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Is Mental Health of College Students Affected By Internet?: A Cross Sectional Study in Solapur City

Poonam Vijay Sancheti[1], Shubhalaxmi Devdatta Kotnis[2], Suresh Konappa Mangulikar[3]

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Author's Affiliation:
[1]LMO cum Asst Professor; [2]Associate Professor; [3]Ex Professor And Head, Dept. of Community Medicine, VMGMC, Solapur, Solapur

Correspondence
Dr. Shubhalaxmi D. Kotnis
Kotnisshubhalaxmi@Gmail.Com

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ABSTRACT

Introduction: With the rise of new-generation gadgets, the risk of "internet addiction" is emerging as a significant behavioural addiction pandemic worldwide. Though internet has become the largest way for information transfer and communication it is showing adverse effects on mental health of the users which is observed in major cities of country. Hence, the study is proposed to find the prevalence of internet addiction and its effects on mental health among senior college students.

Material and methods: A cross sectional community based descriptive study was carried out in randomly selected two senior colleges in the Solapur city with sample size was 360. Pretested Young's 20-item IAT scale was used to determine internet addiction. DASS 21 questionnaire was administered to assess the depression, stress and anxiety levels in students.

Results: Out of total 360 students, 166 (46.11%) were male while 194 (53.89%) were female. Prevalence of mild internet addiction was 38.06% and moderate internet addiction was 20.56%. Association of YIAT score levels of students and depression in the students was studied and it was found that YIAT scores levels are strongly associated with depression, stress and anxiety.

Conclusion: Increasing internet addiction in college students is associated with depression, stress and anxiety in them and needs urgent attention.

Key words: internet, DASS21, depression, college students

INTRODUCTION

In 1995, a clinical psychology student Ms Kimberly Young, then in Rochester, USA, was fascinated in the psychological factors behind computer use and "addictive use of the Internet" as a pathological condition.[1] With the rise of new-generation gadgets, the risk of "internet addiction" is emerging as a significant behavioral addiction pandemic worldwide.[2]Over the last 15 years, the number of Internet users has increased by 1000%[3], and at the same time, research on addictive Internet use has increased. Internet addiction is not understood completely, and research on its aetiology and natural history is still in its infancy[4]. For some individuals, their online behaviours are problematic and require psychological help as they cannot cope with their experiences by themselves, suggesting treatment is necessary. Based on in-depth interviews with 20 Internet addiction treatment experts from Europe and North America, Kuss and Griffiths[5] found that, Internet addiction and Internet-use related problems are associated with significant impairment and distress in individuals, which are seen as the criteria demarcating mental disorders[6].

India is the third largest country in the world next to china and United States in respect of the number of internet users.[7]Global smart mobile phone association 2017 report tells that from 2016 to 2020, subscriber penetration will be increased from 51 % to 65% and Smartphone adoption will be increased from 28% to 49%.[8]

Internet addiction commonly refers to an individu

al's inability to control his or her use of the Internet including any online-related, compulsive behaviour, which eventually causes one's marked distress and functional impairment in daily life. College students are especially vulnerable to developing dependence on the Internet, more than most other segments of the 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 communication 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.[9] Internet usage among college students is high.

Though internet has become the largest way for information transfer and communication, Internet addiction is rising above alarming levels showing adverse effects on mental health of the users which is observed in major cities of the countries. With this background, the study is proposed with the aim to find the prevalence of internet addiction and its effects on mental health among senior college students of various streams.

OBJECTIVES

The study was conducted to find prevalence of internet addiction in the senior college students, to study the patterns of internet usage among them, and also to assess mental health of study participants using DASS-21 scale in them and its relation to internet addiction.

MATERIALS AND METHODS

A cross sectional community based descriptive study was carried out in randomly selected two senior colleges in the solapur city. The study was carried out from February 2018 to December 2018. The permission to conduct the study was obtained from the principal of respective colleges. Permission from ethical committee of institute was also taken to carry out the study. Taking prevalence of mild internet addiction as 34% from previous Indian studies minimum sample size of 359 is calculated.[2] Senior college students studying in arts, science and commerce faculties were the study population for the study. One twenty students each of arts, science and commerce were selected randomly. Thus, total sample size of 360 was completed. All students from second year of the course were taken to maintain uniformity in age of students. Thus, the inclusion criterion for a study was a Student studying in senior college in 2nd year of arts, science or other faculty. Those students who did not give consent for the study and those who were absent on both the occasions of study visits were excluded from the study.

Pretested Young's 20-item Internet addiction Test scale was used to determine internet addiction level in the senior college students. Young's 20-item Internet addiction Test scale [2,10] is a 20-item questionnaire measured on the five-point Likert Scale. The higher the score, the greater the level of addiction; normal range: 0-30 points, mild: 31-49 points, moderate: 50-79 points, and severe 80-100 points. Final score for internet addiction was calculated by addition of scores for all 20 questions. The items of the YIAT, each rated from 1 i.e. rarely to 5 always, include compulsive behavior for use of the Internet. The Young's diagnostic questionnaire is the first global psychometric measure and hence has been extensively and frequently used across many studies globally, is self-completed, has been validated on adult and adolescent populations, and has good internal consistency reliability as well as concurrent validity. In a recent meta-analysis study to determine the overall reliability YIAT20, the mean differences showed that it is more reliable in college students and probably in Asia.[11,12] Questionnaire also included student's course, duration of access to mobile, computer for internet connection, and hours of internet use per day by them, parents and their siblings.

Questionnaire was translated in Marathi and retranslated to English to check its validity. The questionnaire was distributed to the students and they were asked to fill it individually. Students were assured that their identity will not be revealed and information thus obtained will be only used for academic research purpose. Students absent on the both occasion of study visits and those who won't give written consent for the study were excluded from the study.

Marathi translation of DASS 21 questionnaire [13] was administered along with Young's 20-item IAT scale to assess the depression, stress and anxiety levels in students. Total score for depression was multiplied by 2 to grade the depression. Students with grade between 0-9 are normal. Grades in between 10-13 suggest mild depression, grades of 14-20 suggest moderate depression, grade of 21 to 27 suggest severe and grades more than 27 suggest extremely severe depression. Similarly stress and anxiety were graded as per DASS 21 scale as per follows, Students with grade between 0-10 for stress are considered as having no stress while any scores above 10 suggested that student suffered

from stress. The scores were calculated by multiplying stress scores of question 1, 6, 8, 11, 12, 14, 18 of DASS 21 questionnaire by two. Students with scores less than or equal to six for anxiety were considered to have no anxiety while scores above six suggested that student suffer from anxiety. The scores for anxiety were calculated by multiplying scores of for question no. 2, 4, 7, 9, 15, 19 and 20 of DASS 21 questionnaire by two.

The data obtained was analyzed using excel sheet, percentages, odds ratio and chi square test.

RESULTS

Out of total 360 students, 166 (46.11%) were male while 194 (53.89%) were female students.

Out of total 360 students, 211 (58.61%) were having mild or moderate internet addiction according to YIAT scale. Prevalence of mild internet addiction was 38.06% and moderate internet addiction was 20.56%. Out of total, 149 (41.39%) students were not having internet addiction according to YIAT scale. The results are shown in figure no 1.

Thus, prevalence of internet addiction in senior college students found in present study was 58.61%. Out of 166 (100%) male students, 113 (68.07%) students had internet addiction while out of 194 (100%) female students, 98 (50.51%) students suffered from internet addiction according to present study. Interne addiction was significantly more in boys than girls. (z = 3.371 p =0.00076).

Distribution of students according to the pattern of their internet use is shown in table no. 1. Results showed that maximum students, 311(70.91%) were using computers for 1-5 years. Out of total, 303 (84%) students use internet for average 0-4 hours per day.

Association of YIAT score levels of students and depression in the students was studied and it was found that YIAT scores levels are strongly associated with depression in the students. (x^2= *66.003).*

Figure 1: Distribution of students according to sex and internet addiction test score

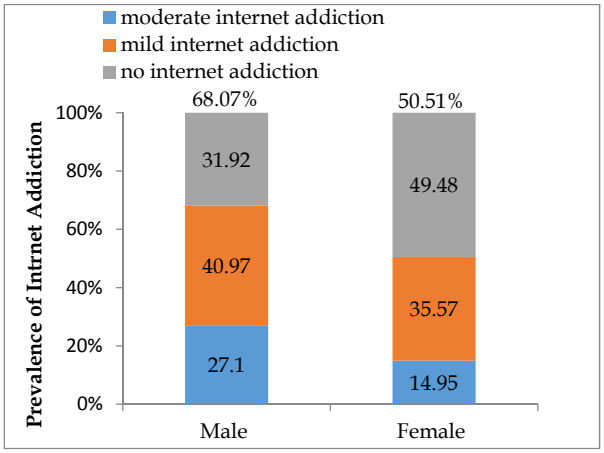

Table 1 Distribution of students according to the internet usage pattern.

Variables	Male (%)	Female (%)
Duration of computer use		
1-5 years	130 (20.63)	181 (50.28)
6-10 years	23(6.39)	10(2.78)
11-15 years	13(3.61)	3 (0.83)
Duration of internet use		
1-5 years	141 (39.17)	188 (52.22)
6-10 years	23 (6.39)	1 (0.28)
11-15 years	2 (0.56)	5 (1.39)
Average internet use per day		
0-4 hours	134 (37.22)	169 (46.94)
More than 4 hrs	32 ()	25 ()
Time spent on internet outside workplace by father		
0-2 hour/day	151 (41.94)	176 (48.89)
2-4 hour/day	11 (3.06)	13 (3.61)
4-6 hour/day		5 ()
Time spent on internet outside workplace by mother		
0-2 hour/day	157 (43.61)	182 (50.56)
2-4 hour/day	4 (1.11)	6 (1.67)
4-6 hour/day	5(1.39)	6 (1.67)
Time spent on internet outside workplace by siblings		
0-2 hour/day	132 (36.67)	158 (43.89)
2-4 hour/day	10 (2.78)	19 (5.28)
4-6	24(6.67)	17 (4.72)

Table 2 Association of Young's internet addiction test score and depression in students

YIAT score	No depression	Depression	Odds ratio	95 % CI	Significance level
<30	130 (36.11%)	19 (5.28%)	**1**	-	-
30-49	73(20.28%)	64 (17.78%)	6.00	3.34 to 10.79	< 0.0001
50- 79	27 (7.5%)	47 (13.06%)	11.9	6.06 to 23.39	< 0.0001

x2 = 66.003. p< 0.00001

Table 3 Association of Young's internet addiction test score and stress in students

YIAT score	No stress	Stress	Odds ratio	95 % CI	Significance level
<30	101 (28.06%)	39 (10.83%)	**1**	-	-
30-49	49 (13.61%)	78 (21.67%)	4.1224	2.4656 to 6.89	< 0.0001
50- 79	26 (7.22%)	48 (13.33%)	4.7811	3.47 to 12.78	< 0.0001

x2 = 40.3068. p< 0.00001.

Table 4 Association of Young's internet addiction test score and anxiety in students

YIAT score	No anxiety	Anxiety	Odds ratio	95 % CI	Significance level
<30	113 (31.39%)	36 (10%)	**1**	-	-
30-49	49 (13.61%)	88 (24.44%)	5.6372	3.3763 to 9.41	< 0.0001
50- 79	17 (4.72%)	57 (15.83%)	10.5245	5.4459 to 20.34	<0.0001

x2 = 72.5069. p< 0.00001

Estimated risk of having depression was 11.9 times higher in students having moderate internet addiction (YIAT score 50- 79) than no internet addiction while risk of having depression was 6 times higher in students having mild internet addiction (YIAT score 30- 49) than no internet addiction. (Table no. 2)

Association of YIAT score levels and stress in the students was studied. It was found that YIAT scores of students are strongly associated with stress in them. (x^2= 40.30).Estimated risk of having stress was 4.78 times higher in students having moderate internet addiction (YIAT score 50- 79) than no internet addiction while risk of having stress was 4.12 times higher in students having mild internet addiction (YIAT score 30- 49) than no internet addiction. (Table no. 3)

Anxiety in the students was also found to be strongly associated with their YIAT scores as shown in table no. 4. (x^2=72.51).Estimated risk of having anxiety was 10.52 times higher in students having moderate internet addiction (YIAT score 50- 79) than no internet addiction. Estimated risk of having anxiety was 5.63 times higher in students having mild internet addiction (YIAT score 30- 49) than no internet addiction.

DISCUSSION

In the present study, 58.61% of students using internet were found addicted to internet. Prevalence of mild internet addiction was 38.06% and moderate internet addiction was 20.56%. In the study by Surwase et al(2017) [14] in Nanded city, they found that, prevalence of mild internet addiction 31.36% which was less as compared to our study while moderate 34.49% which was higher than our results.The difference may be due to differences in socio demographic variables in study population. Bagdey P et al [12] conducted a cross sectional study of prevalence of internet addiction and its association with mental health among college going students in Nagpur city in 2016-17 and found mild internet addiction among 30.69% of study subjects, moderate addiction among 26.60% and severe among 0.26%. Present study findings show increasing prevalence of mild internet addiction and comparatively low prevalence of moderate internet addiction. It shows comparable internet addiction levels in different cities in Maharashtra.

Present study showed that estimated risk of having depression was 11.9 times higher in students having moderate internet addiction than no internet addiction while risk of having depression was 6 (odds ratio) times higher in students having mild internet addiction than no internet addiction. Estimated risk of having anxiety was 10.52 times higher in students having moderate internet addiction than no internet addiction. Estimated risk of having anxiety was 5.63 (odds ratio) times higher in students having mild internet addiction than no internet addiction. Estimated risk of having stress was 4.78 times higher in students having moderate internet addiction than no internet addiction while risk of having stress was 4.12 times higher in students having mild internet addiction than no internet addiction. Such studies showing varied mental morbidities due to internet are lacking in India. There are very few studies to establish mental health effects of internet addiction in India.

The study by Bagdey P et al [12] in Nagpur city in 2016-17 found that those who were having internet addiction were two times at a risk of having poor mental health (OR=2.28, p=0.01). Surwase et al (2017) [14] in their study at Nanded found that those who are having internet addiction are two times at a risk of having poor mental health (OR = 2.28, p = 0.01) Number of earlier studies in world, mainly from European and developed coutries have shown that anxiety disorders and anxiety-related symptoms, including social phobia, phobic anxiety, and OCD co-occur with Internet addiction in adolescents and adults. [15-17]Though internet was introduced late in India comparative to developed countries, has shown to influence the youth rapidly. The mental health problems in students with internet addiction are on rise in India, according to the present study, which mandates to consider internet addiction as one of the cause of poor mental health and requires urgent attention for primary, secondary as well as tertiary prevention.

CONCLUSION

The study showed noticeable prevalence of internet addiction in college going students in India. It also concluded that internet addiction in college

students is associated with depression, stress and anxiety in them. Looking forward to its vast impact on mental health of young generation of India, it is necessary to quantify the problem, and consider the preventive and curative measures to halt the pandemic of internet addiction and its devastating effects on mental health.

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