

## Original Research Article

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# Internet addiction among engineering students in Belagavi city: cross sectional study

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## ABSTRACT

**Background:** Internet addiction is not clinical diagnosis, but a potentially pathological behavioral pattern with symptoms: a loss of control over the behavior, preoccupation with the Internet, using the Internet to modify mood, and withdrawal symptoms. Easy access and low cost of Internet packs- are main cause of development of increased internet use in India. Internet addiction- factors like gender, environmental factors, socioeconomic status, etc. have effect on internet use.

**Methods:** Cross-sectional study conducted during January 2016 to February 2016. Data was collected among 500 engineering students of four engineering colleges of Belagavi city using young's questionnaire. Analysis was performed using SPS 20. Chi-square applied as statistical test of significance for the association between age, sex, residence, SES and schooling.  $P<0.01$  was considered to be statistically significant.

**Results:** The present study revealed that 16.2 and 6.2% of participants had moderate and severe form of internet addiction respectively. With increase in age prevalence of addiction increased. Internet addiction was more among Males when compared to females. Addiction was seen more in students whose both parents were working.

**Conclusions:** Internet addiction is an emerging form of addiction among students with males more than females mostly among engineering students who are dependent on internet for their work, carrier and completion of course. Hence it's time to develop comprehensive intervention approach to promote healthy and safe internet use from family, college and peers.

**Keywords:** Internet addiction, Young's questionnaire, Engineering students

## INTRODUCTION

Internet is an important tool of modern society used frequently for communication and information sharing in school, business and social life. Problematic internet use as been debated all over the world as there has been an explosive growth in the use of internet for past decade not only all over the world but also India.<sup>1</sup> Easy access and low cost of Internet packs- are main cause of development of increased internet use in India. In 2014 number of internet users in India was estimated to be 243 million and ranked second globally after China with

highest internet users of 300 million.<sup>2</sup> Internet addicts spend most of their life in front of the computer passing time with e-mails, chatting, discussion forums and online games.<sup>3</sup> Internet addiction is not clinical diagnosis, but a potentially pathological behavioral pattern with symptoms: a loss of control over the behavior, preoccupation with the Internet, using the Internet to modify mood, and withdrawal symptoms. Internet addiction can cause children and adolescent physical and psychological health problems, such as depression and suicidal ideation, loneliness, interpersonal problems, time management problems, sleeplessness, destructive

lifestyles and poor dietary behaviors and the increase of blood lead concentration.<sup>4</sup>

The term “addiction” has generally been associated with substance but excessive dependence and addictive pattern has led to emergence of word internet addiction. Several risk factors have been identified as determinants of internet addiction including: being male, living in metropolitan areas, not living with biological parents, low parental involvement, parental unemployment, low educational level of parents, being so young when using internet for the first time, overusing of social and game network sites. Hence internet addiction is a new and attractive subject considered as a behavior-based addiction in recent years.<sup>5</sup>

### Objectives

The objective of this study was to know the prevalence of Internet addiction and study risk factors of internet addiction among engineering students of Belagavi city.

## METHODS

**Sample size:** Calculated using formula:

$$n = Z^2 p q / d^2$$

(where  $Z=1.96$  at 95% confidence;  $p$ =prevalence of internet addiction;  $q=1-p$ ;  $d$ = absolute allowable error).

For this study maximum variability was assumed with  $p=0.5$ ;  $q=0.5$ ;  $d=10\%$  of  $p$  and sample of 486 was obtained where in round sample of 500 was taken.

### Source of data

Five hundred engineering students of two engineering collages of Belagavi city, Karnataka were taken.

### Study design

This study is a community based cross sectional study.

### Study period

The study was conducted between January 2016 and February 2016.

### Inclusion criteria

All the students who were taken admission and were studying in the respective collage and who gave informed consent were included in the study.

### Exclusion criteria

Students who refused to give informed consent and students who were absent during the period of excluded.

Ethical approval was taken from ethical committee.

### Study instrument

- Pretested & predesigned questionnaire
- Young's questionnaire<sup>11</sup>

### Study variables

Age, sex, religion, area of residence, socioeconomic status, etc.

### Sampling method

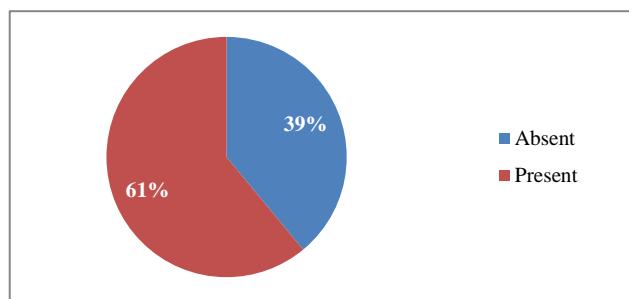
Simple random sampling method was used in the study.

### Statistical analysis

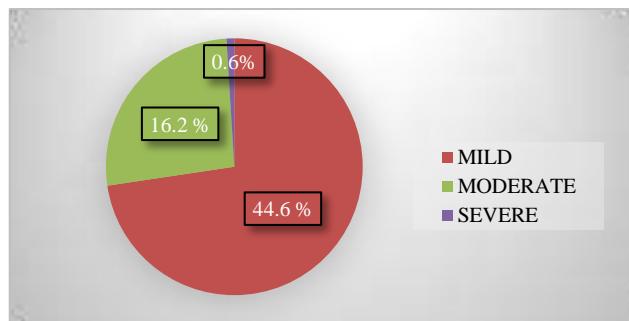
Statistical analysis was done using Microsoft excel worksheet 2013 and SPSS version 20. Chi-square test was used for analyzing variables.  $P<0.01$  was considered as significant.

## RESULTS

In the present study, the prevalence of internet addiction was found to be 61% (Figure 1).



**Figure 1: Prevalence of internet addiction.**



**Figure 2: Distribution of students according to type of addiction.**

In this study, mild form of internet addiction was highest (44.6%), followed by moderate form of addiction (16.2%) and least (0.6%) use was seen with severe form of internet addiction (Figure 2).

**Table 1: Sociodemographic profile.**

Sociodemographic		N (%)
Age (years)	<18	42 (8.4)
	19–22	401 (80.2)
	>23	57 (11.4)
Sex	Male	284 (56.8)
	Female	216 (43.2)
Residence	Rural	330 (66)
	Urban	170 (34)
Religion	Hindu	432 (86.4)
	Muslim	27 (5.4)
	Christian	41 (8.2)
	1	124 (24.8)
Socioeconomic -status	2	146 (29.2)
	3	112 (22.4)
	4	49 (9.8)
	5	69 (13.8)
	English	263 (52.6)
Schooling	Kannada	205 (41)
	Marathi	32 (6.4)

**Table 2: Patterns of internet use.**

		Prevalence (%)
Own computer	Yes	320 (64.0)
	No	180 (36.0)
If no computer, place of use of internet	Internet cafe	59 (32)
	Mobile	90 (51)
Use of internet before	Friends computer	21 (12)
	Others	10 (5)
Age of onset of use of internet (years)	Yes	459 (91.8)
	No	41 (9.2)
Most common use of internet device	≤12	48 (10.2)
	13–16	206 (44.8)
	17–22	205 (44)
Mode of access of internet	Computer	70 (14)
	Mobile	391 (78.2)
Preferred website	Tablet	13 (2.6)
	Laptop	26 (6.2)
Do they feel use of internet helps in getting marks	Wi-fi	151 (28.2)
	Broadband	19 (3.8)
Average use of internet (in hours)	Data card	39 (5.8)
	Mobile internet	291 (62)
Preferred website	≥5	80 (16)
	3–5	80 (16)
	2–3	134 (26.8)
	≤2	206 (41.2)
Do they feel use of internet helps in getting marks	No preferred website	120 (24)
	Chatting	92 (18.4)
	General site (wikipedia)	127 (25.4)
	Social networking	107 (21.4)
	Games	11 (2.2)
Preferred website	Others	43 (8.6)
	Yes	368 (73.6)
	No	132 (26.4)

**Table 3: Association of factors associated with internet use.**

	No addiction (%)	Mild addiction (%)	Moderate and severe addiction (%)	P value
Age (years)	<18 20 (47.6)	14 (33.4)	8.9 (19)	0.004
	19–22 157 (39.2)	187 (46.6)	57 (14.2)	
	>23 16 (28.1)	22 (38.6)	19 (33.3)	
Sex	Male 89 (31.3)	128 (45.1)	67 (23.6)	0.001
	Female 104 (48.1)	95 (44)	17 (7.9)	
Father education	Primary 25 (37.9)	28 (42.4)	13 (19.7)	0.003
	Secondary 34 (46.6)	29 (39.7)	10 (13.7)	
	Post secondary (PUC) 45 (52.9)	34 (40)	8 (7.1)	
	Degree 71 (29.6)	121 (50.4)	48 (20)	
	Post degree 180 (50)	11 (30.6)	7 (19.4)	
Working status of parents	Father 151 (39.2)	177 (46)	57 (14.8)	0.06
	Mother 13 (54.2)	9 (37.5)	2 (8.3)	
	Both 21 (33.3)	24 (38.1)	18 (28.6)	
	Others 8 (28.6)	13 (46.4)	7 (25)	

Socio demographic characteristics of the study participants and pattern of internet use presented in Table 1 and Table 2. The direct correlation of internet use with factors has been depicted in Table 3.

## DISCUSSION

In the present study the term internet addiction has been used many times and has been described as an emerging psychiatric disorder but many health practitioners and researchers are uncertain if it should be considered as a true legitimate mental disorder.<sup>6</sup> It is synonymous to problematic Internet use (PIU), resembles the DSM-IV definition of impulse control disorder or pathological gambling other various names associated with Internet addiction include cyberspace/online/net addiction, high Internet dependency, Internet addicted disorder, pathological internet use, problematic internet use, excessive internet use, and compulsive internet use.<sup>7</sup>

In the current study prevalence of internet addiction was found to be 61% and in 39% not associated with internet addiction. In contrary studies show that the prevalence of internet addiction varies between 2.4 and 18.8%. This rate is reported to vary between 0 and 26.3% in the USA and 4.4 and 13.5% in the European Union.<sup>3</sup> A study conducted in Mumbai, India shows prevalence of 0.7%.<sup>8</sup> In our study prevalence was found to be higher which could be due to early onset of use of internet, easy availability of mobile and cheap internet packs.

A study conducted in Jabalpur city, Madhya Pradesh in age group of 15–25 years showed males were more addicted than females which was almost similar to our study among males 68.7% were found to be addicted and 52% of females were found to be addicted.<sup>9</sup> Similarly a study conducted on internet addiction reveled 50% increased odds for males to be addicted to the Internet (OR=1.5, 95% CI=1.1–2.2) when compared with females.<sup>10</sup>

Of the 500 students, 223 (44.6%) were revealed to have mild internet addiction, 81 (16.2%) moderate internet addiction and 3 (0.6%) severe internet addiction which was almost similar to study conducted in Jabalpur Madhya Pradesh.<sup>9</sup>

In our study there was significant correlation between age and internet addiction i.e. prevalence in less than 18 years was 42 (52.3%), between 19 to 22 years internet addiction was 401 (60.8%) and age above 23 years addiction prevalence was 57 (71.9%). This finding was similar to study conducted among adolescents in China.<sup>12</sup>

Other factors associated with pattern of internet use was assessed in our study which were – own a computer, age of onset of use of internet, most common use of internet device, average use of internet, preferred website.

## CONCLUSION

16.2 and 6.2% of participants had moderate and severe form of internet addiction respectively. With increase in age prevalence of addiction increased. Internet addiction was more among males when compared to females. Addiction was seen more in students whose both parents were working. Risk factors such as age, sex, working status of parents and father's education were found to be statistically significant.

## Recommendations

Looking at brighter side it would be impossible for engineering students to complete their course, work and carrier information without the help of electronic resources. But the problem of internet addiction among these students should gain attention and it's time to develop comprehensive intervention approach to promote healthy and safe internet use. Hence the present has a number of implications specially in terms of prevention

which could be done by raising awareness among parents, teachers and students about internet use.

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