user. In the study of Srijampana et al, 23.2 % participants were less than average online users, 64.4 % were average online users, 11.8 % were possible addicts, and in 0.4 % of medical students were addicts.⁹ In our study prevalence of internet addiction was 0.3 % which was in accordance with the studies done by Srijampana et al ⁹, Goel et al ¹² and Xie et al ¹³. In contrast to our results, a study done by Ghamari et al ¹⁴, among Iranian medical students, shown the overall prevalence of internet addiction was 10.8% and similar findings were observed in the study done by Siomos et al ¹⁵, on Greek adolescent students, where the prevalence rate was 8.2%.

CONCLUSION

Although some participants used smart phone for academic literature search, majority of them used it for social networking. Availability of high speed internet on mobile phones may be the reason for spending more time on social network websites. More than half of the boys and few girls watched porn material on their smart phones. About one fifth of the boys felt themselves addicted to internet.

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