

Original Research Article

A Cross Sectional Study on the Prevalence of Internet Addiction and Its Association with Mental Health Among College Going Students in Nanded City

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Abstract: The Internet is a vital part of modern life and culture for so many peoples. Most of the college students use the internet for social interaction and communication as well as for their education. But, just as they use the internet to take help in their education, they use social sites to enrich their social lives. We hypothesized, internet addiction leads to poorer mental health status. The aim is to evaluate prevalence of internet addiction and its effect on their mental health status among college going students in nanded city. This cross-sectional study was carried out in Nanded city. To evaluate internet addiction, Young's Internet Addiction scale was used and for assessment of mental health, General Health Questionnaire 12-items was used. Out of 287 study subjects, nearly equal gender distribution was seen. Mean age was 19.45 ± 1.13 yrs. Our hypothesis was proven significant with OR 2.28. In our study, mild internet addiction was seen among 31.36 % of study subjects and moderate internet addiction was in 34.49%. There is a need to evolve a comprehensive approach combining periodical awareness to the students, integrating good practices of internet use.

Keywords: Internet addiction, YIAT, GHQ-12, Mental health, college students

INTRODUCTION

The Internet is a vital part of modern life and culture for so many peoples [1]. It is leading them to develop an incontrollable need to use those devices and check online activities at all hours of the day. Recent years have seen a concern for developing its healthy use and develop healthy life style [2]. Internet use has both good and bad aspects. The good consequences of Internet use include enhanced self-confidence, increased frequency of communication with family and friends, and feelings of empowerment [3].

Internet use plays an integral part in many adolescents' daily lives, yet the effects of internet use on adolescents' emotional and behavioural development remains ambiguous [4]. Identifying problematic Internet use is challenging because the Internet can serve as a tool in nearly every aspect of our lives communication, shopping, business, travel, research, entertainment, and more [5]. Now a days it is hard for most of us to imagine a world without instant and continuous access to internet [6].

Clinical research on behavioural addictions has focused on compulsive gambling, overeating, and compulsive sexual behaviour. Similar addiction models have been applied to technological overuse, computer dependency, excessive television viewing, and obsessive video game playing [7]. The other controversial element related to the use of the Internet addiction is that unlike chemical dependency, the Internet offers several direct benefits as a technological advancement in our society and not a device to be criticized as "addictive" [8].

Since the mid-90s the term "Internet Addiction" has been proposed and different opinions have been put forward as to whether problematic Internet use should be considered as a psychiatric disorder or a mental illness similar to other well established addictive disorders [9]. Young was the first to find that excessive use of the Internet for non-academic and nonprofessional reasons was associated with unfavourable effects to academic and professional performance. Greenfield found that approximately 6% of those who use the Internet appear to do so

impulsively, frequently to point of grave harmful consequences [10]. Diagnostic and Statistical Manual Of mental Disorders Fifth Edition defines Internet addiction disorder is a pattern of excessive and prolonged Internet gaming that results in a cluster of cognitive and behavioural symptoms, including progressive loss of control over gaming, tolerance, and withdrawal symptoms, analogous to the symptoms of substance use disorders [11].

Most of the college students use the internet for social interaction and communication as well as for their education. But, just as they use the internet to take help in their education, they use social sites to enrich their social lives [12]. It was seen among adolescents that usually have poorer self-control, worse self-regulation, and poorer cognition as compared to adults and are considered the most vulnerable group to the temptations of the internet [13]. Psychological and environmental factors in the lives of college students may leave them disproportionately susceptible to internet addiction [14].

Research on internet addiction demonstrated that the greater use of the internet is associated with some social and psychological variables such as, declines in the size of social circle, depression, loneliness, lower self-esteem and life satisfaction, sensation seeking, poor mental health, and low family function [15]. In excess of half of the adolescents with Internet Addiction were reported as having poor academic performance [16]. University students are much more likely than the general population to use the Internet, study conducted by other authors shows much use of internet in adolescents in different areas of India [12,17,18]

India's base of about 120 million Internet users is currently the third-largest in the world and the pattern of online behaviour is rapidly converging with that of users in more developed countries. India is likely to have the second-largest user base in the world, and the largest in terms of incremental growth, with 330 million to 370 million Internet users in 2015 [19, 20] Today, 1.2 billion adolescents stand at the crossroads between childhood and the adult world. Around 243 million of them live in India [21].

The penetration of mobile internet has seen a more than threefold increase since 2010, reaching 24% of the population by mid-2015. This figure will almost double again in the next five years to reach 44% of the population by 2020, with around 600 million mobile internet subscribers by this date [22].

We hypothesized, internet addiction leads to poorer mental health status. Considering huge number of adolescents and increase in penetration of mobile

internet, paucity of an evidence on internet addiction among them, it was found necessary to evaluate prevalence of internet addiction and its effect on their mental health status among college going students in nanded city.

METHODOLOGY

This cross-sectional study was carried out in a Yashwant college which is having different streams of education (Arts, Science, Commerce) in the Nanded Waghala City Municipal Corporation during the period March – April 2016.

The sample size was calculated considering prevalence of Internet addiction to be 56.52 % from study conducted by Paul AV *et al* [6], and for a 90% confidence level and 5% absolute precision of the estimate, the final sample size came to be 265.

College approval and written informed consent were obtained for all students who participated. A pilot study was done on 40 students; subsequent suggestions were incorporated before the start of the study.

Data collection and measures of Internet addiction

Pre-validated, Pre-tested, structured questionnaire was developed. All questionnaires were distributed to the participants in campus settings and were collected onsite after 30 min. The questionnaires were anonymous and self-administered.

The questionnaire contained three parts:

1. Socio demographic information
2. Young's Internet Addiction Test (YIAT)
3. General Health Questionnaire 12-items.

Young's 20-item scale for Internet addiction (YIAT) was applied to qualify for the prevalence of Internet addiction. It is a 20-item questionnaire measured on the five-point likert Scale. After all the questions have been answered, numbers for each response are added to obtain a final score. The higher the score range, the greater the level of addiction; normal range: 0-30 points, mild: 31-49 points, moderate: 50-79 points, and severe: 80-100 points [10]. The excellent psychometric properties of the questionnaire are well-documented in the literature. YIAT, developed for screening and measuring levels of Internet addiction, has been the most widely used and well-tested for its psychometric properties [23].

In a recent meta-analysis study drawing from a large sample of studies conducted to determine the overall value for the reliability YIAT, the mean differences showed that it is more reliable in college students and probably in Asia. The overall cronbach's computed 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.

Widyanto and Mcmurran performed the most comprehensive study on the psychometric properties of YIAT, where a factor analysis of the YIAT revealed six factors (explaining 68% of variance): 1. salience, 2. Excessive use, 3. neglecting work, 4. anticipation, 5. lack of control, and 6. neglecting social life. These factors showed good internal consistency and concurrent validity, with salience being the most reliable ($\alpha = 0.82$). The six factors were all significantly correlated (Pearson's r) with each other, with correlations ranging from $r = 0.62$ to $r = 0.226(23)$. For a study conducted among Japanese college students, a sensitivity of 0.87 and a specificity of 0.98 were reported for the same screening tool [24].

The 12-item General Health Questionnaire (GHQ-12), a brief self-report measure, has excellent psychometric properties as a screening instrument for psychiatric disorders in nonclinical settings [25]. The items focus on various aspects of respondents' psychological disposition, for example problems with sleep (Have you recently lost much sleep over worry?), strain (Have you recently felt constantly under strain?), happiness (Have you recently been feeling reasonably happy, all things considered?) or stress (Have you recently been feeling unhappy or depressed?). The questions compare how the respondents' present state differs from their usual state. For the scoring, a four-point Likert scale (0, 1, 2, and 3) was used with sum score ranging from 0 to 36. Higher score indicates lower psychological well-being [26]. Score upto 18 considered normal and higher than 18 considered high for analysis purpose.

Of the total 310 students who were given the questionnaire, 299 returned completely filled questionnaires, around 5 could not be included in the study as they were not Internet users, and 7 submitted

incomplete forms. Thus, a total of 287 students were finally included in the study.

STATISTICAL ANALYSIS

Data was entered with the help of statistical software Epi Info 7.1.4 ver. Descriptive statistics (percentage, mean, standard deviation, range) were used to summarize baseline characteristics of the study subjects. An association between two categorical variables was analysed by using Chi-square test and p value < 0.05 was considered to be statistically significant. The STATA ver 13.1 was used for statistical analysis of the data collected. Socio-demographic variables have been denoted by frequency tables. The prevalence of Internet addiction was described in terms of percentage.

RESULTS

Table 1 shows some of Socio demographic characteristics of study subjects. The majority of study subjects were in the age group of 19 – 20 years. We found nearly equal gender distribution. Majority of father's were educated Intermediate or Post High School Diploma and above 64.49%. Mothers of majority study subjects were educated High School Completion and above 59.58%.

Table 2 shows prevalence of internet addiction. We found 98 study subjects were normal users, 90 (31.26%) were having mild level and 99 (34.49%) were having moderate level of internet addiction.

Table 3 Association between Internet Addiction and GHQ12 score categories. We found our hypothesis was significant with OR 2.28 (1.19 – 4.36) and p value 0.01.

Table 1: Socio demographic characteristics of study participants (n = 287)

Characteristics	No. of study subjects (n = 287)	Percentage
Age		
17-18 years	57	19.86
19-20 years	174	60.63
> 20 years	56	19.51
Mean \pm S.D.: 19.45 \pm 1.13 yrs.		
Gender		
Male	143	49.83
Female	144	50.17
Year of study		
11 th and 12 th	84	29.27
First	113	39.37
Second	90	31.36
Place of stay		
Own house	184	64.11
Hostel	42	14.63
Rent	61	21.25

Father's education status *		
Professional Degree / PhD	1	0.35
Graduate or Postgraduate	88	30.66
Intermediate or Post High School Diploma	96	33.68
High School Completion	49	17.19
Middle School Completion	14	4.91
Primary School Completion	11	3.83
Illiterate	26	9.06
Mother's educational status**		
Professional Degree / PhD	0	0.00
Graduate or Postgraduate	32	11.15
Intermediate or Post High School Diploma	69	24.04
High School Completion	70	24.39
Middle School Completion	43	14.98
Primary School Completion	28	9.76
Illiterate	38	13.24
Father's occupation status*		
Profession	15	5.23
Semi Profession	14	4.88
Clerk, Shop Owner, Farm Owner	126	44.21
Skilled Worker	92	32.28
Semi Skilled Worker	10	3.48
Unskilled Worker	18	6.27
Unemployed / Retired	3	1.05
Mother's occupational status**		
Profession	5	1.79
Semi Profession	1	0.36
Clerk, Shop Owner, Farm Owner	3	1.07
Skilled Worker	4	1.43
Semi Skilled Worker	0	0.00
Unskilled Worker	7	2.51
Homemaker	260	92.86
* n = 285, ** n = 280		

Table 2: Prevalence of Internet addiction

Prevalence	YIAT criteria	Frequency (n)	Apparent Prevalence
Normal users	Score 0 – 30	98	
Mild	Score 31-49	90	31.36 %
Moderate	Score 50-79	99	34.49 %

Table 3: Association between Internet Addiction and GHQ12 score

Internet Addiction	GHQ score		Chi Square	OR (95% CI)	p value
	Normal (%)	High (%)			
Normal	84 (38.01%)	14 (21.21%)	6.76	2.28 (1.19 – 4.36)	0.01
Addicted	137 (61.99%)	52 (78.79%)			
Total	221	66			

DISCUSSION

In our study, mild internet addiction was seen among 90 (31.36 %) of study subjects and moderate internet addiction was in 99 (34.49%). None of study subject was having severe addiction. (Table 2) Our hypothesis is significant that those who are having internet addiction are two times at a risk of having poor mental health (OR = 2.28, p = 0.01) (Table 3).

There are very few studies conducted on assessing ill effects of internet addiction on mental health. Alpaslan AH et al conducted study on Turkish medical students and found internet addiction was significantly associated with loneliness, alexithymia and probability of suicide [27].

Krishnamurthy S et al conducted study on internet addiction in Bengaluru and found 33.98% of

mild and 8.93% of moderate internet addiction among college students [18]. In which mild levels are similar to our findings, while moderate levels are high in our study.

Sharma A *et al* found total internet addiction prevalence 42.71% [28]. Dhok *et al* found mild level 31.54% and moderate level 14.61% [29]. Goel D *et al* conducted study among students of various faculties across the city of Mumbai with help of Young IAT and Dukes Health Profile. His results shows significant association among them [30].

As the usage of the Internet is growing rapidly every year, Internet addiction has seen among problem among some users. Yoo HJ *et al* conducted study among elementary school students and found significant associations have been found between the level of ADHD symptoms and the severity of Internet addiction in children [31].

Tsitsika A *et al* conducted Case-Control Study among adolescents in Athens, Greece. Internet Addiction among adolescents was significantly associated with comorbid psychiatric conditions, including depression, dysfunctional familial relationships, poor academic performance, and engage in high- risk behaviours [16].

Fontalba AN *et al* studied for mental health promotion to prevent problematic internet use among adolescents in Spain. Their study reveals, internet addiction can be lowered with the help of intervention with promoting mental health [32]. Public awareness of Internet addiction, parent and guardians education on Internet use and encouragement for proper parental supervision of Internet use are valid issues in prevention efforts [29].

CONCLUSIONS

The present study finds that the prevalence of internet addiction is high among the college students, more than half of the study group (65.85%) showing addiction and also more than the prevalence level reported in previous Indian studies. Hence there is a need to evolve a comprehensive approach combining periodical awareness to the students, incorporating good practices of internet use.

LIMITATIONS

Along with the non-consideration of design effect in the calculation of sample size, the two relatively key drawbacks were recall bias and social desirability bias. First, this being a retrospective study and participants being asked to narrate details of past exposure to/use of the Internet, recall bias cannot be ruled out. Second, there was self-reporting of data, and hence social desirability bias could be present, as the

study participants may have responded in such a way as to sketch themselves in a good light.

STRENGTHS

The study has been designed scientifically at various levels to avoid bias. The main strength of the study include representative selection of samples. Questionnaires were responded incognito, and teachers were kept away where information was being collected. Incognito answering of the questionnaires and data analysis after pooling ensured that the participants could provide more factual and credible answers without the fear of later consequences.

RECOMMENDATIONS

The understanding that Internet use can be a disorder is still in its preliminary stages in India, and unwarranted Internet use is an emerging public health issue as research findings have highlighted that excessive use of the Internet adversely affects one's physical and mental health and social well-being. Educational activities should focus on encouraging safe and healthy internet use.

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