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Original Research Article

Prevalence and pattern of internet addiction among medical students in Nagpur, Maharashtra

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ABSTRACT

Background: Internet has become an integral part of our life and internet addiction is a growing problem affecting many spheres of our lives. Considering the potential negative effects of internet addiction on health this study aims to study the prevalence and pattern of Internet addiction among medical students by using Internet Addiction Test in Nagpur.
Methods: The cross-sectional study was conducted in 488 medical students in year 2016. Data was collected by using semi structured proforma including socio-demographic variables and Young's 20-item Internet Addiction Test (IAT) questionnaire. Statistical analysis done by Epi info 7.1 and SPSS (20).
Results: Prevalence of internet addiction by using Young's original criteria was 3.68%. Internet addiction was significantly more common in males than females ($p<0.05$). This study reveals that according to IAT score, (61.47%) were average users, (34.83%) were possible addicts and (3.68%) were addicts. Chi square test is applied between average users and addicts, was found to be statistically significant ($p<0.01$). There was no statistically significant difference in the mean of total IAT scores between male and female students ($p=0.27$) and F statistics is applied between mean value of three groups (i.e. Average users, Possible addict and addict) was found to be statistically significant (<0.0001).
Conclusions: Prevalence of internet addiction was 3.68% with male predominance indicate that internet addiction is growing problem. Prevalence of possible addict was also alarming which was 34.83%. Early recognition of internet addiction and appropriate preventive measures should be taken.

Keywords: Prevalence, Pattern, Internet addiction test, Medical students

INTRODUCTION

There has been an explosive growth of internet usage in India and worldwide.[1] This is expected to continue with its use becoming an integral part of everyday life.[2] In the four decades since its inception, the internet has driven dramatic change. It has enabled flow of information, including entertainment, news, financial and academic material.[3] There have been growing concerns worldwide for what has been labelled as "Internet addiction." The term "Internet addiction" was proposed by Dr. Ivan Goldberg in 1995 for pathological compulsive internet use.[4,5] Griffiths (1998) considered Internet addiction to be a kind of technological addiction (such as computer addiction) and one in a subset of behavioural addiction (such as compulsive gambling). Kandell (1998) defined Internet addiction as "a psychological dependence on the Internet, regardless of the type of activity once logged on". He stated that college students as a group appear more vulnerable in developing a dependence on the Internet than any other segment of society, because

college students have a strong drive to develop a firm sense of identity, to develop meaningful and intimate relationships, usually have free and easily accessible connections, and their Internet use is implicitly if not explicitly encouraged.[6] People who develop problems with their Internet use may start off using the Internet on a casual basis and then progress to using the technology in dysfunctional ways.[7] The understanding that the internet use can be a disorder is still in its initial stages in India. Although development of Internet addiction concept is still in its infancy and academic investigations are few in number. There are very few studies estimating how common the issue of internet addiction is in India. So this study aims to study the prevalence and pattern of Internet addiction among medical students by using Internet Addiction in Nagpur, in Maharashtra.

METHODS

A cross-sectional study was conducted among medical students in Nagpur. The study duration was Jan to June 2016. This medical college covered total 600 students. Medical students between age group of 18-24 years, both male and female, those who were using internet since last 6 months were included in this study. Written informed consent of each participant was taken. Those who didn't give valid consent and those who were not using internet were excluded from this study.

The sample size was calculated by assuming prevalence of Internet addiction as 50% (because the exact measure of prevalence of internet addiction from studies in medical students which were using a similar rating scale was not available) and for a 95% confidence level and 5% absolute precision of the estimate. A 30% non-response error was considered.[1]

Data collection was done after approval of Institutional Ethical Committee. Data collection was done during posting hours by using predesigned and pretested questionnaire including details of socio-demographic data such as age, sex, year of study, socioeconomic status etc. and internet addiction test (IAT; Young 1998) questionnaire, which is a 20-item 5-point Likert scale that measures the severity of self-reported compulsive use of the internet.[8] Total internet addiction scores are calculated with possible scores for the sum of 20 items ranging from 20 to 100. The scale showed very good internal consistency, with an alpha coefficient of 0.889 in the present study.[1]

According to Young's criteria, total IAT scores 20-49 represent average users with complete control of their internet use, scores 50-79 represent over-users with frequent problems caused by their internet use and scores 80-100 represent internet addicts with significant problems caused by their internet use.

Statistical analysis was done by using Epi info 7.1 and SPSS 20. Descriptive statistics were used to describe socio-demographic variables. Chi square test is used to compare average users with possible addict group and with addict group. For quantitative variables t- test was used for comparing means of total IAT score among male and female students. And f- statistics was applied to compare means of total IAT score between three groups i.e. average users, possible addict and addict. For all analysis level of significance was set as $p<0.05$.

RESULTS

The study questionnaire was administered during posting hours and responses were obtained from 488 medical students.

Table 1: Distribution of study subjects according to sociodemographic characteristics.

		Number n =488	%
Gender	Male	275	56.35
	Female	213	43.65
Year of medical study	First	110	22.55
	Second	140	28.68
	Third	168	34.42
	Intern	70	14.35
Socioeconomic status	Upper (I)	300	61.48
	Upper middle (II)	164	33.62
	Lower middle (III)	16	3.27
	Upper lower (IV)	8	1.63

The mean age of the students was 20 years. Among these students 275 (56.35%) were males and 213 (43.65%) were females. The subjects belonged to First to Final MBBS and interns. Most of the students were from Third MBBS (34.42%) followed by second MBBS (28.68%), first MBBS (22.55%) and only (14.35%) were interns. Socioeconomic status is classified according to BG Prasad Scale. Majority were belonged to upper class (61.48%) followed by upper middle class (33.62%), lower middle class (3.27%) and least were from upper lower class (1.63%) (Table 1).

Using Young's original criteria, IAT score was calculated. Depending on the IAT score, the internet users were divided into groups such as average users (61.47%), possible addicts (34.83%) and addicts (3.68%). Prevalence of internet addiction was found to be significantly more among male student (5.45%) as compared to female students (1.40%). (Chi square value is 5.16 and p=0.02). The prevalence of possible addict is also alarming. Total prevalence was 34.83%. It is more in males (36.36%) as compared to females (32.87%). Average users were considered as baseline and compared with possible addict by applying Chi square test, p value

was not found to be statistically significant (p=0.2) and also compared with addict P value found to be statistically significant (p<0.01) (Table 2).

Mean value of total IAT score for male student is 50.71±14.05 and mean value of total IAT score for female student was 52.01±10.91. After applying t statistics means of total IAT score between male and female students was not found to be statistically significant (p<0.27) (Table 3).

Mean IAT score of average user was (41.18±4.57), of possible addict was 57.25±5.56 and of addicts it was 87±5.73, after applying F statistics mean value between three groups was found to be statistically significant (<0.0001) (Table 4).

Table 2: Gender wise distribution of pattern of internet addiction according to IAT score.

Score	Pattern	Males n (%)	Females n (%)	Total n (%)	Chi square value	P values
20-49	Average on line user	160 (58.19)	140 (65.73)	300 (61.47)	Ref	Ref
50-79	Possible addict	100 (36.36)	70 (32.87)	170 (34.83)	1.31	0.2
80-100	Addict	15 (5.45)	3 (1.40))	18 (3.68)	6.17	0.01*
Total		275 (100)	213 (100)	488 (100)		

*p value <0.05 is considered as statistically significant.

Table 3: Gender wise distribution of means of total IAT score.

	mean	SD	t statistics	P value
Male students	50.71	14.05	1.09	0.27
Female students	52.01	10.91		

Table 4: Distribution of means of IAT score.

	Total	Mean	SD	F statistics	P value
Average users	300	41.18	4.57	27885.2	0.0001*
Possible addicts	170	57.25	5.56		
Addicts	18	87.00	5.73		

*p value is statistically highly significant.

DISCUSSION

India is a developing country there is embracing technological growth at a pace faster than ever. Internet has become an integral part of our life and internet addiction is a growing problem affecting many spheres of our lives and it is one of the problems emerged with the development of technology.

Mean age of students in our study was 20 years. A study conducted in professional students by Sharma et al 2014 reported mean age was 19.02, which was similar to our study.[15] Goel et al in 2016 in which the mean age of adolescents was 16.82, which was lesser than our study.[9]

Excessive use of internet is one of the major problems in today's society. Therefore, several studies have been conducted in different age groups to determine the prevalence of internet addiction.

Prevalence of internet addiction in our study was 3.68%. In Iranian study conducted by Saheli in 2014 prevalence of internet addiction was reported to be 5.2%, which supported our findings.[13] A study conducted by Srijampana et al, in 2014 found very less prevalence which was 0.42% and Setty et al, did not find any students with severe internet addiction.[3,10] Several studies have reported higher prevalence of internet addiction viz Ghamari et al and Tang et al, 10.8% and 6.0% respectively.[11,12]

The findings of this study suggest that there was a significant difference between gender and internet addiction which corroborates with the previous studies stating that addiction were more common in males than in females.[9,11,13] however, the Internet usage levels of females have increased in recent years.[14]

The students in different fields have different requisites of electronically scientific resources; therefore, we evaluated internet addiction among 488 medical students in the four stages of education including first, second, third MBBS students and interns.

Using young's original criteria the internet users were divided into three groups. 61.47% were average online users, 34.83% were possible addicts and 3.68% were addict. In Goel et al, study using Young's original criteria 74.5% internet users were moderate users, 24.8% were possible addicts and 0.7% were addicts.[9] In Sharma et al,

study (IAT scoring) 57.3% were normal users, 35.0% were mild, 7.4% were moderate and 0.3% were severely addicted to Internet.[15] While study conducted by Setty et al, 70% of students were average online user and 20 percent were experiencing frequent problems because of internet and did not find any student with severe internet addiction.[10]

Study conducted by Srijampana et al, reported 64.4% as average users, 11.8% as possible addicts, 0.4% as addicts, and 23.2% were less than average user.[3] Hashemian et al, found that 57.4% of all participants hadn't internet addiction and 43.6% had mild and moderate internet addiction.[8]

In this study means IAT score in male was 50.71 and female was 52.01. P value is 0.27 which implied that there was no difference in IAT scores across both genders. Similar results were seen in study which is conducted by Setty et al, in which the mean IAT score in males was 40.46 and the mean of IAT score in females was 38.2.[10] The T value is 0.535 which is not statistically significant.

In our study an interesting findings were noted with respect to the mean IAT score of three groups. Mean IAT score differ significantly between three groups (F-statistics=27885.2, p=0.0001).

This study's results imply that Internet addiction is a prevalent public health issue. Prevalence of Internet addiction was 3.68% with male predominance and prevalence of possible addict was also alarming which was 34.83%. We must learn to differentiate excessive internet use from addiction.

So early recognition of internet addiction and appropriate preventive measures should be taken and the need of the hour is to create awareness among the public.

Conducting research can utilize these findings to assess the prevalence and pattern of internet addiction among medical students.

Internet addiction test is easy and cost effective method to assess the internet addiction among the students studying professional courses.

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