

# Internet usage pattern among first year medical students: A cross-sectional study

Vedalaveni Chowdappa Suresh<sup>1\*</sup>, Wilma Delphine Silvia C R<sup>2</sup>, Shantha Ram V<sup>3</sup>,  
Swarna Buddha Nayok<sup>4</sup>

{<sup>1\*</sup> Assistant Professor, Department of Psychiatry}, {<sup>2</sup> Professor and HOD, Department of Biochemistry}, {<sup>3</sup> Associate Professor, Department of Anatomy}, {<sup>4</sup> Jr. Resident, Department of Psychiatry}, Akash Institute of Medical Sciences and Research Centre, Bangalore, Karnataka, INDIA.  
Email: [suriroc@gmail.com](mailto:suriroc@gmail.com), [widel.2011@gmail.com](mailto:widel.2011@gmail.com)

## Abstract

**Background:** Globally, there has been proportionate increase in the internet usage pattern, specifically among teenagers which can foster addictive behaviors. **Objective:** To study the internet usage pattern and internet addiction [IA] among first year medical students. **Material and Methods:** The study sample consists of 150 first year medical students. Young's 20-item Internet Addiction Test (IAT), along with a semi-structured proforma consisting of demographic details and pattern of internet usage, was administered. **Results:** The prevalence of IA among the students was of mild (58.7%) to moderate (28%) degree. The most common purpose of internet usage was for online shopping, online videos and social networking. **Conclusions:** In the current world, regular internet usage can impose addictive behaviors among vulnerable students. Hence, measures to be taken to educate and bring about awareness to promote appropriate internet usage pattern among medical students.

**Key Words:** Internet addiction, Medical students, Young's internet addiction questionnaire.

## \*Address for Correspondence:

Dr. Suresh VC, Assistant Professor, Department of Psychiatry, Akash Institute of Medical Sciences and Research Centre, Devanahalli-562110, Bangalore, INDIA.

Email: [suriroc@gmail.com](mailto:suriroc@gmail.com), [widel.2011@gmail.com](mailto:widel.2011@gmail.com)

Received Date: 17/01/2018 Revised Date: 12/02/2018 Accepted Date: 04/03/2018

DOI: <https://doi.org/10.26611/107532>

## Access this article online

Quick Response Code:



Website:

[www.medpulse.in](http://www.medpulse.in)

Accessed Date:  
10 March 2018

## INTRODUCTION

In this rapidly growing technology world, there has been an exponential increase in the use of internet in our daily life. It has become an important tool for education, entertainment, communication and information sharing<sup>1</sup>. As per IMAI and KANTAR IMRB report 2016<sup>2</sup>, India had an estimated 432 million Internet users, which was higher among young men and college students. The prevalence of internet addiction (IA) across countries range between 0.8%-26.7%<sup>3</sup>. A study done in India among medical students reported 0.4%<sup>4</sup>. Studies have

found a positive correlation between IA and psychological distress among college students<sup>5,6</sup>. Students tend to use internet services for communication, recreation, facilitation of research activities, academic knowledge, social networking, business transactions and entertainment etc. However, studies have shown excess internet usage as a way of escape from psychological distress among students<sup>7</sup>. Studies have reported that IA can lead to various physical, psychological and social problems which include poor academic performance, sleep deprivation, social isolation, impaired work function etc<sup>8,9</sup>. There has been increase in research activities in the field of behavioral addiction, particularly IA and it is yet to get a place in existing classificatory system<sup>10</sup>. Hence, it is important to carry out such studies looking into prevalence of IA behaviors among first year medical students.

## MATERIALS AND METHODS

The study sample consists of first year medical students of batch 2017-18, Akash Institute of Medical Sciences and Research Centre, Bangalore. A written informed

consent was obtained from the students who were willing to participate in the study. Data regarding socio-demographic details and internet usage pattern were assessed using a semi-structured proforma prepared for the study along with Internet Addiction Test [IAT] scale. Approximately 15-20mins was required to fill up the study proforma. Institutional ethical committee clearance was obtained prior to the study.

**Young’s internet addiction test [IAT]:** This instrument was developed by Dr Young Kimberly<sup>11,12</sup>. It is a reliable measure of severity of self-reported compulsive internet usage. It consists of 20 items and each question is rated on a 5 point Likert scale from 0 to 5 ( 0=Does not apply, 1=Rarely, 2= Occasionally, 3=Frequently, 4=Often, 5=Always). Total scores are calculated after adding the score on all 20 items, so as to get the score which ranges from 20 to 100. Based on the scoring results are interpreted as follows 0-19 points= Normal range, 20-49 points=Mild, 50-79 points=Moderate, 80-100 points= Severe internet addictive behaviors. Higher the total scores, greater the level of IA. The validity and reliability of the Young’s IAT has been evaluated in various studies<sup>13,14</sup>.

**Statistical Analysis:** Descriptive and inferential statistical analyses have been carried out in the present study. Results on continuous measurements are presented on Mean ± Standard Deviation (Min-Max) and results on categorical measurements are presented in Number (%). Significance is assessed at 5% level of significance. Analysis of variance (ANOVA) has been used to find the significance of study parameters between three or more

groups of students. Student t test (two tailed, independent) has been used to find the significance of study parameters on continuous scale between two groups (Inter group analysis) on metric parameters. Chi-square/ Fisher Exact test has been used to find the significance of study parameters on categorical scale between two or more groups, Non-parametric setting for Qualitative data analysis. Fisher Exact test used when cell samples are very small.

**OBSERVATION AND RESULTS**

The study sample consists of 150 medical students, astonishingly all the 150 students consented to take part in the study. The addictive patterns were divided into mild, moderate and severe degrees based on the cut-off scores given by IAT questionnaire. Table 1 shows the gender difference in IA behaviors among the students. Table 2 gives the various factors related to internet usage/pattern such as residence, years of internet use, daily hours of internet usage, log-in pattern and amount spent per month for internet access. Table 3 summarizes the purpose of internet usage by the students.

**Table 1:** Gender difference and IAT scores

IAT	Gender		Total
	Male	Female	
Normal	6(10.2%)	13(14.3%)	19(12.7%)
Mild	26(44.1%)	62(68.1%)	88(58.7%)
Moderate	26(44.1%)	16(17.6%)	42(28%)
Severe	1(1.7%)	0(0%)	1(0.7%)
<b>Total</b>	<b>59(100%)</b>	<b>91(100%)</b>	<b>150(100%)</b>

**Table 2:** Characteristics related to internet usage patterns

Variables	IAT				Total (n=150)	P value
	Normal (n=19)	Mild (n=88)	Moderate (n=42)	Severe (n=1)		
<b>Current residence</b>						
Home	8(42.1%)	23(26.1%)	14(33.3%)	0(0%)	45(30%)	0.462
Hostel/paying guest	11(57.9%)	65(73.9%)	28(66.7%)	1(100%)	105(70%)	
<b>Years of internet use</b>						
<1 year	4(21.1%)	15(17%)	15(35.7%)	1(100%)	35(23.3%)	0.174
1-5 years	9(47.4%)	51(58%)	20(47.6%)	0(0%)	80(53.3%)	
5-10 years	6(31.6%)	18(20.5%)	7(16.7%)	0(0%)	31(20.7%)	
>10 years	0(0%)	4(4.5%)	0(0%)	0(0%)	4(2.7%)	
<b>Daily internet use[hours]</b>						
<1 hour	10(52.6%)	13(14.8%)	0(0%)	0(0%)	23(15.3%)	<0.001**
1-3 hours	9(47.4%)	53(60.2%)	21(50%)	0(0%)	83(55.3%)	
3-5 hours	0(0%)	19(21.6%)	15(35.7%)	0(0%)	34(22.7%)	
>5 hours	0(0%)	3(3.4%)	6(14.3%)	1(100%)	10(6.7%)	
<b>Log-in status</b>						
Intermittent (log in and off occasionally)	17(89.5%)	64(72.7%)	25(59.5%)	0(0%)	106(70.7%)	0.029*
Continuously (permanently online)	2(10.5%)	24(27.3%)	17(40.5%)	1(100%)	44(29.3%)	
<b>Amount spent on internet/month</b>						
<100rs	16(84.2%)	67(76.1%)	30(71.4%)	1(100%)	114(76%)	0.679

100-500rs	3(15.8%)	21(23.9%)	12(28.6%)	0(0%)	36(24%)
501-1000rs	0(0%)	0(0%)	0(0%)	0(0%)	0(0%)
>1000rs	0(0%)	0(0%)	0(0%)	0(0%)	0(0%)

\* Moderately significant (p value: 0.01<p≤0.05), \*\* Strongly significant (p value: p≤0.01)

**Table 3: Distribution of purpose of internet usage based on the levels of IA among students**

Variables	IAT				Total (n=150)	P value
	Normal (n=19)	Mild (n=88)	Moderate (n=42)	Severe (n=1)		
Surfing Net	4(21.1%)	28(31.8%)	16(38.1%)	1(100%)	49(32.7%)	0.291
Socialnetworkingsites	10(52.6%)	70(79.5%)	33(78.6%)	1(100%)	114(76%)	0.080+
Onlineshopping	2(10.5%)	35(39.8%)	16(38.1%)	1(100%)	54(36%)	0.031*
OnlineVideo	11(57.9%)	66(75%)	38(90.5%)	1(100%)	116(77.3%)	0.021*
Gaming	6(31.6%)	19(21.6%)	12(28.6%)	0(0%)	37(24.7%)	0.623
Pornography	0(0%)	1(1.1%)	3(7.1%)	0(0%)	4(2.7%)	0.170
Bloggng	0(0%)	3(3.4%)	1(2.4%)	0(0%)	4(2.7%)	1.000
Communications	8(42.1%)	55(62.5%)	25(59.5%)	1(100%)	89(59.3%)	0.353
Academicactivities	7(36.8%)	43(48.9%)	13(31%)	0(0%)	63(42%)	0.160

+ Suggestive significance (p value: 0.05<p<0.10), \* Moderately significant (p value: 0.01<p≤0.05)

## DISCUSSION

The aim of the study was to investigate the IA behaviours among first year medical students. The present study showed 12.7% of students were normal internet users, whereas 58.7% of students had mild internet addictive behaviors and 28% of students had moderate internet addictive behaviors and only 1% had severe addiction. The results are in comparison with a similar study done in south India<sup>15</sup>. However, two studies have reported lesser prevalence of IA behaviors, 16.2% and 10.8% respectively<sup>16,17</sup>. The varied results of the studies could be due to various environmental and social factors, heterogeneous sample, use of different tools to assess IA. Researchers have found that changes in the psychosocial and environmental characteristics make the students a vulnerable group for IA<sup>18,19</sup>. Previous studies have shown mixed results in terms of gender difference and IA<sup>20, 21, 22</sup>. In the current study, most of the female students (68.1%) had milder degree of addiction whereas male students were equally distributed across mild (44.1%) to moderate (44.1%) degrees. However, there was no significant gender difference for IA among the study group. In this study most of the students with mild (73.9%) and moderate(66.7%)addiction were staying in hostel or paying guest. Of the study group, most of the students (53.3%) have been using internet for the last 1 to 5years. In the current study, hours of daily internet usage (p=<0.001) and Log-in status (p=0.029) showed significant association with addictive behavior. In former,78% of students were using internet for 1 to 5 hours per day, only 1 student used internet for more than 5 hours daily and had severe IA. Most of the students logged-in intermittently (70.7%). Almost entire sample (96.7%) accessed internet through their mobile/cell phones which is similar to a previous study<sup>22</sup>.Cellphones

and Wi-Fi were the most common mode of internet access. Those who had mild (59.1%) and moderate (50%) IA preferred cell phones. This could be attributed to the ease of carrying cell phones. Overall, the most common purpose of internet usage was for watching online videos (77.3%), social networking (76%), communication (59.3%) and online shopping (36%). These internet addictive behaviors can be attributed to increase in academic pressure, boredom, living away from home and a way of escape from various stressors<sup>15</sup>. This purpose of internet usage was similar in both mild and moderate addicts. All of these students had spent less than 500 rupees per month for internet usage, majority (76%) of whom had spent less than 100 rupees per month. In contrast to previous study amount spent per month for internet usage did not show any significant difference (p=0.679)<sup>23</sup>. This shows that easy internet access with cheaper rates can play a major role in the increase of internet usage and addictive behaviors.

## CONCLUSION

There has been an increase in internet usage pattern among students, which can cause intense behavioral addiction requiring intervention. This can result in further academic decline in an already demanding medical education. Hence, measures to be taken to educate and bring about awareness to promote appropriate internet usage pattern among medical students.

**Limitations of the study:** The study sample is small; hence the results of the study cannot be generalized for large population. The study assessed subjective pattern of internet use, however did not completely differentiate between compulsive and regular internet usage. This is a cross-sectional study, however a prospective study is

recommended to know the changing trends of IA, which is yet to get a place in the existing classificatory systems.

## ACKNOWLEDGEMENT

The authors gratefully acknowledge Dr Satish Babu HV, Director, AIMS and RC and Dr Vasudeva DS, Principal, AIMS and RC, for the encouragement and constant support to carry out this project. We would like to thank all the First year medical students of batch 2017-18, Akash Institute of Medical Sciences and Research Centre, Devanahalli, Bangalore, who participated and contributed to the study. We also thank Dr KP Suresh, Principal Scientist, NIVEDI, Bangalore for statistical analysis and Mrs Vidya S for technical support.

## 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 journal of public health*. 2015 Apr 1; 59(2):115.
2. Internet in India. IAMAI-IMRB Report. Internet in India – 2016.
3. J Kuss D, D Griffiths M, Karila L, Billieux J. Internet addiction: a systematic review of epidemiological research for the last decade. *Current pharmaceutical design*. 2014 Aug 1; 20(25):4026-52.
4. Srijampana VV, Endreddy AR, Prabhath K, Rajana B. Prevalence and patterns of internet addiction among medical students. *Medical Journal of Dr. DY Patil Vidyapeeth*. 2014 Nov 1; 7(6):709.
5. Akin A, Iskender M. Internet addiction and depression, anxiety and stress. *International online journal of educational sciences*. 2011 Apr 1; 3(1):138-48.
6. Seifi A, Ayati M, Fadaei M. The Study of the Relationship between Internet Addiction and Depression, Anxiety and Stress among Students of Islamic Azad University of Birjand.
7. McNicol ML, Thorsteinsson EB. Internet addiction, psychological distress, and coping responses among adolescents and adults. *Cyberpsychology, Behavior, and Social Networking*. 2017 May 1; 20(5):296-304.
8. Guan SS, Subrahmanyam K. Youth Internet use: risks and opportunities. *Current opinion in Psychiatry*. 2009 Jul 1; 22(4):351-6.
9. Brenner V. Psychology of computer use: XLVII. Parameters of Internet use, abuse and addiction: the first 90 days of the Internet Usage Survey. *Psychological reports*. 1997 Jun; 80(3):879-82.
10. Chou C, Condrón L, Belland JC. A review of the research on Internet addiction. *Educational Psychology Review*. 2005 Dec 1; 17(4):363-88.
11. Young KS. Internet addiction: The emergence of a new clinical disorder. *Cyberpsychology and behavior*. 1998; 1(3):237-44.
12. Widyanto L, McMurrin M. The psychometric properties of the internet addiction test. *Cyberpsychology and behavior*. 2004 Aug 1; 7(4):443-50.
13. Frangos CC, Frangos CC, Sotiropoulos I. A meta-analysis of the reliability of Young's Internet addiction test. In *Proceedings of the World Congress on Engineering 2012 (Vol. 1, pp. 368-371)*.
14. Pontes HM, Patrão IM, Griffiths MD. Portuguese validation of the Internet Addiction Test: An empirical study. *Journal of Behavioral Addictions*. 2014 Jun 1; 3(2):107-14.
15. Chathoth V, Kodavanji B, Arunkumar N, Pai SR. Internet behaviour pattern in undergraduate medical students in Mangalore. *International Journal of Innovative Research in Science, Engineering and Technology*. 2013; 2(6).
16. Liu X, Bao Z, Wang Z. Internet use and internet addiction disorder among medical students: A case from China. *Asian Social Science*. 2009 Dec 17; 6(1):28.
17. Ghamari F, Mohammadbeigi A, Mohammadsalehi N, Hashiani AA. Internet addiction and modeling its risk factors in medical students, Iran. *Indian journal of psychological medicine*. 2011 Jul; 33(2):158.
18. Young KS, Rogers RC. The relationship between depression and Internet addiction. *Cyberpsychology and behavior*. 1998; 1(1):25-8.
19. 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 Sep 1; 3(9):1069-73.
20. Durkee T, Kaess M, Carli V, Parzer P, Wasserman C, Floderus B, Apter A, Balazs J, Barzilay S, Bobes J, Brunner R. Prevalence of pathological internet use among adolescents in Europe: demographic and social factors. *Addiction*. 2012 Dec 1; 107(12):2210-22.
21. Naffise M, Mohammad A, Ahmad PB, Omid R, Reza B, Fatemeh AB. THE PREVALENCE OF INTERNET ADDICTION AMONG THE STUDENTS OF RAFSANJAN UNIVERSITY OF MEDICAL SCIENCES. *ASEAN Journal of Psychiatry*. 2013 Jul 1; 14(2).
22. Kumar A, Nawaz AS, Kumar R, Yamuna BN. Internet addiction and factors associated with it: a cross sectional study among students of a medical college in Davangere, Karnataka. *International Journal Of Community Medicine And Public Health*. 2017 Jun 23; 4(7):2525-30.
23. Mutalik NR, Tejaswi TP, Moni S, Choudhari SB. A cross-sectional study on assessment of prevalence of Internet addiction and its correlates among professional college students. *Open Journal of Psychiatry and Allied Sciences*. 2018; 9(1):20-5.

Source of Support: None Declared  
Conflict of Interest: None Declared