Gender differences in the prevalence and features of internet addiction among Indian college students

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Abstract

Aim: To investigate the gender differences in the rates of prevalence and salient features of internet addiction among Indian college students and also the effects of studying engineering disciplines.

Methods: A total of 810 students from various undergraduate engineering disciplines were selected after informed consent and were given young's internet addiction test and semi structured questionnaire to be self- administered in their class rooms and data sheets collected from them after 30 minutes. The total number of men was 455 and women were 349. Statistical analysis was done using SPSS-19 software.

Results: As per our study the estimate of total prevalence was 8.8%. The number of males addicted is more than females. (10.33% of boys and 6.84% girls) those with net dependence used multiple types of net and with faster accessibility; used more interactive features. Females outnumbered males in social networking and males in multi load games. (13.5%>5.82%).Those with addiction suffered real life social impairment and academic disruption. There was physical impairment of insomnia (26.8%) day time sleepiness (20%) eye strain (19%).

Conclusions: Our study suggests that internet addiction is more common among men than women with differing patterns of use causing significant academic, social and physical impairment.

Key words: Internet addiction, types of net, interactive features, number of hours of use per week, impairment.

Introduction

Today as the internet has become part of the main stream of life it has been noted that a percentage of net users do so in a compulsive and out –of –control manner. The term "Internet addiction" was given by Dr. Ivan Goldberg to denote pathological internet usage.

It was most often comparable to pathological gambling an impulse control disorder. When this use happens at the expense of other aspects of a young person's life, family relationships, performance at work, or studies, and there is also withdrawal anxiety or tension, tolerance and increasing times of use of the net, lying or hiding the time spent on net, spending more on internet services or more sophisticated equipment it can be termed as Internet addiction, a new clinical disorder[1].

Types of internet application used such as, gaming, information services or social networking length of time spent using internet hitherto, parental monitoring, leisure time boredom were the parameters studied in earlier works conducted widely in USA, China, Taiwan and Korea[1-8]. Most dependents gradually spent less time with real people in their lives, developed insomnia, eye strain, carpal tunnel syndrome and back strain[5,6,7]. The dependents were less likely to control their use of highly interactive features than other on line applications[1].

There was high co morbidity of other psychiatric disorders with internet addiction especially depression[2] and social anxiety. This lead to increased use of web as it provided anonymous cover for social interactions[9,10]. Parental problem

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drinking was a predictor of Internet addiction among males and not females[11].

Gender gaps in internet addiction have been noted consistently with women exhibiting more computer anxiety , lesser rates of dependence and differences in the type of applications used. DSM V has reviewed more than 240 aticles and found some behavioral similarities of internet gaming to pathological gambling and substance use disorders.

Diagnostic and statical manual (DSM) V has included internet gaming disorder among conditions that require further study. It has ignored other interactive features that could be addictive and has outlined nine diagnostic criteria for the diagnosis, it recognizes that prevalence rate in Asia is 8.4% in males and 4.5% in females[12].

Indian Scenario of Internet Addiction

There have been arguments that Internet Addiction disorder is no threat in India[13], given that internet usage stands at just above 7%[14]. DSM V part III acknowledges the inclusion of internet gaming disorder as the prevalence rates were high from Asian countries especially Korea and China .

Though there are several studies from the east, Indian studies are few. One study from Punjab by Kanwal Nalwa and Archana Preet Anand in 2003[15]. This study utilized Davis Online Cognition Scale (DOCS) and studied 100 adolescents between 16-18 years of age attending a public school by random sampling. The study concentrated on patterns of net use between dependents and non –dependents , found that those dependent on the net were prone to loneliness, spent more time on the net , suffered insomnia and types of applications used by the dependents did not differ from the non-dependents.

The study of prevalence of internet addiction using Young's addiction test was conducted by Goel D , Subramanyam A , Kamath R in 2009 found the prevalence rate as 0.7% . Those with excessive use had higher rates of anxiety and depression on Duke's Health profile[16].

Aims of the study

The aim of the present study was to estimate differing prevalence rates of internet addiction that is gender related and to analyze the significant behavioural and functional usage differences between them and those who are from engineering course versus other courses of study, and to assess impairment.

Material and methods

810 undergraduate students of a group of colleges of engineering, law, management and arts , in their first and second year of college were selected after informed consent ,were given the semi structured questionnaire and Young internet addiction test papers to be self-administered. After 30 minutes these papers were collected from the students in their classrooms. The respondents without internet addiction as identified during the study became the controls for the study.

Tools Used

1. The Internet Addiction Test (IAT) is the first validated instrument to assess Internet addiction. Developed by Dr. Kimberly Young, the IAT is a 20-item questionnaire. The psychometric properties of the IAT show that it is reliable and valid measure that has been used in further research on Internet addiction. The test measures the extent of client's involvement with the computer and classifies the addictive behaviour in terms of mild, moderate, and severe impairment.

2. A semi structured Questionnaire : A questionnaire was developed to seek information regarding the sociodemographic data.

Statistical Analysis

Microsoft Excel software was used to enter data. Analysis was carried out using SPSS version 19.0 . Descriptive data were anayzed by percentage ,mean, and standard deviation. Pearson's co-efficient was calculated to find out the correlations between continuous variables and Chi-square test for discrete variables . Student- t test was used for in-between group comparisons. For all tests performed , results were considered statistically significant for P< 0.005

Results

In our study of a sample of 810 undergraduate students between the ages of 19 -21 years of age, we found that a total number of 71 students were addicted to the net. Among them 47 were males and 24 were females. Overall prevalence of internet addiction in our study is 8.8%, among males it is 10.33% and among females it is 6.87%.

Table 1. Sociao-DemographicResults

Table 2. Patients of net use

a. The Hours of use per day and per week is a sensitive indicator of dependence, with most dependents using the net for more than 10 hours per week. These were estimated based on the number of hours spent surfing the net for pleasure or personal interest, rather than academic purposes. It also shows the saliency of addictive behaviour, as the addict spends all his time on the net.

b. Type of net connection shows that dependents use multiple types of access and faster access to the net. This highlights the typical feature of addiction being tolerance to the stimulating effects of a behaviour and need for higher (here faster) levels of stimulation with passage of time.

c. Type of applications used : Internet itself is a term which represents different types of functions that are accessible on –line. The two most common applications used by dependents were on line multiplayer games and social networking.

d. Differences in the usage of type of application among male dependents and female dependents was significant

Table 3. Impairment was significant in academics, social relationships and physical health

Table 1. Socio-demographic data

	Non-dependents N (%)	Dependents N (%)	Chi-square P
1. Gender			
Male	408(55.7)	47(66.2)	X^2 2.925
Female	325(44.3)	24(33.8)	Sig 0.087
2.Discipline			
Engineering	361(61)	49(48)	$X^2$10.037
		13.5%	Sig 0.001
Non-Engineering	378(31)	22(51)	
		5.82%	
3. Pattern of net use			
Length of hours	187(70.8)	24(54.5)	$X^2$4.637
Per day 2- 5hrs			Sig 0.031
>than 5 hrs	77(29.2)	20(45.5)	
Length of hours	237(46.9)	11(19)	$X^2$16.508
Per week 5-10 hrs	268(53.1)	47(81)	Sig 0.0001
>than 10 hrs			

Table 2. Type of net connection

Type of net	Non dependent N (%)	Dependent N (%)	Statistic significance
Broad Band	174(27.1)	12(19.4)	$X^2$1.801
Wi Fi	227(35.4)	25(40.3)	Sig 0.406
Mobile Phone+All	**240(37.4)**	**25(40.3)**	

Table 3. Type of applications used

	Non-dependent Mean	Dependent Mean
App-Multiplayer games	0.79	1.21
App-Social networking	1.96	2.33

Discussion

The heterogeneity of the instruments used made comparison of prevalence rates across countries to be difficult. We have used Young's Internet Addiction Scale as it is standardized in more than 4 countries, has all the psychometric properties of reliability and validity and measures the four essential components of addiction 1) Excessive use 2) Withdrawal 3) Tolerance 4) adverse consequences[8]. These are also the criteria used for measuring internet gaming disorder as per DSM V

As per our study the estimate of prevalence was 8.8 %. The number of males who are addicted is more than females. (47 >24) This is supported by other studies all uniformly confirming higher rates in males than females[14,15]. Men reporting greater computer self efficacy , lesser computer anxiety and positive attitudes towards the internet[16]. Engineering students were significantly more dependent than non engineering students (49 >22). The reasons for this could be many. One of the environmental risk factors mentioned in DSM V is computer availability with internet connection that is available for engineering students. The internet promises to result in improvement of the student's proficiency and it is a compulsory academic requirement in engineering courses, is accessible to the student even in the college and the fact that parents do not supervise or resent the number of hours spent on the net by the engineering student as they think it is the requirement of the curriculum.

This makes the engineering students inhabiting a highly wired environment to be more susceptible to addiction than non-engineering students.

Dependents used multiple types of net and those with faster accessibility such as mobiles. And this could be an indicator of tolerance, as faster access, longer use shows higher need for stimulation in those with addiction.

Dependents used more interactive features of the web such as massive multi load on line role playing games (MMORPG)[16] and social networking (face book)This contradicts the earlier study of 2003[11]. That did not find differences in the usage of applications between addicts and non –addicts. Perhaps internet has more sophisticated interactive web sites after nine years and is easier to see the differences now.

Boys with on line role playing game addiction may have social anxiety, interpersonal hostility, dissociative re-enactment of real life trauma on line. As per DSM V internet gaming disorder most often involves specific internet games , and preferred games vary over time as new games get popularized it is unclear if gaming disorders vary by game type. As some of the earlier studies , elsewhere show that boys with internet addiction have more number of traumatic events in the previous year[5]. And the compulsive nature of role playing games could be a symptom of post-traumatic stress disorder. Ragging of junior students by seniors continues to be a significant traumatic event among professional college students in India[16]. And internet addiction could show a compulsive behaviour following trauma[17-21].

Females outnumbered males in social networking and males outnumbered in multi load games. These findings support the earlier views that adolescents with social anxiety used interactive features compulsively to overcome the anxiety inherent in direct social interactions[15]. Boys tend to seek games with themes of power , dominance, control or violence. It is often associated with low self esteem and dissatisfaction in life. Women sought close friendships and preferred anonymous communication in which they could hide their appearence. Virtual communities gave women a sense of belonging and an ability to share their feelings and emotions in private and convenient ways[15].

Those with addiction used the net for more than 5 hours a day (45.5%) and more than 10hours per week (81 %). They also missed study hours (40 %) classes and even assessments. Many of the engineering students who became addicted to the net were repeating the academic years. There was significant social impairment, more arguments with parents and isolation from groups. This finding supports the earlier study from India that those who are net dependent felt more loneliness than those who were not[10].

There was more insomnia (26.8 %) day time sleepiness (20%) eye strain (19%) and numbness, tingling of wrists (14%) suggestive of physical impairment due to addiction. The symptoms of tingling, numbness of the wrists can lead to carpal tunnel syndrome. This finding also coincides with the earlier studies that show that dependents lost sleep as they could not log off long past bed time[5,6,11].

The major limitation of the study was employing a questionnaire method, rather than a direct in-depth interview. There is a need to improve the reliability and validity of the criteria needed to make the diagnosis of internet addiction. The study has mainly used exploratory rather than confirmatory data analysis techniques to investigate the degree of association(Chi –square test and student t-sest) rather than causal relationships between variables. Being a cross sectional study, it does not specify the outcome or longitudinal course of the addiction. Predictive factors for addiction such as possible genetic influence potential biological factors based on brain imaging data and co -morbidity need future research.

In conclusion our study suggests that Internet addiction is prevalent among Indian college students, more common among men, more common among students in highly wired environment, some applications with interactive features are more addictive such as MMORPG in men and social networking in women causing significant academic, social and physical impairment, needs further research to determine the course and outcome and to devise effective treatment strategies.

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