Original Research Article

Internet addiction and factors associated with it: a cross sectional study among students of a medical college in Davangere, Karnataka

Aswin Kumar[1]*, Ayesha S. Nawaz[2], Ravi Kumar[3], Yamuna B. N.[1]

Department of Community Medicine, [1]S.S institute of medical sciences and research centre, Davangere; [2]Navodaya Medical College, Raichur; [3]M.R. Medical College, Gulbarga, Karnataka, India

ABSTRACT

Background: India is not only growing in terms of population but also developing in terms of communication. Internet has become an essential tool for education, entertainment, communication and sharing of information. Excessive and undisciplined use of internet has led to emergence of internet addiction (IA), especially among students. The objective of the study was to know the magnitude of internet addiction among medical students and to determine the factors associated with it.
Methods: The present cross sectional study was carried out over a period of two months among 138 medical students of SSIMS and RC Davangere. Data was collected using a pre designed, pretested questionnaire, with questions adapted from Young's internet addiction questionnaire to test internet addiction.
Results: In our study 30% students had mild internet addiction and 10% had moderate internet addiction. Male gender, internet usage of more than 5 hours per day and expenditure on the monthly internet pack of more than Rs. 400 were found to be significantly associated with internet addiction.
Conclusions: More than one third of the students, especially males had internet addiction. It is essential for the parents and institutions to supervise the medical students and limit the time as well as expenditure on the internet usage.

Keywords: Internet addiction, Medical students, Young's internet addiction questionnaire

INTRODUCTION

India is not only growing in terms of population but also developing in terms of communication. In this generation of communication explosion, Internet has become an essential tool for education, entertainment, communication and sharing of information.[1] There are more than 343 million Internet users in India and there has been a tremendous rise of mobile Internet from 173 million mobile Internet users in December 2014 to 343 million by December 2016. The number is expected to double by 2020.[2] As enormous information on any topic can be obtained at the click of a button; it is natural for children and adolescents to explore the internet. From seeking information to making life-long friends on social media, more and more students are exposed to the internet. Data reveals that one-fifth of college going students' access rental mobile Internet plans which allow unlimited access to Internet. Nearly one-fourth of the School going kids use mobile Internet on Pay per Site basis.[2]

Excessive and undisciplined use of internet has led to emergence of the concept of internet addiction (IA).[3]

Internet addiction is described as excessive computer use that interferes with the daily life, impairs the daily functions and inability of the individuals to control themselves when they are using the internet.[4] Studies have shown that magnitude of internet addiction may range from 7%to 42%.[1,3,5,6] Adolescents with internet addiction are more likely to have poor academic performance and engage in high-risk behaviours.[7,8]

College students are especially vulnerable to develop dependence as they often access the internet to get the required information to complete their assignments or to communicate with their colleagues and mentors.[9] Medical students are a particularly vulnerable group on account of the time they spend on the internet. As not many studies have been carried out among medical students, the present study was conducted with the objective to determine the magnitude of Internet addiction among medical students and to determine the factors associated with it.

METHODS

The present cross sectional study was carried out among the medical students who have been studying at SSIMS and RC Davangere, since one year. Interns and postgraduate students of selected institution and students not willing to participate in the study were excluded. The study was carried out for a period of two months from August 2015 to September 2015. Sample size was calculated by using the formula $4pq/d^2$ .By applying values of p=9.5, q =90.5, d =5 to the formula we got a sample size of 138, which was rounded off to 150.

Data was collected from the students using a pre tested and semi structured questionnaire. It consisted of questions related to background characteristics of the students, internet usage related characteristics and questions adapted from Young's internet addiction questionnaire to know whether the students have Internet addiction.[10]This consisted of 20 questions and a score of 0 to 5 is given for each question based on their response, which are graded as follows: 0 =not applicable, 1 =rarely, 2 =occasionally, 3 =frequently, 4 =often, 5 =always. After all the questions have been answered, the final scoring was done by adding the numbers for each response. The higher the score range, the greater the level of addiction: normal range 0–30 points, mild 31- 49 points, moderate 50-79 points, severe 80-100 points.

Students were selected randomly and it was decided to include equal number of students from each gender and each class. The students were given 30 minutes to answer and hand over the questionnaire. It was decided to refer the students with internet addiction to psychiatry department; in the process confidentiality was maintained. Ethical clearance was taken from institutional ethical committee.

Data was entered into Microsoft excel sheet and analysed using SPSS trial version. Chi square test was applied to know the association.

RESULTS

The present cross sectional study was carried out among medical students who have been studying in the college for a year or more. 150 students were included in the study. The mean age of the study participants was 20.67±1.08 years. 75 male students and 75 female students were part of the study.

Table 1, shows the education and occupation of parents of the medical students. As seen in the table majority of the parents were educated up to degree and above. Majority (62%) of the students said their mothers were homemakers.

Table 1: Background characteristics of study participants.

S. No.	Variable	Groups	Frequency (%) (n=150)
1	Father's Education	Less than degree	22 (15)
		Degree and above	97 (65)
		Not specified	31 (20)
2	Mother's Education	Less than degree	42 (28)
		Degree and above	77 (51)
		Not specified	31 (21)
3	Father's Occupation	Self employed	46 (31)
		Employed	18 (57)
		Not specified	19 (12)
4	Mother's Occupation	Home maker	93 (62)
		Other work	40 (27)
		Not specified	17 (11)

The students were enquired about the number of years of computer and internet usage, number of hours of internet use per day and monthly expenditure on internet. Majority of the students responded that they have been using computer since 6 to 10 years (40.7%) and 52.7% of the students reported 3 to 5 years of internet usage. Majority of the students said that they spend two hours or less on internet per day (57.3%), while 8.7% said they use it for more than 5 hours and majority of the students spent less than Rs. 200 per month on internet (52%). Multiple responses were obtained by the students when enquired about the most common gadget used, mode and location. Mobile phones (90%) were the most commonly used gadgets to access the internet followed by the laptops (16.7%). Mobile internet services (88.7%) and wifi (16%) were the commonly used modes to access internet. Majority of the students (86.7%) responded with

hostels as the most commonly used location to access internet followed by residence (30%) (Table 2).

Table 2: Characteristics related to internet usage.

Variable	Frequency (n)	Percentage (%)
Years of computer usage		
0-5 years	48	32.0
6-10 years	61	40.7
>10 years	41	27.3
Years of internet usage		
$\leq$2 years	26	17.3
3-5 years	79	52.7
>5 years	45	30.0
Hours of internet utilization per day		
$\leq$2 hours	86	57.3
3-5 hours	51	34.0
>5 hours	13	8.7
Expenditure on internet		
<200 Rs.	78	52.0
200-400 Rs.	50	33.3
>400 Rs.	22	14.7
Most used gadget for accessing internet*		
Desktop	12	8.0
Laptop	25	16.7
Tablet	5	3.33
Mobile phone	135	90.0
Most common mode of internet access*		
Wifi	24	16.0
Broadband	12	8.0
Datacard	12	8.0
Mobile internet	133	88.7
Most common location of internet access*		
Residence	45	30.0
Cyber cafe	6	4.0
Library	6	4.0
Classroom	9	6.0
Hostel	130	86.7

*Multiple responses obtained from students.

The most commonly accessed social networking sites were facebook (72.7%) and whatsapp (64%). The most common reasons cited by the students for internet use were entertainment (62.7%), study (61.3%) and keeping in touch with friends and family (61.3%) (Table 3).

Figure 1, shows that in the present study, majority of the students did not have internet addiction (60%), 30% had mild internet addiction and 10% had moderate internet addiction.

Internet addiction was more among male students (55%), which were found to be statistically significant. The duration of internet usage exceeded more than 5 hours per day (69%) and expenditure on the monthly internet pack exceeded more than Rs. 400 (64%) among the internet addicts, which was found to be statistically significant (Table 4).

Table 3: Networking sites used and purpose of usage.

Variable	Frequency (n)	Percentage (%)
Networking site used*		
Facebook	109	72.7
Whatsapp	96	64.0
Instagram	22	14.7
Google	17	11.3
Hike	14	9.3
Twitter	8	5.3
You tube	10	6.7
Wikipedia	5	3.3
Purpose of internet use*		
Study	92	61.3
Entertainment	94	62.7
Chatting	88	58.7
Keeping in touch with family and friends	92	61.3
Making new friends online	24	16.0

*Multiple responses obtained from students.

Table 4: Factors associated with internet addiction.

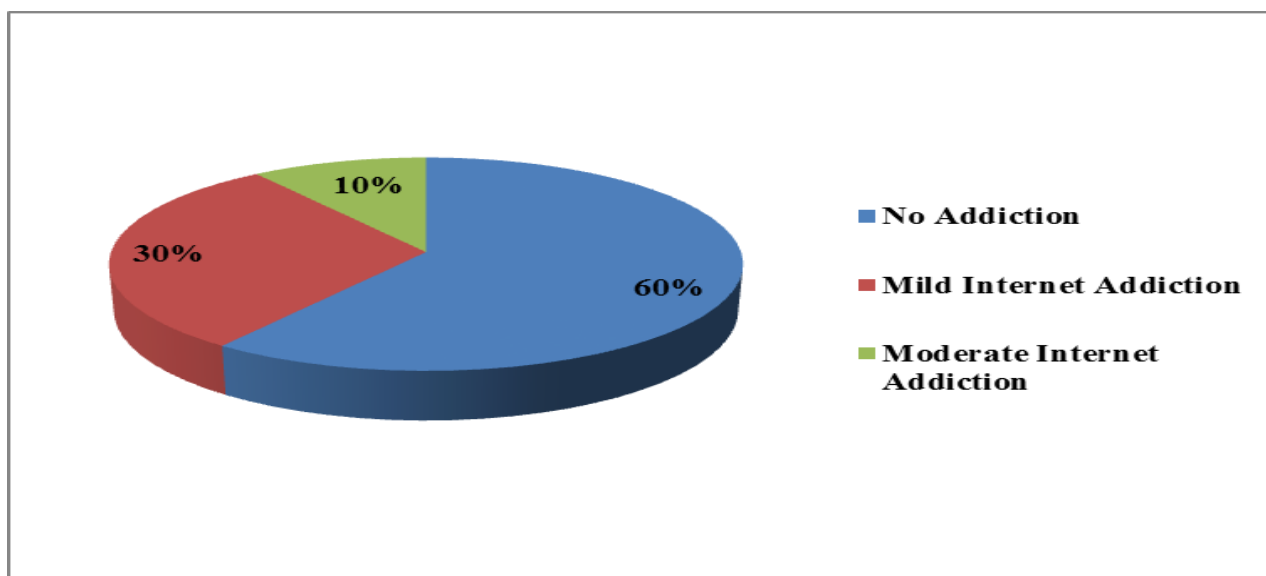| S. No.	Variable		Normal internet users	Addicted internet users	P value
1	Gender	Male	34 (45)	41 (55)	<0.0001
		Female	56 (75)	19 (25)	
2	Hours of internet usage per day	$\leq$2	59 (69)	27 (31)	0.015
		3–5	27 (53)	24 (47)	
		>5	4 (31)	9 (69)	
3	Expenditure on Internet (Rs.)	<200	55 (70)	23 (30)	0.009
		200–400	27 (54)	23 (46)	
		>400	8 (36)	14 (64)	

Figure 1: Magnitude of internet addiction.

Table 5: Demographic factors and internet addiction.

S. No.	Variable		Normal internet users	Addiction internet users	P value
1	Stage of M.B.B.S	2nd year	29 (58)	21(42)	0.779
		3rd year	29 (58)	21(42)	
		4th year	32 (64)	18 (36)	
2	Fathers education	Less than degree	12 (55)	10 (45)	0.229
		Degree and above	66 (68)	31 (32)	
3	Mothers education	Less than degree	25 (70)	17 (30)	0.307
		Degree and above	53 (69)	24 (31)	
4	Fathers occupation	Self employed	31 (67)	15 (33)	0.404
		Employed	51 (60)	34 (40)	
5	Mothers occupation	Home maker	61 (66)	32 (34)	0.538
		Other	24 (60)	16 (40)	

Table 6: Internet usage related characteristics and internet addiction.

S. No.	Variable		Normal internet user	Addiction internet user	P value
1	Years of computer usage	<=2	32 (67)	16 (33)	0.282
		3-5	32 (52)	29 (48)	
		>5	26 (63)	15 (37)	
2	Years of internet usage	<=2	18 (69)	8 (31)	0.166
		3-5	50 (63)	29 (37)	
		>5	22 (49)	23 (51)	

The other demographic factors like stage of M.B.B.S, education and occupation of parents and internet usage related characteristics like years of computer usage and years of internet usage were not associated with the internet addiction (Table 5 and Table 6).

DISCUSSION

The present study showed that, 60% of the students were normal users with no addiction, 30% had mild Internet addiction and 10% had moderate internet addiction. A study carried out among medical students in Mangalore showed a higher magnitude of internet addiction compared to our study, where 57.7% students had mild addiction and 18.8% had moderate addiction.[11] Two similar studies carried out among medical students in Iran showed that the magnitude of Internet Addiction was 7.3% and 10.8% which is less when compared to our study.[3,12] A study on medical students in China reported a prevalence of 16.2%.[13] The wide variation in the

magnitude of internet addiction might be due to different study settings, influence of environmental factors, variation in the scales used to assess internet addiction, as well as the nature of students involved.

Internet addiction was found more among male students when compared to females, and this was statistically significant. Similar findings were seen in studies by Durkee et al and Adiele et al.[14,15] Contrary to our findings a study by Naffise et al, showed the internet addiction was more among girls.[16] This might be explained by the finding that majority of the internet addicts stayed at dormitories (Hostel). In our study the most common location used to access internet was hostel (86.7%). As many of them quoted the purpose of internet usage as entertainment (62.7%) and keeping in touch with family and friends (61.3%), it appears that students staying away from their homes and facing loneliness or boredom sought refuge in internet. Free and unlimited access to the Internet, ease of access to internet via mobile, constantly being available online, lack of parental supervision and sometimes as an easy route of escape from exam stress might be the possible reasons for the growing magnitude of Internet addiction among college students.[1,9]

Majority of the students also said study as the purpose of internet usage (61.3%). Availability of information on any topic at the click of a button, online teaching videos which help students in acquiring clinical skills, ease of using mobile internet might contribute to higher internet usage among medical students.

In our study the most commonly accessed networking sites were Facebook (72.7%) and whatsapp (64%). Majority of the students used their mobile phones (90%) to access the internet. In our study, the students with internet addiction used internet more than five hours a day and spent more than Rs.400 per month on internet data packs. Krishnamurthy et al reported similar findings in their study.[1]

CONCLUSION

More than one third of study population is addicted to internet, majority are mild addicts and factors like male gender, time spent on internet per day and expenditure on internet were associated with internet addiction.

Recommendations

Male students should be given more attention in institution regarding their internet usage and the sites they access. Parents should consider the spending of their children on internet to assess the possibility of addiction. Authorities of institution should consider organizing awareness session regarding internet addiction and its effect on their students.

REFERENCES

1. Krishnamurthy S, Chetlapalli SK. Internet addiction: Prevalence and risk factors: A cross-sectional study among college students in Bengaluru, the Silicon Valley of India. Indian J Public Health. 2015;59:115-21.
2. Internet and Mobile Association of India (IMAI). 11th Annual Report 2014-15. Internet andMobile Association of India (IMAI). Accessed on 4th March 2017.
3. Salehi M, Khalili MN, Hojjat SK, Salehi M, Danesh A. Prevalence of Internet Addiction and Associated Factors Among Medical Students From Mashhad, Iran in 2013. Iran Red Crescent Med J. 2014;16(5):e17256.
4. Block JJ. Issues for DSM-V: Internet addiction [Editorial]. Am J Psychiatry. 2008;165:306–7.
5. Malviya A, Dixit S, Shukla H, Mishra A, Jain A, Tripathi A. A Study to Evaluate Internet Addiction Disorder among Students of a Medical College and Associated Hospital of Central India. Natl J Community Med. 2014;5(1):93-5.
6. Sharma A, Sahu R, Kasar PK, Sharma R. Internet addiction among professional courses students: A study from Central India. Int J Med Sci Public Health. 2014;3:1069-73.
7. Huang H, Leung L. Instant messaging addiction among teenagers in China: shyness, alienation, and academic performance decrement. Cyber Psycho Behav. 2009;12(6):675–9.
8. Lam LT, Peng ZZ, Mai JJ, Jing JJ. The association between Internet addiction and self-injurious behaviour among adolescents. Injury Prevention. 2009;15(6):403–8.
9. Kandell JJ. Internet addiction on campus: The vulnerability of college student. Cyber psycho Behav. 1998;1:11-7.
10. Young Internet addiction scale. Available at: http://www.globaladdiction.org. Accessed on 10th June 2015.
11. Chathoth VM, Kodavanji B, Arunkumar N, Pai SR. Internet Behaviour Pattern In Undergraduate Medical Students In Mangalore. Int J Innovative Res Sci Eng Technol. 2013;6(6):500-5.
12. Ghamari F, Mohammadbeigi A, Mohammadsalehi N, Hashiani AA. Internet Addiction AndModeling Its Risk Factors In Medical Students, Iran. Indian J Psychol Med. 2011;33(2):158-62.
13. Liu X, Bao Z, Wang Z. Internet Use and Internet Addiction Disorder Among Medical Students: A Case from China. Asian Soc Sci. 2010;6:1.
14. Durkee T, Kaess M, Carli V, Parzer P, Wasserman C, Floderus B, et al. Prevalence of pathological internet use among adolescents in Europe:

demographic and social factors. Addiction. 2012;107(12):2210-22.

15. Adiele I, Olatokun W. Prevalence and determinants of Internet addiction among adolescents. Comput Human Behav. 2014;31:100-10.

16. Naffise M, Mohammad A, Ahmad PB, Omid R, Ayatollahi A, Reza B, et al. The prevalence of Internet Addiction among the Students of Rafsanjan University of Medical Sciences. ASEAN J Psych. 2013;14(2):109-16.