Original Research Article

A study to assess internet addiction among undergraduate medical students of MMC&RI, Mysore

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ABSTRACT

Background: Developmental stressors, along with free access to Internet services, may contribute to college student's vulnerability to internet dependence. Research indicates that Internet addiction is often associated with depression, impulse control disorder, and low self-esteem. Medical students are a particularly vulnerable group on account of the time they spend on the internet. The objective of the study was to assess Internet addiction among undergraduate medical students of MMC&RI using Young's internet addiction test.

Methods: A cross sectional observational study was conducted among medical students of MMC&RI during the period from August to November 2015. A total of 236 students were included. Kimberly young's internet addiction test was used to assess the level of internet addiction.

Results: The mean age of the students was 20.6 years (SD 1.97). The mean duration of internet use was 4.4 years (SD 1.64) and the mean duration of internet use per day was 1.96 hours (SD 0.99). The prevalence of severe internet addiction, moderate internet addiction, and mild internet addiction were found to be 0.8%, 19.5% and 58.2% respectively.

Conclusions: There is a need to focus on mental health with regard to internet Addiction, as problematic internet use is increasingly being reported and younger Internet users are more at risk of becoming Internet addicts.

Keywords: Internet, Addiction, Assess, Students, Proportion

INTRODUCTION

Internet is a communication network of computers that has become an integral part of modern life. The past few years have witnessed great developments in Internet infrastructure, which have led to increased Internet usage among people of various age groups. However, increased Internet usage has been associated with some negative implications for some individuals. "Internet addiction" (IA) is one such negative consequence of excessive internet use among users.[1] It was Dr. Ivan Goldberg in 1995, who first proposed the term "Internet Addiction" for pathological compulsive Internet use. Internet can affect interpersonal, social, occupational, psychological,

and physical domains of the individual's life. There have been growing concerns worldwide for what has been labeled as Internet addiction and the potential adverse effects of excessive Internet use, especially in young people.[2] In India, there were about 462 million internet users in the year 2016 as compared to 100 million in 2010, so the internet penetration in India is 36.5% of the population.[3]

Internet addiction disorder (IAD), or more broadly Internet overuse, problematic computer use or pathological computer use, is excessive computer use that interferes with daily life.[4] Studies have suggested that, like other well researched addictive behaviors, Internet

addiction has an effect on many aspects of a person's life, including academic/work performance, relationships, and physical and mental health.[5]

Many researchers have reported on Internet addiction as a behavior-oriented addiction, a condition that involves withdrawal, tolerance, and preoccupation with the Internet.[6] The majority of existing and prospective Internet users are youth younger than 24 years, who are spending an increasing amount of their daily time online.[1]

Psychological and environmental factors in the lives of college students may leave them disproportionately vulnerable to internet addiction.[7,8] Developmental stressors, coupled with free access to Internet services, may contribute to college student's vulnerability to Internet behavior dependence.[9,10] Worldwide, several studies have focused on Internet behavior patterns in adolescents. However, there are few such studies in India and the present study aims to assess Internet addiction among undergraduate medical students.

Internet addiction test

Young's internet addiction test (IAT) is the first validated testing instrument for addictive use of the Internet whose psychometric properties have been tested by Widyanto and McMurran. The test was developed by Dr. Kimberly Young, which uses 20-item questionnaire that measures mild, moderate, and severe levels of addiction. This uses the 5-point Likert scale 1 to 5 where 1 is rare and 5 always.[1]

Objective

To assess internet addiction among undergraduate medical students of Mysore Medical College & Research Institute, using Young's internet addiction test.

METHODS

This cross sectional study was carried out among the undergraduate medical students from Mysore Medical College and Research Institute, Mysuru during the period from August to November 2015. A total of 236 students in the age groups of 18 to 25 years, having access to the Internet and using Internet for a minimum of 6 months were included. The study was conducted after obtaining the approval from the institutional ethics committee.

The students were assured about confidentiality of information and informed consent was taken for participation following a brief about the nature and purpose of the study. The data was collected by self-administering the questionnaire to the students, which consisted of two parts. First part recorded the demographic information including age, sex, year of study, duration of internet use, time spent on Internet per day and purpose of internet use. Second part was the Young's scale of internet addiction. The IAT is a 20 items, 6 point Likert scale with scores ranging from 0 to 5

for each item, which measures the severity of self-reported compulsive use of the internet. After all the questions have been answered, numbers for each response were summed up to obtain a final score. Total internet addiction scores were calculated, with possible scores for the sum of 20 items ranging from 0 to 100. A score of 0-19 was considered as no addiction/normal Internet usage, 20-49 points as mild addiction, 50-79 as moderate addiction and 80-100 as severe addiction.[5]

Sample size

A sample size of 236 was calculated using the formula $n=Z^2pq/d^2$ by considering the prevalence of moderate Internet addiction of 18.88% (p), with an absolute allowable error of 5% and Z=1.96 (95% level of confidence). Simple random sampling using student's attendance register as sampling frame was used for selecting sampling units.

Statistical analysis

Data were entered into MS excel and analyzed using SPSS statistical software (version 20.0). Frequencies and percentages were calculated for all the categorical variables. Mean and standard deviation were calculated for age, time spent using Internet. Association was tested using Chi-square test and t-test and a $p<0.05$ was considered as significant.

RESULTS

Of the 236 students, there were 148 (62.17%) males and 88 (37.29%) females with mean age of 20.6 years (SD 1.97). Undergraduate medical students of first (23.3%), second (22.2%), third (28.3%) and forth (26.2%) MBBS were including in the study (Table 1). On assessing the purpose of Internet use, majority of the students used Internet for social networking (25%), downloading media files (24.2%) and for other purposes (25.4%) (Figure 1).

Table 1: Frequency distribution of socio demographic characteristics of the study subjects.

Characteristics		Number of subjects N (%)
Age	≤18yrs	35 (14.83)
	>18yrs	201 (85.17)
Gender	Male	148 (62.71)
	Female	88 (37.29)
Year of study	First	55 (23.3)
	Second	52 (22.2)
	Third	67 (28.3)
	Forth	62 (26.2)

Majority of them (91.1%) were using internet since >2 yrs and about 41% of them had used Internet for >5 yrs. The mean duration of Internet use was 4.4years (SD 1.64). The mean duration of Internet use per day was 1.96 hours (SD 0.99). Majority of the participants used

Internet for <2 hrs in a day (75.4%) and only 2.1% of them used Internet for >5 hrs in a day (Table 2).
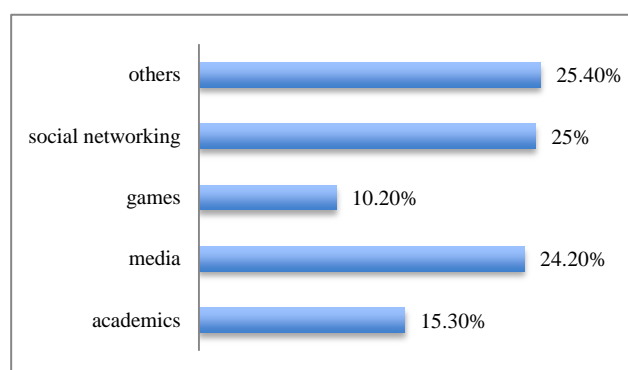

Figure 1: Purpose to access internet.

Table 2: Mean values of age of the participants and internet usage pattern.

| Variable	Mean	SD	Min	Max
Age of subjects (yrs)	20.6	1.977	18	25
Duration of internet use (yrs)	4.40	1.646	2	9
Duration of interne use per day (hrs)	1.95	0.997	1	6

As shown in Figure 2, the overall prevalence of severe internet addiction was found to be 0.8%. The internet addiction test revealed that 21.2% of the subjects were normal users, 19.5% had moderate addiction. Mild addiction was noted among 58.2% of the participants.

There was significant difference in the mean internet addiction score between males and females (Table 3). However, the prevalence of severe Internet addiction between the two genders was found to be the same.

Significant relationship was also found between time spent on using internet per day and Internet addiction. (Table 4) However, there was no association found between the severity of internet addiction and purpose of Internet access (p=0.601) and also between severity of Internet addiction and year of study (p=0.301).
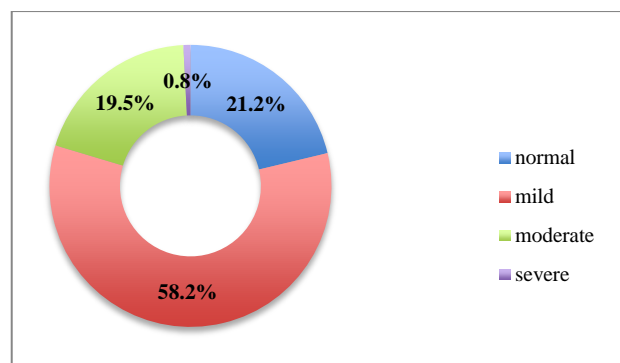
Figure 2: Grades of internet addiction.
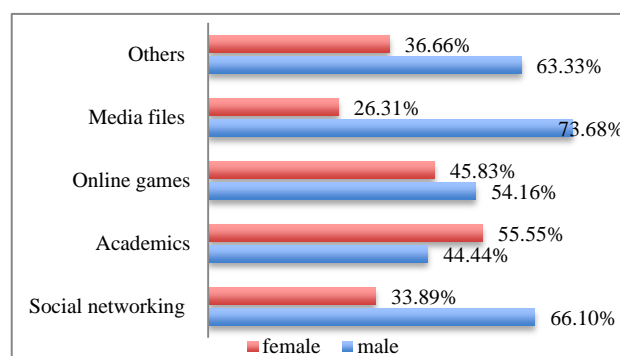
Figure 3: Purpose of internet access and gender.
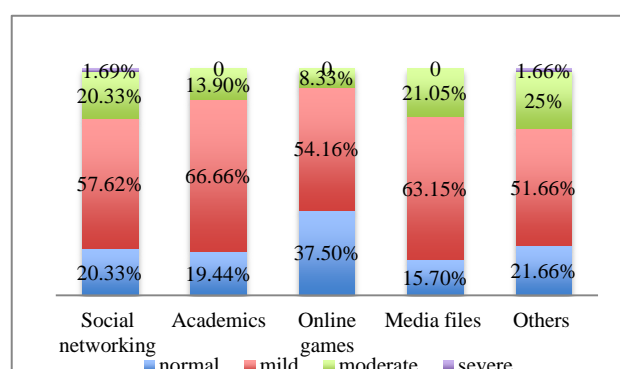
Figure 4: Purpose of internet usage and severity of internet addiction.

Table 3: Association between mean internet addiction score and gender of the study subjects.

Gender	N (score)	%	Mean	SD	t-value	P value
Male	148	62.71	39.74	15.05	5.028	<0.001
Female	88	37.29	28.76	18.00		

Table 4: Association between internet usage pattern and duration of internet access/day.

Grades of internet addiction	<2 hrs N	2-5 hrs N	>5 hrs N	Fischer's exact	P value
Normal	44	6	0	80.707	<0.001
Mild	122	16	0		
Moderate	10	31	5		
Severe	2	0	0		

DISCUSSION

The present study was conducted to assess Internet addiction in a sample of undergraduate medical students. The assessment was done based on Young's internet addiction scale. In our study, the prevalence of severe Internet addiction was found to be 0.8%, which is in accordance with other studies conducted among medical students. A study conducted by Sharma et al in central India reported a prevalence of severe addiction to be 0.35%.[11] Pramanik et al in Nepal noted that 3.07% of the medical students were categorized as severe Internet addicts.[12] Similarly, Ghamari et al in Iran reported severe addicts to constitute 2.8% of the subjects.[13] Malviya et al in Indore reported the prevalence to be 9.55%.[14] A study among College Students in Bengaluru conducted by Krishnamurthy and Chetlapalli reported severe addicts as 8%.[15]

In contrast, study conducted by Kundu et al reported a higher prevalence of 23.08%.[16] In studies conducted at Mangalore by Chathoth et al and at Nagpur by Surwase et al the prevalence of severe Internet addiction was found to be zero.[17,18]

In the present study, moderate addiction was found to be 19.5%, compared to 18.88% in the study conducted by Chathoth et al.[17] The variations in the addiction pattern could be because of the difference in the evaluating methods, also influence of factors such as stress and psychological co-morbidities. However the reasons for availability of Internet and the factors contributing to addiction behavior were not included in the present study.

The mean duration of Internet use per day was 1.96 hours in our study, compared to 4hours per day in a study by Ching et al in Malaysia and 1.29 hours by Sharma et al in Central India.[19,11] In a study conducted by Srijampana et al, it was found that majority of the medical students (82%) were using internet daily for around 1-3 hr.[20]

The mean duration of Internet use in our study was 4.4 years, compared to 6.46 (±2.31) years in the study at Mangalore by Chathoth et al.[17] In our study it was found that 91.1% of the study participants were using internet for >2 years and about 41% of them had used internet for >5 yrs.

In our study, the most frequent purpose of internet use identified among the participants included social networking (25%), downloading media files (24.2%) and for other purposes (25.4%). In a study by Kundu et al majority of the students used internet for social media (73.08%), 65.38% for downloading media files, 63.08% for academic purpose.[16] Similar findings were noted by Srijampana et al in Andhra Pradesh, where the students used the internet mostly for social networking (59.7%) and downloading media files (18.9%).[20] Zalavadiya et al in Gujarat reported social networking and educational purposes as the reasons for frequently using internet among medical students.[21] In the study conducted in Mangalore, the most common purpose was social networking (97.8%), followed by emailing and educational purposes.[17]

Differences in the mean internet addiction score between males and females was found to be statistically significant, which was similar to other studies conducted by Ghoel et al in Mumbai, Sharma et al in Madhya Pradesh, Subhaprada and Kalyani in Andhra Pradesh, Kundu et al in Gurugram, Zalavadiya et al in Gujarat.[10,11,16,21,22] In contrast, no significant association between gender and presence of internet addiction disorder was found in a study done in Indore by Malviya et al and Chennam Setty et al in Andhra Pradesh.[4,23]

CONCLUSION

The overall prevalence of severe internet addiction in our study was found to be 0.8% among the participants; moderate addiction and mild addiction were 19.5% and 58.5% respectively. Majority of the participants were mildly addicted (66.2%-male, 45.45%-female) and 22.9% of males and 13.6% of females were moderately addicted. However the prevalence of severe addiction among males was only 0.67% and among females, it was 1.13% and this difference was found to be statistically significant. Duration of internet access per day and the severity of Internet addiction were also found to be significant.

Many researches in India and other parts of the world have shown a higher prevalence of Internet Addiction among adolescents and young adults. Studies done in different parts of the country have also shown the same situation among undergraduate medical students. However, our study revealed a much lesser prevalence of internet addiction compared to other studies. Yet, there is a need to focus on this aspect of mental health as problematic internet use is increasingly being reported and younger internet users are more at risk of becoming Internet addicts. Multi centric studies are required to assess the real problem and thereby take appropriate steps to tackle the same.

Recommendations

As technology continues to grow, internet addiction would affect millions of people, especially children and adolescents. Public health professionals and also mental health professionals should be aware of the spectrum of internet addiction and their focus towards implementation of preventive, diagnostic and treatment strategies should be accelerated.

The importance of awareness regarding Internet addiction and measures to promote a healthy Internet culture should be emphasized among the people of various age groups including medical professionals. The need to plan public health policies with regard to this behavioral addiction to ensure early recognition of the symptoms and appropriate

preventive measures, and also initiatives towards creating opportunities for recreation, relaxation and extracurricular activities should be considered.

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