RESEARCH ARTICLE

INTERNET ADDICTION AMONG PROFESSIONAL COURSES STUDENTS: A STUDY FROM CENTRAL INDIA

Arvind Sharma[1], Rupesh Sahu[1], Pradeep Kumar Kasar[1], Richa Sharma[2]
[1] Department of Community Medicine, NSCB Medical College & Hospital, Jabalpur, Madhya Pradesh, India
[2] CMO, NSCB Medical College & Hospital, Jabalpur, Madhya Pradesh, India

Correspondence to: Arvind Sharma (drarvindsharmajbp@yahoo.co.in)

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ABSTRACT
Background: Rapid expansion and proliferation of the internet has provided better opportunities for communication, information and social interaction. The excessive undisciplined use by individuals has led to the emergence of the concept of internet addiction. Psychological and environmental factors in the lives of college students may leave them disproportionately vulnerable to Internet addiction.
Aims & Objective: Present study was conducted with objectives to determine the level of Internet addiction and behavioural aspects among students of professional courses.
Materials and Methods: This cross sectional study was carried out on the professional course students, 15 to 25 years of age group in Jabalpur city of Madhya Pradesh, India. A total of 400 students using internet for at least since last 6 months were selected by simple random sampling. Young's Internet addiction scale, consisting of 20-item, based upon five-point Likert scale was used and subjects were classified into normal users (score <20), mild (score 20-49), moderate (score 50-79) and severe (score >79) internet addiction.
Results: A total of 391 out of 400 questionnaire forms were analyzed. Of the 391 students 55% were male. Mean age of students was 19.02(±1.450) years. Males were more addicted to the internet than female. The mean time spent on internet was 1.29(±1.251) hours per day. The internet addiction test scoring revealed that 57.3% as normal users, 35.0% as case of mild, 7.4% as moderate and 0.3% as severely addicted to Internet.
Conclusion: Internet addiction is growing problem among students of professional courses, so it is necessary to develop strategies for prevention of internet addiction as well as therapeutic interventions, which is vital for promoting healthy and safe use of the Internet.
Key Words: Internet Addiction; Professional Course Students; Internet Addiction Score; Young's Internet Addiction Scale; Likert Scale

Introduction

Internet user population world-wide has increased from 360 million in December 2000 to 2.4 billion in June 2012 [1]; this show's that world-wide internet penetration is 34.3% of population. In Asia, it has grown from 114 million internet users in December 2000 to 1.07 billion in June 2012[1]; this show's that internet penetration in Asia is 27.5% of population. In India, there were about 137 million internet users in June 2012 as compared to 5 million in 2000, so the internet penetration in India is 11.4% of population.[1] A research conducted by IAMAI (Internet And Mobile Association of India) and IMRB International (Indian Market Research Bureau) in June 2013, indicates that the Internet usage in India has gone up with more and more Internet users using the Internet on a regular basis.[2] In June 2013, India had 190 Million Internet Users, of this; 130 Million belonged to Urban India and the rest 60 Million were from Rural India.[2] Rapid expansion and proliferation of the internet has provided better opportunities for communication, information and social interaction. However, the excessive undisciplined use by some individuals has led to the emergence of the concept of internet addiction.[3-5] The term "addiction" has generally been associated with substance use. However, with internet access becoming widespread, problematic internet use is increasingly being reported. It has been suggested that excessive internet use could represent addictive behaviour with mental health implications.[6-8] In fact, Younger Internet users were more at risk of becoming Internet addicts than older users.[9] Psychological and environmental factors in the lives of college students may leave them disproportionately vulnerable to Internet addiction.[10,11] Possible reasons for this are: (a) students have huge blocks of unstructured time, (b) schools and universities provide free and unlimited access to the Internet, (c) students from the ages of 18 - 22 years are for the first time away from parental control without anyone monitoring or censoring what they say or do online, (d) young students experience new problems of adapting to university life and finding new friends, and often end up seeking a companionship by using different applications of the Internet, (e) students receive full encouragement

from faculty and administrators in using the different Internet applications, (f) adolescents are more trained to use the different applications of technological inventions and especially the Internet, (g) students desire to escape university sources of stress resulting from their obligations to pass exams, compose essays and complete their degrees in the prescribed time with reasonable marks, and finally (h) students feel that university life is alienated from social activities, and when they finish their studies, the job market with all its uncertainties is a field where they must participate and succeed in finding employment (Young, 2004).[12] Young's Internet Addiction Test (IAT) is the only available test whose psychometric properties have been tested by Widyanto and McMurran.[13] Young designed the IAT, a widely-used 20- item instrument that has demonstrated good reliability, to screen for Internet addiction.[13-15] However, when it comes to students of professional courses viz. MBBS (Medical), BE (Engineering), BPT (Physiotherapy) and Nursing, the scenario may be different in consideration of lack of excess time with these students. It would be interesting to know the level of Internet addiction among these students. Therefore, the present study was conducted with the objective to determine the level of Internet addiction and behavioural aspects among students of these professional courses.

Materials and Methods

Study design, Study Population and Sampling

This cross sectional study was carried out on the professional course students of MBBS, Nursing, Physiotherapy and Bachelor of Engineering (B.E) between 15 to 25 years age group during the period of August– November 2013 in Jabalpur city of Madhya Pradesh State of India. A total of 400 students using internet for at least since last 6 months were selected by simple random sampling in each course. The study was conducted after obtaining the approval from the research ethics committee and permission was sought from the college authorities of all the respective colleges.

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, religion, education, type of phone used and time spent on internet per day. Second part was the Young's scale of Internet Addiction which was developed by Dr. Kimberly Young, 1998 which is one of the most reliable scales for evaluating internet addiction.[14] It covers the degree to which internet use affect daily routine, social life, productivity, sleeping pattern, and feeling. Total internet addiction scores were calculated, with possible scores for the sum of 20 items ranging from 0 to 100. Based on the scoring, subjects were classified into normal users (<20), mild (21-49), moderate (50-79) and severe (>79) internet addiction groups. The scale reliability observed to be very consistent in the present study (Cronbach's alpha=0.820) showing excellent measure to determine the internet addiction.

Before administering the questionnaire to students, the nature and purpose of the study was explained to the students and it was emphasized to choose the answer which they actually felt. Confidentiality was assured and informed consent was taken.

Sample Size

The sample size was calculated by using the formula $n=Z^2pq/d^2$ (where Z=1.96 at 95%confidence; p= prevalence of internet addiction; q=1-p; d= absolute allowable error). For this study we presumed maximum variability, therefore p=0.5; q=0.5; d=10% of p. Sample size thus yielded was 384 which was rounded off to a figure of 400.

Statistical Analysis

Data were analyzed using the statistical package for social science (SPSS) 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. Chi-square test was used for analysing categorical variables. P-value < 0.05 considered as significant.

Results

A total of 391 out of 400 student questionnaires were analyzed, 9 forms were rejected because of being incompletely filled. Of the 391 students, there were 251 (55%) males and 176 (45%) females with mean age of 19.02 (±1.450) years. The mean time spent on internet was 1.29 (±1.251) hours per day. Internet addiction was present in 167 (42.7%) students; boys reported more Internet addiction than girls (p=0.000). Of the 391 students, the internet addiction test scoring revealed 224 (57.3%) as normal users, 137 (35.0%) as having mild internet addiction, 29 (7.4%) moderate internet addiction and 1 (0.3%) having severe Internet addiction. Proportionately more BPT students were addicted to the

internet followed by BE, MBBS and Nursing students. The other baseline parameters were noted in table 1.

Table – 1: Frequency of participants according to age, religion, education, type of phone used, time spent on internet per day, internet addiction and severity of internet addiction (n=391)

Characteristics		N	%
Age (Years)	15-20	336	85.9
	21-25	55	14.1
Religion*	Hindu	330	84.4
	Muslim	11	2.8
	Christian	5	1.3
	Buddhism	2	0.51
Education#	BE	126	32.2
	BPT	53	13.6
	MBBS	130	33.2
	Nursing	82	21
Type of Phone used†	Simple	209	53.5
	Smart	182	46.5
Time spent on internet per day	< 2hr	257	65.7
	2-3 hr	104	26.6
	≥ 4hr	30	7.7
Internet addiction	Present	167	42.7
	Absent	224	57.3
Level of internet addiction (Internet addiction score)	Normal (<20)	224	57.3
	Mild (20-49)	137	35
	Moderate (50-79)	29	7.4
	Severe (80-100)	1	0.3

* n= 348, rest 43(11%) haven't mentioned their religion.
# BE-Bachelor of Engineering, BPT-Bachelor of Physiotherapy, MBBS-Bachelor of Medicine & Bachelor of Surgery.
† Smart phone - which has an operating system (Windows, Android, Blackberry etc.) and can read/edit a document. Simple phone- other than smart phone.[16]

Table-2: Relationship of Internet Addiction with sex, age, education, type of phone used and time spent using Internet

Characteristics		Internet addiction		χ^2	p-value
		Present	Absent		
Sex	Males	115	100	22.673	0.000
	Females	52	124		
Age (Years)	15-20	146	190	0.537	0.464
	21-25	21	34		
Education	BE	60	66	11.354	0.010
	BPT	27	26		
	MBBS	58	72		
	Nursing	22	60		
Type of phone	Simple	75	134	8.55	0.003
	Smart	92	90		
Time spent on internet per day	<2hr	79	178	43.94	0.000
	2-3hr	68	36		
	≥4hr	20	10		

Table-3: Comparison between behavioral aspects of internet users by sex

	Characteristics		Sex		χ^2	p-value
			Male	Female		
1.	Fear of life being bored without internet	Yes	79	39	9.77	0.002
		No	136	137		
2.	Feel sleepless because of being online till late night	Yes	41	18	5.906	0.015
		No	174	158		
3.	At leisure time using internet is better than going out with friends/families	Yes	72	34	9.834	0.002
		No	143	142		
4.	Decreased outdoor playing time due to use of internet	Yes	57	18	16.555	0.000
		No	158	158		
5.	Feel anxious when not using Internet	Yes	26	16	0.91	0.34
		No	189	160		

As Shown in table 2, there was significant difference in presence of Internet addiction between males and females with more males being addicted to the internet (χ^2=22.673, P=0.000). Significant difference was also present between students of various courses in being addicted to the Internet (χ^2=11.354, P=0.010). More numbers of those using smart phones were addicted to the internet than those using simple phones (χ^2=8.550, P=0.003). Significant relationship was also found between time spent on using internet per day and internet addiction (χ^2=43.940, P=0.000). Internet addiction among students aged 15-20 years was higher but it was not significant (χ^2=0.537, P=0.464).

As Shown in table 3, more males than females, fear about life becoming bored without internet (χ^2=9.770, P=0.002); feel sleepless because of continuously being online till late night (χ^2=5.906, P=0.015); finds using internet better than going out with friends/family at leisure time (χ^2=9.834, P=0.002); suffered more reduction in outdoor playing time (χ^2=16.555, P=0.000); however, there was no significant difference in feeling anxious when offline (χ^2=0.910, P=0.34).

Discussion

Observing the explosive growth in internet use among the professional course students, it is important to study internet addiction in this subset of population. Professional course students are a particularly vulnerable group on account of the time they spend on the internet. This study is an initial step toward understanding the extent of internet addiction among professional course students in India.

In the present study, the male students were observed to be more addicted to Internet than the female students (χ^2=22.673, *P*=0.000). Grover, et al. in their study, a survey of Internet use pattern among professionals in India, reported similar result.[17] A study on Internet addiction among adolescents revealed 50% increased odds for males to be addicted to the Internet (OR=1.5, 95% CI=1.1–2.2) when compared with females.[18] In a Finnish study, men had significantly higher mean score on the Internet Addiction Test (IAT) than did women.[19] Available data from the community and online surveys as well as clinical samples suggest that Internet addiction appears to have a male preponderance[20-25]; this was explained by Griffiths[26], who suggested that males are more likely to use the internet to fuel other addictions such as gambling and gaming. It is suggested that the gender distribution may be explained by the fact that

men are more likely to express interest in games, pornography, and gambling activities that have all been associated with problematic Internet use.[20]

The mean age in this study was 19.02 (±1.450) years and there was no significant difference in internet addiction between different age groups. Mashhor Al-hantoushi et al. reported mean age 17 years and also reported no significant difference in internet addiction between different ages.[27] Studies have found that the Internet addiction usually manifests itself in the late 20s or early 30s.[28,29]

In this study internet addiction was measured by using Young's Internet addiction scale. We found that 57.3% students were normal users while 35.0% cases have mild addiction, 7.4% students have moderate addiction and 0.3% of them have severe addiction to internet, so, combining mild, moderate and severe addictions, a total of 42.7% students were addicted to internet. A study on the prevalence of internet addiction in Indian adolescents reported the prevalence at 0.7%.[30] Chathoth Vidya Mavila et al, reported prevalence of internet addiction (representing moderate and severe addiction) as 18.88% in undergraduate Medical students in Mangalore.[31] A study on internet addiction disorder among medical students in China reported a prevalence of 16.2%.[32] Naffise Mashaei et al observed the prevalence of internet addiction in students of Rafsanjan University of Medical Sciences, Iran, as 51.3% mild, 5.4% moderate and 0.9% severe, while 42.4% students were not addicted to the internet.[33] The studies that have estimated the prevalence of Internet addiction have come up with varying results (0.9-38%) depending on the criteria used and the sample studied.[21,34] The published study from India, which evaluated Internet addiction by using Davis Online Cognition Scale in school-going children aged 16-18 years, reported a prevalence of 18%.[35] In different studies, prevalence of internet addiction has been reported between 1.5-25% and in Iran it was 11%.[36-40] The reasons for huge variation in the prevalence rates could be as follows: difficulty in conceptualizing Internet addiction, heterogeneity of population studied, lack of availability of standard diagnostic criteria, studies failing to differentiate between essential and nonessential Internet use, and non-consideration of psychiatric co-morbidity in some of the studies.[20,34,43-47]

In the present study, significantly more males than females- feared about life becoming bored without internet; felt sleepless because of being continuously online till late night; found using internet better than going out with friends/family at leisure time; agreed a reduction in outdoor playing time due to internet. A study from India too reported that those who were dependent on Internet would delay their work to spend time online, lose sleep due to logging in till late night, feel lonelier, and feel life would be boring without the Internet as compared with nondependent subjects.[37]

In this study, we found a significant difference between students of various courses in being addicted to the Internet (χ^2=11.354, p=0.010).

Those using smart phone were more addicted to the internet than those using simple phone (χ^2=8.550, p= 0.015) suggesting that the ease of accessing Internet with respect to time, place and logistics required definitely has some effect on being addicted to the internet. It may also increase the time spent using internet.

In this study, we found that mean time spent on internet was 1.29(±1.251) hours per day, with more than sixty percent of sample (65.7%) spending <2 hours per day on internet. Grover et al, in their study found the average time spent in Internet use was 2.13 h (SD 1.98) everyday, more than half (56.73%) of the sample was using Internet at least for 2 h/day.[17] We found a significant relationship between hours spent using internet and presence of Internet addiction (χ^2=43.940, p=0.000). Similar results were obtained by Nalwa et al.[37] However; speed of the internet connection might play a big role in affecting time spent using internet.

Conclusion

Internet addiction is growing problem among students of professional courses, which has psychological, physical, and social impact on student's life. So it is necessary to develop strategies for prevention of internet addiction as well as therapeutic interventions, which is vital for promoting healthy and safe use of the Internet. Awareness should be created among the students to improve ability to reduce the occurrence of internet addiction behaviour promoting their healthy growth.

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