Prevalence of internet addiction and factors associated with it in Indian engineering students - A cross sectional study

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Abstract

Background: Internet had become an integral part of modern life. However, loss of control over internet use might lead to negative impact on individual psychological wellbeing, peer and family interactions, academic performance and daily life functions. This paper attempts to understand the prevalence and risk factors for internet addiction in a selected engineering university students of India. **Methodology:** The study was a descriptive cross-sectional study. The study population included undergraduate students studying in an engineering university. The final required sample size was rounded off to 400. The Institution was selected by convenient sampling. Information regarding the ownership of electronic devices, type of internet access and engagement with various activities over the internet, duration of internet use, etc. Internet addition level was assessed by 20 items Young's Internet addiction test (IAT). **Results:** Among the study population, 25.75% were belonging to the age of 22 years and 64% were males. It was found that 36.75% were possible addicts and 0.03% were addicts as assessed by the standardized cut off values of Young Internet addiction test. **Conclusion:** The results of the present research showed that the prevalence of internet addiction among the students was appreciably high. It was observed that a greater number of students were possible addicts who can be turned into addicts if the right measures are not taken. Thus, early awareness is important for the policymaker in order to examine the issue and implement certain measures to prevent it.
Key Words: Internet addiction, university students, India, Young's Internet addiction test.

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INTRODUCTION

Internet is a collection of millions of computers around the globe and connects each other. It acts as a medium that does not have the limitation of information on each user, and many people are highly dependent on the internet as it has many advantages that can simplify a lot of work; also it is helpful for efficiency and effectiveness.[1] The Internet is an integral part of modern life, and it provides an easy and immediate way for people to explore information and communicate with other people all over the world. However, loss of control over internet use might lead to negative impacts on individual psychological wellbeing, peer and family interactions, academic performance and daily life functions.[2,3] The term "internet addiction" was first introduced by Goldberg in 1995 to describe "the pathological and compulsive use of the internet". Goel categorized this term as a subgroup of behavioural addictions.[4] Problematic internet addiction or excessive internet use is characterized by excessive or poorly controlled preoccupations, urges, or behaviours regarding computer use and internet access that lead to impairment or distress.[5] Internet addicts will lose themselves in

anything from online gaming, internet gambling or online pornography.[6] College students are believed to be at high risk with a marked increase in their internet usage worldwide.[7] They are vulnerable to developing a dependence on the internet, more than most other segments of society. This can be attributed to several factors including the following: Availability of time; ease of use; unlimited access to the internet; the psychological and developmental characteristics of young adulthood; limited or no parental supervision; an expectation of internet/computer use implicitly if not explicitly, as some courses are internet-dependent, from assignments and projects to communicate with peers and mentors; 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.[8] This paper attempts to understand the prevalence and risk factors for internet addiction among university students of India.

MATERIALS AND METHODS

The study was a descriptive cross-sectional study. The study was conducted in a selected higher educational institution, in the field practice area of Katuri medical college and hospital. The study population included undergraduate students studying at an engineering university. The sample size was calculated assuming the proportion of internet addition as 46.81% as per the study by Nath K *et al.*.[9] The other parameters considered for sample size calculation were 5% absolute precision and 95% confidence level. The required sample size as per the above-mentioned calculation was 383. To account for a non-participation rate of about 5%, another 19, subjects were needed. The final required sample size was rounded off to 400. The institution was selected by convenient sampling. The required number of students were selected into the study by stratified random sampling, stratified by year and branch to provide equal representation to different branches and different years of study. Eligible participants, willing to participate in the study were included in the study after obtaining informed written consent. Demographic parameters like age, gender, course of study, year of study, parental education, occupation were

collected. Information regarding the ownership of electronic devices, type of internet access and engagement with various activities over the internet, duration of internet use, etc. were also collected using a structured proforma. Internet addiction level was assessed by 20 items Young's Internet Addiction Test (IAT). The Internet Addiction Test (IAT; Young, 1998) was developed to measure the presence and severity of internet and technology dependency among adults. As a growing cultural and clinical phenomenon, internet addiction is viewed as a new clinical disorder requiring assessment and treatment. It measures the severity of self-reported compulsive use of the internet for adults and adolescents.[10] A score of 0 to 19 was considered as less than average internet user, 20-49 as an average internet user, 50 to 79 as a possible addict and 80 to 100 as an addict. Initially, Young developed an 8-item diagnostic questionnaire (questions were asked on the preoccupation with Internet use, investment of the increasing amount of time, repeated unsuccessful effort to cut down, mood symptoms on cutting down use, staying online longer than intended, jeopardized personal or occupational life, concealment of the extent of involvement in the Internet to others, and whether the Internet was used as an escape) and defined Internet addicts as those with 5 positive responses. Later, Young developed a 20-item questionnaire, Young's 20-Item Internet Addiction Test, wherein persons with a score of 80–100 with significant life impairment were regarded as addicts. This 20-item questionnaire was used in our study. Informed written consent was obtained from all the study participants, after explaining the voluntary nature of participation. Confidentiality of the participants was maintained throughout the analysis and reporting of study results. Internet addiction was considered as the primary outcome of interest. Descriptive analysis was carried out by mean and standard deviation for quantitative variables, frequency, and proportion for categorical variables. The association between explanatory variables and categorical outcomes was assessed by cross-tabulation and comparison of percentages. Chi-square test/ Fisher's was used to test statistical significance. P-value < 0.05 will be considered statistically significant. Data was analysed by using coGuide software, V.1.0.[11]

RESULTS

Table 1: Summary of baseline parameters among the study population (N=400)

Baseline Parameter	N (%)
Age	
17	81 (20.25%)
18	27 (6.75%)
19	63 (15.75%)
20	57 (14.25%)
21	69 (17.25%)
22	103 (25.75%)

Gender	
Male	256 (64%)
Female	144 (36%)
Father's education	
Illiterate	117 (29.25%)
Up to school	194 (48.5%)
Graduate	62 (15.5%)
Postgraduate	27 (6.75%)
Mothers education	
Illiterate	219 (54.75%)
Up to school	128 (32%)
Graduate	36 (9%)
Postgraduate	17 (4.25%)
Fathers occupation	
Business	72 (18%)
Self-employed	48 (12%)
Private	35 (8.75%)
Government	235 (58.75%)
Professional	10 (2.5%)
Mothers occupation	
Homemaker	229 (57.25)
Business	42 (10.50%)
Self-employed	33 (8.25%)
Private	25 (6.25%)
Government	48(12%)
Professional	23 (5.75%)

Among the study population, 256 (64%) were male participants and the remaining 144 (36%) participants were female. Among the father's education, 117 (29.25%) participants were illiterate, 194 (48.5%) participants were up to school, 62 (15.5%) participants were graduate and 27 (6.75%) participants were postgraduate. Among the mother's education, 219 (54.75%) participants were illiterate, 128 (32%) participants were up to school, 36 (9%) participants were graduate and 17 (4.25%) participants were postgraduate. Among the father's occupation, 72 (18%) participants were own business, 48 (12%) participants were self-employed, 35 (8.75%) participants were a private job, 235 (58.75%) participants were government job and 10 (2.5%) participants were professional workers. Among the mother's occupation, 229 (57.25) participants were homemakers, 42 (10.50%) participants were own business, 33 (8.25%) participants were self-employed, 25 (6.25%) participants were a private job, 48(12%) participants were government job and 23 (5.75%) participants were professional workers. (Table 1)

Table 2: Ownership of electronic devices and internet access among the study population

Parameter	Number	Percentage
Ownership of devices		
Smartphone	365	91.25%
Laptop	155	38.75%
Tablet	71	17.75%
Personal desktop	39	9.75%
Internet access		
Mobile internet	365	91.25%
WIFI	78	19.50%
LAN	41	10.25%

Among the study population, 365 (91.25%) participants used a smartphone, 155 (38.75%) participants were use laptops, 71 (17.75%) participants were use tablet and 39 (9.75%) participants used personal desktop. Among the people with internet access, 365 (91.25%) participants were using mobile internet, 78 (19.50%) participants were using the WIFI connection and 39 (9.75%) participants were using LAN connection. (Table 2)

Table 3: Prevalence of internet addiction as per Young Internet addiction test (IAT)

Internet addition category (Based on Young Internet addiction test scores)	Number	Percentage
Less than average (0 to 19)	173	43.25
Average user (20 to 49)	78	19.50
Possible addict (50 to 79)	147	36.75
Addict (80 to 100)	12	0.03

Among the study population, 147 (36.75%) were possible addicts and 12 (0.03%) were addicts as assessed by the standardized cut off values of Young Internet addiction test. (Table 3)

Table 4: Heat map showing the activity pattern of internet usage based on user-reported ranking

S. No	Internet use activity	The user reported rank based on the duration of usage					
		1	2	3	4	5	6
1	Social media (Facebook/twitter/Instagram etc)	87	114	83	31	49	36
2	WhatsApp/telegram/other social networking	109	97	63	44	49	38
3	Watching entertainment videos (You tube/tik tok)	123	86	38	93	56	4
4	Educational videos/content	48	58	139	112	23	20
5	Pornography	12	18	34	51	118	167
6	News and Politics	21	27	43	69	105	135

Watching entertainment videos, spending time on social media platforms and engaging with social networking activities were ranked as the top 3 internet-based activities by the majority of the study population. Watching educational videos or content has been ranked as the 3rd or 4th priority activity by a major proportion of study subjects. Watching pornography and spending time reading the news and political information was reported as the major activity by a minor proportion of study subjects. (Table 4)

DISCUSSION

Internet addiction (IA) is an emerging phenomenon among the youth of India. It has been found to be associated with mental health problems. Previous literature shows studies with higher Prevalence among students and adolescents. In the study conducted by Gupta A et al..[12] The prevalence of IA was 25.3%. The mean (standard deviation) age of the participants was 19.1 (1.02) years and 62.1% were males. Another study concluded that internet addiction is widely prevalent among school-going adolescents and needs attention.[13] According to a study by Madhusudan M et al.[14] The Prevalence of internet addiction among the study subjects was 94.5%. Teenagers are in the most vulnerable age group, because they may develop more serious complications than other age groups.[15,16] Majority of the participants of the present research were teenagers and young adults which indicated that the young generation is more prone to get addicted to the internet. Males were more involved as compared to females. It was also observed that smartphone users with mobile internet were predominant. A cross-sectional study showed that the Prevalence of smartphone addiction among participants was 29.8% (30.3% in males and 29.3% in females). Factors associated with smartphone addiction in male students were use of game apps, anxiety, and poor sleep quality. Significant factors for female undergraduates were use of multimedia applications, the use of social networking services, depression, anxiety, and poor sleep quality.[17] The majority of the parents in the current study population were illiterate. It can be related that less awareness of the parents towards the harmful impact of the internet can lead to internet addiction in children. Parental influence is stronger when parents actively engage in mediating the online activities of their teenagers.[18] Internet use is becoming an unavoidable requirement for many of the individuals, mostly young adolescents and adults.[19,20] In the current study it was found that an appreciable number of students were possible addicts and few were addicts according to Young's Internet addiction test. Kuss DJ et al..[21], concluded that IA was present among a substantial proportion of university students which can inhibit their academic progress and impact their psychological health. Another research showed that internet addiction was current in higher secondary school students, and it has a significant relationship with depression, anxiety, and stress.[22] One study suggested that internet addiction is more common among men than women with differing patterns of use causing significant academic, social and physical impairment.[23] In a survey conducted by Chi X et al..[24] among the participating students, 15.2 percent were classified as having Internet addiction. Furthermore, students who reported more indigent parent-child relationships, higher levels of depression, and lower levels of psychosocial competence were more likely to report behaviours indicative of internet addiction. Online social networking sites (SNSs) have gained increasing popularity

in the last decade, with individuals engaging in SNSs to connect with others who share similar interests. The perceived need to be online may result in compulsive use of SNSs, which in extreme cases may result in symptoms and consequences traditionally associated with substance-related addictions. [21] In present study results showed that the top 3 activities were watching entertainment videos, spending time on social media platforms and engaging with social networking activities. It was observed that a smaller number of the study population had reported watching pornography and spending time reading the news and political information as a major activity. Findings of a qualitative study indicate that males viewing internet pornography can be affected by psychosocial and mental health issues.[25]

CONCLUSION

The results of the present research showed that the prevalence of internet addiction among the students was appreciably high. It was observed that a significant number of students were possible addicts who can be turned into addicts if the right measures not taken. Thus, early awareness is important for the policymaker in order to examine the issue and implement specific measures to prevent it. Currently, the pressing priority should be to create awareness among the public, plan public health policies concerning this behavioural addiction. Internet addiction among students should be given more attention major research activities should be carried out in the same field. Parents should be made aware of the health impacts of internet addiction. Colleges and universities should arrange counselling sessions for those who are under internet addiction.

Ethical approval: Not obtained considering the observational nature of study, with no risk to study participants.

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