

Original Research Article

Prevalence and associated factors of internet addiction among college students using smartphone in Tamil Nadu: a cross-sectional study

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ABSTRACT

Background: There has been rapid growth on the internet not only in India, but also in worldwide. It is a major public health problem affecting an enormous number of individuals. The objective of the present study was to determine the prevalence of Internet addiction and its associated factors among college students using smartphone in Tamil Nadu.

Methods: A cross sectional study was conducted in Annamalai University from October 2019 to October 2020. A total of five hundred students from various streams (medicine, dental, bachelor of physiotherapy, engineering, arts and science) were selected conveniently and a self-administered questionnaire was used to collect data. A questionnaire consisting of socio-demographic data, questions on internet usage and Young's internet addiction test were used to gather data. Descriptive Statistics was defined in terms of percentage and frequency. Inferential statistics was analysed with Chi-Square test.

Results: Out of the five hundred students, 45.4% were males, 54.6 % were females .The users were divided into groups, 38.8 % as normal users, 37% as mild addicts, 21% as moderate addicts, 3.2% as severe addicts. Thus overall prevalence of internet addiction was 61.2%. Degree of internet addiction was significantly associated with age, time spent daily on the internet and using internet for social media, online communications and playing online games.

Conclusions: The present study showed a prevalence of internet addiction is high among college students. Therefore, it's essential to make awareness among the students to enhance their quality of life through the prevention of addictive usage of the internet.

Keywords: Internet addiction, College students, Risk factors, Prevalence

INTRODUCTION

Internet has become an important part of our lifestyle. It is being used expansively throughout the world, especially among adolescents and youth.¹ It is used broadly in various areas of life like education, research, information exchange, communication, online booking, cashless transactions, electronic mail, E-commerce and entertainment. There is a rise in accessibility and affordability of Internet at homes, schools, colleges, and

Internet browsing centres.² As of January 2021 there have been 4.66 billion active internet users globally, which is 59.5 Percent of the global population. Of this total, 92.6 percent (4.32 billion) connected the internet via Smartphone. Smartphone has now become the foremost important channel for internet users. With smartphone and cheap rates of mobile data, internet is at the fingertip to the overall population.³ By now, a world without the internet is unbelievable. Connecting millions of people worldwide, the internet is a key pillar of the current information society. Of 2019, Asia has the highest

number of online users, over 2.3 billion at the recent count. Europe was ranked second with nearly 728 million internet users. In 2020, India had nearly 700 million internet users throughout the country. This amount was projected to raise to over 974 million users by 2025, indicating an enormous market potential in internet services for the South Asian country. In fact, India was ranked as the second biggest online market worldwide after China in 2019. The amount of internet users has been increase in both urban also as rural regions, indicating a vigorous growth in access to internet.

Mobile phone have become an important tool in our everyday life. In addition to enabling call services, mobile phones also support other functions like text messages, WhatsApp, internet browsing, bluetooth, gaming, email, photography etc. Mobile phones offering these services are called smartphones.⁴ The increasing popularity of smartphones has led to various difficulties due to excessive use. Excessive smartphone usage can affect their concentration at college or work and may cause physical difficulties, like neck stiffness, dry eyes, wrist or backache, and insomnia.⁵

The term “internet addiction” was proposed by Dr. Ivan Goldberg in 1995 for pathological compulsive internet use. It is known by various terms like pathological internet use, problematic internet use, compulsive internet use and internet overuse within the literature. Internet addiction are often described as a person’s inability to regulate his or her own use of internet causing disturbances and impairment in fulfilment of labour, social, and private commitments.³ Hence, excessive use of internet badly affects ones physical, mental and social health alongside academic performance. Physical problems include backache, headache, insomnia, weight gain or loss and vision problems. Mental problems include depression, low self-esteem and anxiety, that life without internet would be empty, dull and unhappy. Academic problems include missing classes, significant fall in results and reduction in study habits and poor interest in extracurricular activities.⁶ In fact, younger internet users (18 -25 years old) were more in danger of becoming internet addicts than older users.⁷

In the last decade, there was a nearly six fold increase in internet usage worldwide, and about 40% of the world is in touch of the internet. During a latest study, Xin et al revealed that studies on Internet addiction have reported variations in prevalence world-wide. The USA and in Europe, rates ranged from 7.9 to 25.2% among young people (2012) while the Africa and Middle East rates ranged from 17.3 to 23.6%. Within the Asian Studies have shown a greater variation in prevalence among adolescents and young people, starting from 8.1 to 50.9%.⁸ Smartphone and internet usage have become common practice especially among college students.⁹ College students are more susceptible groups to internet addiction due to various reasons like availability of time, ease of use; unlimited access to the internet,

psychological and developmental characteristics of young adulthood, limited parental supervision and also, internet offering a path of escape from exam stress, all of which make internet overuse a significant cause of concern for parents and faculty.³

In addition, Internet usage has also become an important public health problem as there have been plenty of reports of health hazards, both physical and mental, in people of all age groups.⁹ But not much research has been conducted on these issues within the study area. Hence the present study was conducted to find out the prevalence of Internet addiction and its associated factors among college students using smartphone in Tamil Nadu.

METHODS

The study was conducted among the students of Annamalai University, students aged 18-25years of various streams (medicine, dental, and bachelor of physiotherapy, engineering, arts and science).The Annamalai University is found in Chidambaram, Cuddalore district of Tamil Nadu. The study was carried out for a period of 12 months from October 2019 to October 2020. Consistent with the sample size, study participants from various faculties of Annamalai University were selected by convenience sampling.

Inclusion criteria

Inclusion criteria for current study were; students aged (18-25years) using smartphones, history of using internet for the past 1year and willing to offer consent.

Exclusion criteria

Exclusion criteria for current study were; students those who are less than 18years of age, not using internet or a history of using internet for less than a year and not willing to offer valid consent

Assessment tool

A Pretested semi-structured questionnaire was developed and administered to the study participants and consists of three parts, part 1: consisted of Socio-demographic details like age, sex, and place of stay. Part 2: consisted of questions on pattern of internet usage includes purpose, duration and place of internet usage. Part 3: consisted of Young’s internet addiction test.

Data collection procedure

Prior permission was obtained from the concerned authorities of all faculties, students who were willing to participate included within the study. Study was conducted during free hours of college. The questions were anonymous and self-administered. Teachers left the class during 20 minutes period to avoid any bias, influence or hesitancy. After obtaining informed written

consent, a pretested Self-administered questionnaire were distributed to the participants within the classroom setting. The average time took to finish the question by the participants was 20 minutes and collected back. Young's 20-item scale for Internet addiction (YIAT 20) developed for screening and assessing levels of Internet addiction, has been the foremost commonly used and well-tested for its psychometric properties. It's a 20-item questionnaire measured on the 5-point Likert Scale. The items of the Internet addiction test, each graded from one (rarely) to five (always), include obsessive behaviour associated to internet usage, the work-related or educational difficulties, and lack of competence at family, problems in personal relations, and emotional problems. After all the questions have been answered, numbers for each response are added to obtain a final score. The greater the score range, the higher the level of addiction; normal range: 0-30 points, mild: 31-49 points, moderate: 50-79 points, and severe: 80-100 points.

The Reasons for selecting Young's internet addiction test for the study was that it's the primary universal psychometric measure and hence has been widely and frequently used across many studies globally, is self-completed, has been validated on adult and adolescent populations, and has good internal consistency reliability also as concurrent validity. In a latest meta-analysis study drawing from an enormous sample of studies conducted to determine the overall value for the reliability YIAT20, the mean difference showed that it is more reliable in college students and most likely in Asia. The overall Cronbach's calculated from the studies was 0.889 (95% confidence interval;CI 0.884-0.895). The standard deviation of the alpha was low, at 0.049.

Statistical analysis

Collected data were entered in Microsoft excel and analysed with SPSS software version 23. Socio-demographic variables were denoted by frequency tables. The prevalence of Internet addiction was defined in terms of percentage. An association between 2 categorical variables was analysed by using Chi-square test and p <0.05 was considered to be statistically significant. Informed consent was obtained from participants by explaining the purpose of the study and giving assurance about the privacy of the data.

RESULTS

The present study was conducted among 500 students in the age group of 18 year to 25 years. Majority 60% of the study participants were of 18-20 years of age, whereas 40% of the students were of 21-25 years. Out of the 500 students 227 (45.4%) were males and 273 (54.6%) were females (Table1). All the study participants were using internet on their smartphone. Most of the participants 439 (87.8%) used internet daily for less than 5hrs and 61 (12.2%) of the study participants used internet for more than 5 hrs. Majority of the students used internet for

academic, social networking, communication and gaming as primary purpose of internet usage on smartphone (Table 2).

Table 1: Sociodemographic characteristics of college students.

Variables	Frequency (N=500)	%
Age (years)		
18-20	300	60
21-25	200	40
Sex		
Male	227	45.4
female	273	54.6
Course of study		
MBBS	127	25.4
BDS	148	29.6
BPT	38	7.6
Arts and science	76	15.2
Engineering	111	22.2
Place of stay		
Hostel	416	83.2
Home	84	16.8

Table 2: Internet use practices.

Internet use practices	Frequency (N=500)	%
Years of internet use		
<2	216	43.2
3-6	242	48.4
7-10	38	7.4
>10	4	8
Expenditure on internet per month(Rs)		
<200	202	40.4
200-500	258	51.6
500-1000	26	5.2
>1000	14	2.8
Daily internet use duration (hrs)		
<5	439	87.8
>5	61	12.2
Purpose of internet use		
Academic	437	87.4
Social Networking	443	88.6
Communications	314	62.8
Gaming	153	30.6

According to the young's internet addiction scale, it was found that 306 (61.2%) reported Internet addiction and 194 (38.8%) reported normal internet usage. The internet addiction scores revealed 194 (38.8%) in the score range of (0-19) i.e.no addiction, hence normal users. 185(37.0%) in the score range of (20-49) i.e. mild internet addiction and 105 (21%) in the score range of (50-70) i.e. Moderate internet addiction and 16 (3.2%) in the score range of (80-100) i.e. Severe internet addiction. Hence the

prevalence of internet addiction among the students in the present study was 37% mild, 21% moderate, 3.2% severe, while 38.8% participants reported normal internet usage (Figure 1).

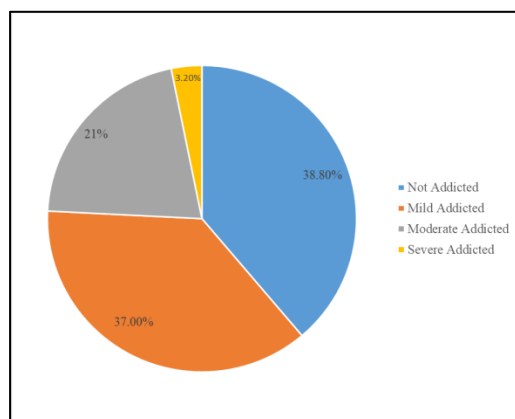


Figure 1: Prevalence of internet addiction.

Internet addiction was significantly associated with age, Internet usage per day and primary purpose of internet usage which is social networking, communication, online gaming. The present study revealed that the higher prevalence of internet addiction among young participants. Also prevalence of internet addiction was high among students who used internet for a longer time i.e. 5 hours or more per day ($p=0.000$) and for social networking ($p=0.014$), communication ($p=0.000$), online gaming ($p=0.025$) compared to those used for less than 5 hours per day and for academic purpose (Table 4).

DISCUSSION

The aim of the present study was to determine the prevalence of Internet addiction and its associated factors among college students using smartphone in Tamil Nadu. Using the Young's internet addiction test in the present study, 61.2% of the study participants were found to have internet addiction among them 37% had mild, 21% had moderate and 3.2% had severe internet addiction, which is similar to a study conducted by Mali et al in India where internet addiction was found to be 61.33% among them 41.33% had Mild, 18% had Moderate and 2% had severe internet addiction.¹⁰

The prevalence of internet addiction in the present study was higher than the prevalence of internet addiction that was done in different universities such as three medical schools across three countries (Croatia, India, and Nigeria) 49.7%, and the United States 25.1%, Jordan 40%, Nepal 35.4% and in various parts of India 19.85% to 42.9%.^{1,11-16} A higher prevalence was also reported in the study by Zenebe et al found that the prevalence of internet addiction among the current internet users was 85%.¹⁷ Variations in the prevalence may be due to the cut-off point of Young's internet addiction Test, difference is in the tools, the size of the sample and the

difference in the time between the studies. The present study shows significant association between internet addiction and age ($p=0.046$). Similar results were observed in a study carried out by Hassan et al on young adults in Bangladesh revealed that the young adults often show a high prevalence rate of internet addiction. Sakhivel et al also reported that age was significantly associated with higher rates of internet addiction.¹⁹

The students are the foremost susceptible group to internet addiction, because of larger level of freedom, leisure time, spending longer time on social media, and less controlled by their parents.²⁰ The amount of time that a person spends on the internet is a vital factor to increase the risk of internet addiction. In the present study, results show that the participants in the study, who were spending a long time (more than 5 hour per day) on the internet had higher levels of internet addiction ($p=0.000$). This is similar to the study of the innocent Mboya et al among students of medical and allied health sciences in Tanzania found that internet addiction was significantly associated with the internet usage for a long period of time, i.e. 5 hours or more per day.²¹

The results of several studies are consistent, which indicates that the severity levels of Internet Addiction increase with increasing duration of internet usage.^{22,23} Spending more time on the internet per day has a negative effect on the academic performance of the students. When it is used in a positive manner, the internet is more useful and informative both academically and socioeconomically, and it is capable of assisting university students to achieve their goals in life.²¹ Using internet for social networking, communication, online gaming were significantly associated with internet addiction ($p=0.014$, $p=0.000$, $p=0.025$) compared to those used for academic purposes. Similar results were observed in a study carried out by the innocent Mboya.²¹ Srijampana et al in their study found that moderate users and the possible addicts used the internet mostly for social networking, downloads, and online games when compared to academic purpose.²⁴

The present study is in line with Bangladeshi studies, which show that online communication, social media use, and using internet for recreation purposes are related to internet addiction.¹⁸ Spending a lot of time engaged in online activities (social networking, communication, online gaming), which is likely to have an impact on the academic achievement of the students, which increases the risk of physical, mental, psychosocial consequences.²¹

Limitations

Limitations of current study are; as this present study is a cross-sectional, therefore, causal relationship of internet addiction and associated factors has not been found. The tool used for collection of data is a self-reported measure to assess internet addiction, hence is subject to response-related biases and recall bias.

Table 3: Association of socio-demographic and internet use practices with internet addiction (n=500).

Variables	Not Addicted (%)	Mild Addicted (%)	Moderate Addicted (%)	Severe Addicted (%)	Chi-square	P value
Age in years						
18-20	105(35.0)	115(38.3)	66(22.0)	14(4.7)	8.550	0.046*
21-25	89(44.5)	70(35.0)	39(19.5)	2(1.0)		
Sex						
Male	77(33.9)	89(39.2)	51(22.5)	10(4.4)	5.412	0.144
female	117(42.9)	96(35.2)	54(19.8)	6(2.2)		
Place of stay						
Hostel	163(39.2)	152(36.5)	85(20.4)	16(38)	3.846	0.279
Home	31(36.9)	33(39.3)	20(23.8)	0(0.01)		
Daily internet use duration (hrs)						
<5	186(42.4)	169(38.5)	81(18.5)	3(0.7)	96.343	0.000*
>5	8(13.1)	16(26.2)	24(39.3)	13(21.3)		
Purpose of internet use						
Academic					1.958	0.581
(Yes)	165(37.8)	163(37.3)	95(21.7)	14(3.2)		
(No)	29(46.0)	34(34.9)	10(15.9)	2(3.2)		
Social networking					10.687	0.014*
(Yes)	168(37.8)	158(35.7)	101(22.8)	16(3.6)		
(No)	26(45.6)	27(47.4)	4(7.0)	0(0.00)		
Communications					19.542	0.000*
(Yes)	130(41.0)	98(38.9)	81(25.6)	8(2.5)		
(No)	64(35.0)	87(47.5)	24(13.1)	8(4.4)		
Gaming					9.377	0.025*
(Yes)	54(35.3)	49(32.0)	42(27.5)	8(5.2)		
(No)	14.0(40.3)	13.6(39.2)	63(18.2)	8(2.3)		

*Statistically significant association at $p < 0.05$

CONCLUSION

The prevalence of internet addiction is high among college students. Increasing rate of internet addiction among students affect their mental and physical health badly. So it is essential to understand the importance of preventing internet addiction and promoting safe and healthy use of internet. There is a need to make awareness among the students in order to enhance their quality of life.

Recommendations

Increased awareness regarding smartphone etiquettes, regarding the amount of time that is being spent on internet per day and it should be communicated among all the students of the college. The concept of daily "net free hours" should be introduced within the daily routines of the students.

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