

A cross sectional study on internet addiction among students of KMCT integrated campus

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Background: College students are vulnerable for developing dependence on the Internet, more than most other segments of the society. Studies on pathological internet use in India especially Kerala are scanty. So this study was conducted to find out internet addiction among college students. **Objectives:** 1) To find out the prevalence of internet addiction among the college students 2) To study the pattern of internet usage among these students. **Methods:** This cross-sectional study was carried out in students of four different colleges under KMCT Group of Institutions in Kozhikode, Kerala 2016-17. The data was collected by self-administering questionnaire consisting of socio-demographic information, internet usage and Young's Internet Addiction Test (YIAT). Data collected was entered in Microsoft excel and analyzed using SPSS. Prevalence of internet addiction was determined based on total score of YIAT. **Result:** The mean age of the study participants was 20.25±1.3SD. About 48.3% were males and 51.7% females. The mean age of computer use and internet use was 10.01 ± 3.55 years and 6.61 ± 3.13 years respectively. Prevalence of internet addiction was 77.6% in mild users and 18.4% in moderate users. 49.24% accessed internet during night time. 94.86% had internet connection in their smart phones and it was the most common device used for accessing internet. 93.1% said that internet helps in improving their academics. 43.5% visited various sites for more than ten times a month for academic purposes. 14.5% visited various sites on internet when they get time in between lecture classes and 7.1% visited different sites during an ongoing lecture. **Conclusion:** The results highlight the vulnerability of professional college students to internet addiction.

Keywords: KMCT, SPSS, Pornography

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Introduction

Today at a time 2.8 billion people are online and 5.2 billion people are on mobile, the world has become a giant, globally connected village where all information ever created is just a click away [1].

Global phenomenon of technological progress and connectivity has not spared population from developing countries due to extreme infiltration of technology even into remotest tribal areas and all citizens are converted into Netizens. India had 432 million mobile internet users in December 2016, of which 269 million (62.3%) were from urban India and 163 million (37.7%) were from rural India [2].

The internet was originally designed to facilitate communication and research activities. Now it is used by many to seek information and for business transactions. On the other hand, it can be used by some to indulge in pornography, excessive gaming, chatting for long hours and gambling.

There have been growing concerns worldwide for what has been labeled as "internet addiction" [3,4]. First time in 1995 Dr. Ivan Goldberg proposed the term "internet addiction" for pathological compulsive internet use.

Young linked excessive internet use most closely to pathological gambling, a disorder of impulse control in DSM IV and adapted the DSM IV criteria to relate to internet use in the Internet Addiction Test [5,6].

Davis preferred the term "pathological internet use" (PIU) over internet addiction as addiction term mainly refers to dependency on psychoactive substances. Scott Caplan suggested replacing the term "pathological internet use" with "problematic internet use" which is widely used all over now.

Connection of PIU between social phobia, depression, anxiety, substance abuse and self harm is well established now [7,8,9]. College students are vulnerable for developing dependence on the Internet, more than most other segments of the society.

This can be attributed to several factors including the following: Availability of large blocks of free time; courses that require use of gadgets and internet; the psychological and developmental characteristics of young adult hood; sudden freedom from parental control and monitoring; influence of peers; the Internet

Offering a route of escape from exam stress, all of which make Internet overuse a significant cause of concern for parents and faculty [4,10,11].

There are innumerable studies globally depicting a worldwide scenario of the problematic internet use phenomena. But large scale epidemiological research about PIU in India especially Kerala are scanty.

Most of these studies have not covered students in professional colleges. So this study was conducted to find out patterns of internet use and prevalence of internet addiction among college students from different disciplines in Kozhikode district of Kerala.

Material and Methods

Setting: KMCT Integrated Campus

Type of study: Cross sectional study

Sampling method: Simple random sampling

Sample collection: This cross-sectional study was carried out in four different colleges across four different streams of professional courses under KMCT Group of Institutions (Medicine, Dentistry, Architecture and Pharmacy) in Kozhikode, Kerala during the year 2016-17.

The sample size was calculated using 45.8% prevalence of internet addiction observed by Krishnamurthy et al in the study conducted at Bangalore [8]. For 95% confidence interval and 5 % absolute precision the sample size required was 381; which was rounded off to 390.

A total of 390 students from these four colleges were selected by simple random sampling technique. Of the total 390 students included in the study, around 28 students could not be included in the study as they were not Internet users, and 31 submitted incomplete forms. Thus, a total of 331 students were finally included in the study.

Data collection: The data was collected by self-administering predesigned and pretested structured questionnaire. The nature and purpose of the study was explained to the students and it was emphasized to choose the answer which they actually felt.

Questionnaires were distributed to the participants in the campus settings and were collected onsite after 30 minutes.

The questionnaire contained four parts:

01. Part I included Socio demographic information including age, sex, religion, income etc.
02. Part II included details regarding patterns of internet use such as place of access, gadget used for access, internet use hours per day, frequent web activities such as gaming, chatting, shopping, social networking etc.
03. Part III included Young's Internet Addiction Test (YIAT). It is a 20-item questionnaire measured on five-point Likert scale which is one of the most reliable scale for evaluating internet addiction.
04. Part IV included 7 item Health Questionnaire which is a self report of physical effects of internet/ electronic gadget use.

Confidentiality was assured and informed consent was taken.

Statistical methods: Data collected was entered in Microsoft excel and analyzed using the statistical package for social science (SPSS) software (version 14.0). Frequencies and percentages were calculated for all the categorical variables. Mean and Standard deviation were calculated for all numerical variables. Chi-square test was used for analyzing categorical variables. P-value < 0.05 was considered as significant.

Scoring system: Prevalence of internet addiction was determined based on total score of YIAT. Internet use was divided into four categories normal range <20 points, mild: 20-49 points, moderate: 50-79 points, and severe: 80-100 points

Ethical consideration and permission: The study was conducted after obtaining the approval from the Institutional Ethics Committee and permission was sought from the college authorities of all the colleges.

Results

The mean age of the study participants was 20.25±1.3SD. Among them 48.3% were males and 51.7% were females. The mean age of computer use and internet use was 10.01 ± 3.55 years and 6.61 ± 3.13 years respectively.

49.24% of the participants accessed the internet during night time. The socio demographic characteristics of the study participants are depicted in Table 1.

Table-1: Socio demographic characteristics of study participants (n=331).

Socio demographic characteristics	Students (%)
Age	
< 20	208 (62.8)
>20	123 (37.2)
Gender	
Male	160 (48.3)
Female	171 (51.7)
Religion	
Hindu	123 (37.3)
Muslim	164 (49.7)
Christian	43 (13)
Place of stay	
Day scholar	118 (64.4)
Hostel	213 (35.6)
Nativity	
City	56 (16.9)
Town	250 (75.5)
Village	25 (7.6)
Course	
MBBS	177 (53.47)
Pharmacy	56 (16.92)
BDS	39 (11.78)
Architecture	59 (17.82)
Parent's occupation (Father)	
Professional	116 (35.5)
Semi professional	11 (3.1)
Skilled	155 (47.4)
Semi skilled	22 (6.7)
Unskilled	22 (6.7)
Unemployed	4 (0.9)
Parent's occupation (Mother)	
Professional	71 (21.6)
Skilled	3 (0.9)
Semi skilled	4 (1.2)
Unskilled	3 (0.9)
Housewife	249 (75.9)
Gadgets used	
Mobile	158 (46.4)
Tablet	3 (0.6)
Laptop/ desktop	8 (2.4)
More than one device	162 (49.1)

Table-2: Pattern of internet use by the study participants (n=331).

Variables	Number (%)
Years of computer use	
<2	8 (2.1)
2-5	32 (9.7)
5-8	73 (22.1)
>8	218 (62.1)
Device commonly used to access internet	
Mobile phone	314 (94.86)
Laptop/ desktop	17 (5.13)

Years of internet use	
<2	26 (7.9)
2-5	95 (28.7)
5-8	132 (39.9)
>8	78 (23.6)
Monthly expense for internet	
<200	170 (53.1)
200-500	69 (21.6)
500-800	44 (13.8)
>800	37 (11.6)
Most common location of internet access	
Home	143 (43.6)
Hostel	97 (29.6)
Campus	4 (1.2)
Library	3 (0.9)
Cybercafé	4 (1.2)
Public places	11 (3.4)
Accessing at more than one location	67 (20.1)
Time of access	
Morning	5 (1.51)
Afternoon	16 (4.83)
Evening	135 (40.78)
Night	163 (49.24)
No specific time	12 (3.62)
Frequency of internet use	
Daily	177 (53.2)
Alternative days	59 (17.5)
1-2 times a week	52 (16)
<5 times a month	43 (13.2)
IAT Score	
<20	7 (2.2)
20-49	257 (79.1)
50-79	61 (18.8)
80-100	0 (0)

94.86% (314/331) of the study participants had internet connection in their smart phones and it was the most common device used for accessing internet. 49.1% (162/331) of them possess at least two gadgets and they feel proud of it while using the device in front of others.

In the past five years, 19.93 % (66/331) spent less than Rs.10000 for buying gadgets, 21.75% (72/331) spent Rs.10000 – 25000, 25.98% (86/331) spent Rs.25000-50000, 22.35% (74/331) spent Rs.50000-100000 and 9.66% (32/331) spent more than Rs.100000 for purchasing gadgets.

Characteristics and pattern of internet use by the study participants is depicted in Table 2.93.1% (308/331) of the study participants said that internet helps in improving their academics.

43.5% (143/331) of the students said they visit

Various sites for more than ten times a month for academic purposes. 35.9% (118/331) of them visited 1-5 times and 15.2% (50/331) of them visited 5-10 times a month for academic purposes. 5.4% (18/331) doesn't use internet for academic purposes.

14.5% (47/331) of the students said that they visit various sites on internet when they get time in between lecture classes and 7.1% (23/331) of them agreed that they visit different sites during an ongoing lecture.

Table-3: Comparison of IAT Score with various student characteristics.

		Test score			P value
		<20	20 - 49	50 - 79	
Tingling	Yes	1	22	15	0.005
	No	6	25	46	
Head ache	Yes	0	69	23	0.024
	No	7	188	38	
Watering eye	Yes	1	37	20	0.006
	No	6	220	41	
Back pain	Yes	2	42	25	0.001
	No	5	214	36	
Neck pain	Yes	1	19	15	0.002
	No	6	238	46	
Game time	<1	7	151	32	0.020
	>1	0	52	20	
Expense	<800	5	220	52	0.661
	>800	1	27	9	
Sex	Male	3	114	41	0.005
	Female	4	143	20	
Age	<20	4	156	44	0.220
	>20	3	101	17	
Branch	MBBS	3	141	32	0.027
	Pharmacy	3	43	8	
	Architecture	1	37	18	
	Dental	0	36	3	
Stay	Hostler	5	160	45	0.223
	Day scholar	2	97	16	

77.6% (257/331) of the students play games in their gadgets. Only 20.5% (68/331) play online games. 72.6% (193/331) of them play for less than an hour whereas 19.2% (51/331) of them play for 1-2 hours. 8.3% (22/331) of the students play games more than two hours.

1.5% (6/331) of the students updates their display picture (DP) daily in social networking sites. 28% (92/331) of them update DP at least 2-3 times a week and 17.5% (58/331) updates 1-2 times a month. 46.2% (152/331) of them rarely changes

Their display picture whereas 6.8% (23/331) of them have never done this so far.

Students those who were using internet daily for long duration was suffering from headache (28.3%), neck pain (10.2%), back pain (21.3%), eye pain (22.2%), watering of eyes (17.8%) and tingling sensation in hands (11.7%); and the symptoms were significantly associated with the internet addiction test scoreie, 2.2 % of them were normal users, 79.1% were having mild addiction, 18.8% were moderately addicted and none in the category of severe addiction (Table 3). Prevalence of internet addiction was 77.6% in mild users and 18.4% in moderate users (Table 4).

Table-4: Prevalence of internet addiction.

Types of prevalence	YIAT score	Frequency	Prevalence
Mild	20-49	257	77.6
Moderate	50-79	61	18.4

Discussion

College students are vulnerable for developing dependence on the internet, more than most other segments of the society. This can be attributed to several factors like availability of large blocks of free time; courses that require use of gadgets and internet; the psychological and developmental characteristics of young adult hood; sudden freedom from parental control and monitoring; influence of peers; the internet offering a route of escape from exam stress, all of which make internet overuse a significant cause of concern for parents and faculty.

Professional course students are particularly vulnerable group on account of the time they spend on internet [6,7,9]. Observing these factors, it is important to study internet addiction in this subset of population. This study is an attempt to understand the degree of internet addiction among professional course students in KMCT Integrated campus.

The mean age of the study participants was 20.25 ± 1.34 SD. The mean age of computer use and internet use was 10.01 ± 3.55 years and 6.61 ± 3.13 years respectively. The male students were observed to be more addicted to the internet than the female students (p=0.005).

Sharma A, et al. in their study of internet addiction among professional course students in Jabalpur city of Madhya Pradesh observed male students to be more addicted to Internet than the female students

($\chi^2=22.673, P=0.000$) [10].

Grover, et al. in their study, a survey of Internet use pattern among professionals in India, reported similar result[11]. 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 [12].

In our study internet addiction was assessed using Young’s internet addiction scale; 2.2% of them were normal users, 79.1% were having mild addiction, 18.8% were moderately addicted and none in the category of severe addiction.

This finding was similar to the results of the study conducted by Sharma A et al, where they found 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 [10].

A study on the prevalence of internet addiction in Indian adolescents by Goel D et al, reported the prevalence of 0.7% [7]. Chathoth V M et al, reported prevalence of internet addiction (representing moderate and severe addiction) as 18.88% in undergraduate medical students in Mangalore [13]. A study on internet addiction disorder among medical students in China by Liu X et al, reported a prevalence of 16.2% [14].

In our study students those who were using internet daily for long duration was suffering from headache (28.3%), neck pain (10.2%), back pain (21.3%), eye pain (22.2%), watering of eyes (17.8%) and tingling sensation in hands (11.7%); and the symptoms were significantly associated with the internet addiction test score ie, 2.2% of them were normal users, 79.1% were having mild addiction, 18.8% were moderately addicted and none in the category of severe addiction.

The study on prevalence and associated risk factors of internet addiction in college going students in Nanded city by Surwase K et al showed statistically significant association between internet addiction and psychological disposition of the study participants [6].

The most common device used to access the internet was smart phones (94.86%) in this study. There was a significant difference (p=0.027) present between students of various professional

Courses in being addicted to the Internet.

Significant relationship was also found between time spent on using internet per day and internet addiction ($p=0.022$) in our study.

The study of internet addiction among professional course students by Sharma A et al, only 46.5% students used smart phones to access internet. Also they found there was a significant difference present between students of various courses in being addicted to the Internet ($p=0.010$).

Significant relationship was also found between time spent on using internet per day and internet addiction ($p=0.000$) in their study [10].

Heterogeneous representation of college students and their systematic method in selection of samples tried to avoid bias in our study as participants were recruited from colleges with different academic settings.

However, recall bias could not be ruled out because it was a cross sectional study and participants were asked to report details of past exposure to use of internet; also they were self reporting and might have responded in such a way as to show themselves in a good light.

Conclusion

In the last decade, internet has become an integral part of our life. The results highlight the vulnerability of professional college students to internet addiction. Prevalence of internet addiction using Young's internet addiction test is 77.64% in mild users and 15.64% in moderate users.

Duration of internet use plays an important role in developing internet addiction. Internet is increasing and internet addiction seems to rise in future. Awareness should be created among the students to improve ability to reduce the occurrence of internet addiction behaviour promoting their healthy growth.

Reference

01. Pezoa-Jares RE, Espinoza-Luna IL, Vasquez-Medina JA. Internet Addiction- A Review. *J Addict Res Ther.* 2012;Nov;6(4).
doi: [Article] [Crossref]
02. Vidyachathoth, Kodavanji B, Kumar NA, Pai SR. Correlation between Affect and Internet Addicti-on in Undergraduate Medical Students in Mang-alore. *J Addict Res Ther.* 2014;Feb;5(1)1-4.
doi: [Article] [Crossref]

03. Bahrainian SA, Alizadeh KH, Raeisoon MR, et al. Relationship of Internet addiction with self-esteem and depression in university students. *J Prev Med Hyg.* 2014 Sep;55(3)86-9.
[Crossref]
04. Salehi M, Norozi Khalili M, Hojjat SK, et al. Prevalence of internet addiction and associated factors among medical students from Mashhad, Iran in 2013. *Iran Red Crescent Med J.* 2014 May;16(5)e17256.
doi: 10.5812/ircmj.17256. Epub 2014 May 5
[Crossref]
05. Young K. Assessment of internet addiction. Available from: <https://gamedependencia.files.wordpress.com/2013/06/young-assessment-of-internet-addiction.pdf> [Crossref]
06. Surwase K, Bagdey P, Adikane H. Prevalence and Associated Risk Factors of Internet Addiction in College Going Students in Nanded city. *Natl J Community Med.* 2017 May; 8(5)213-218.
[Crossref]
07. Goel D, Subramanyam A, Kamath R. A study on the prevalence of internet addiction and its association with psychopathology in Indian adolescents. *Indian J Psychiatry.* 2013 Apr; 55 (2)140-3.
doi: 10.4103/0019-5545. 111451 [Crossref]
08. 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;Apr-Jun;59(2)115-21.
doi: 10. 4103/0019-557 X.57531 [Crossref]
09. Sharma KD, Gupta ID, Gunjan, Sharma V, Sharma R, Sharma D. Internet addiction pattern among high school students of Jaipur city- a descriptive study. *International Multispeciality Journal of Health.* 2016;May;2(5)25-31.
Available from: [Article] [Crossref]
10. 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;Jun;3(9)1069-73.
DOI: 10.5455/ijmsph. 2014. 180 620142 [Crossref]

11. Grover S, Chakraborty K, Basu D. Pattern of Internet use among professionals in India- Critical look at a surprising survey result. *Ind Psychiatry J.* 2010;Jul;19(2)94-100.
doi: [Article] [Crossref]
12. Lam LT, Peng ZW, Mai JC, et al. Factors associated with Internet addiction among adolescents. *Cyberpsychol Behav.* 2009;Oct;12(5)551-5.
doi: [Article] [Crossref]
13. Chathoth VM, Kodavanji B, Nayanatara AK, Pai SR. Internet behaviour pattern in undergraduate medical students in Mangalore. *International Journal of Innovative Research in Science, Engineering and Technology.* 2013;Jun;2(6)2133. Available from:
[Article] [Crossref]
14. Liu X, Bao Z, Wang Z. Internet Use and Internet Addiction Disorder Among Medical Students- A Case from China. *Asian Social Science.* 2010;Jan;6(1)28-34.
DOI: [Article] [Crossref]