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Original Research Article

Is internet hampering mental health of medical students: a cross sectional study

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ABSTRACT

Background: Internet addiction was first studied in 1996 and findings were presented to American Psychological Association. Recent studies examined the prevalence of Internet addiction and investigated its causes. Internet users in India are around 205 million. Internet usage among medical students is high. Internet addiction has both physical and psychological withdrawal symptoms. This study aims to understand the patterns of internet use and its effects on mental health among medical college students. The objectives of the study were to study the patterns of internet usage among medical college students and to study the depression in them and its relation to internet usage.
Methods: Cross sectional study was conducted in government medical college. Taking prevalence of mild internet addiction 34% from previous Indian studies, minimum sample size of 90 was calculated. 23 students of 1st, 2nd 3rd year and internship were randomly chosen for study. Pretested Young's 20-item IAT scale and DASS 21 questionnaire was used for the study. Statistical analysis was done using percentage and chi square test.
Results: Mild internet addiction was found in one third of medical students. Depression is seen in 61% of students with internet addiction.
Conclusions: Internet addiction is affecting mental health of medical students.

Keywords: Young's IAT score, DASS 21 score, Depression, Medical students

INTRODUCTION

Internet addiction was first studied in 1996, and presented at the American Psychological Association. More recent studies examined the prevalence of Internet addiction and investigated the etiologic factors or causes associated with the disorder.[1]

The developing countries are also not spared due to extreme infiltration of technology. India will be the second-leading country after China which currently has the highest Internet user base of 300 million.[2]

In the new generation, the Internet has become an important tool for education, entertainment, communication, and information-sharing. Easy access and social networking are two of the several aspects of the Internet fostering addictive behaviour.[3] Internet usage among medical students is high. Smart phones as a self learning tool providing sleek connectivity are essential. Their benefits lead to overuse resulting in addiction or nomophobia. Increased awareness generation is needed among the youth regarding nomophobia.[4] Standardized measures for identification and appropriate psychobehavioral therapy for those seeking help might alleviate the problem. Internet addiction commonly refers to an individual'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. Research

studies in the Western and Asian contexts suggest that the risk of Internet addiction among young people is increasing.[5]

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.[6] Internet addiction has both physical and psychological withdrawal symptoms.

With this background, the present study aims to understand the patterns, and risk factors for internet addiction and its effects on mental health among medical college students.

Aims and objectives

- To study the patterns of internet usage among medical college students.
- To study the depression in them and its relation to internet usage.

METHODS

Cross sectional study was conducted in government medical college in duration of 4 months December 2017 to March 2018. Taking prevalence of mild internet addiction as 34% from previous Indian studies minimum sample size of 90 was calculated. Out of each 150 medical students of 1st, 2nd 3rd year and internship in a government medical college, 23 were randomly chosen for the study by using chit method. Two students of internship dropped out the study. Thus results of 90 students were studied.

The questionnaire was distributed and was asked to be filled individually. Students were assured that their identity will not be revealed, data such obtained will be used for academic purpose only and those who didn't give written consent were excluded from the study.

Questionnaire included student's academic year, duration of access to mobile, computer for internet connection, and hours of internet use per day by them, their siblings, mother and father. Pretested Young's 20-item Internet addiction test scale was used for the study to determine internet addiction level in students. Final score for internet addiction was calculated by adding scores for all 20 questions. It is a 20-item questionnaire measured on the five-point Likert scale. 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.[1,6] The excellent psychometric properties of the questionnaire are well-documented in the literature.[7,8] Depression level was studied using DASS 21questionnaire. 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.

Questionnaire also included subjective questions about the role of internet in mental health of student and utility of this study to them.

Statistical analysis was done using percentage and chi square test.

RESULTS

Out of total 90 medical students 51 (56.66%) are male and 39 (43.33%) are female students. Male students in age group 15 to 20 years are 20 (22.22%) while female students in age group 15 to 20 years are 13 (14.44%). Male students in age group 21 to 25 years are 24 (26.67%) while female students in age group 21 to 25 years are 13 (14.44%). Male students in age group 26-30 years are 7.78% while female students in age group 26-30 years are 3 (3.33%).

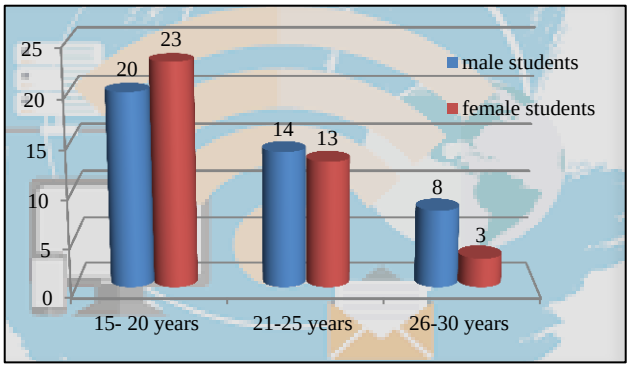

Figure 1: Age and sex wise distribution of students.

Determinants for internet use and pattern of internet use in the medical students is discussed in Table 1. Results showed that, total 62 students had IAT score more than 30, out of which 39 were male and 23 were female students. Distribution of students according to academic year and IAT score showed that, 13 students from 1st year, 19 students from 2nd year, 16 students from 3rd year and 14 interns were having IAT score more than 30. Out of these 62, maximum students, 42 were using mobile for last 1-4 years, 18 students were using mobile for 5-8 years and 2 students were using mobile for more than 8 years. Out of 62, thirteen students used computer for 1-5 years and 21 students used computers for 6-10 years.

Table 1: Distribution of medical students according to determinants for internet use.

Determinants for internet use	Male (%)	Female (%)
Distribution according to academic		
1st year	10 (11.11)	11 (12.22)
2nd year	13 (14.44)	10 (11.11)
3rd year	14 (15.56)	10 (11.11)
Interns	14 (15.56)	8 (8.88)
Distribution according to smart phone use		
1-4 yrs	31 (34.44)	26 (28.89)
5-8 years	16 (17.78)	11 (12.22)
9-12 years	3 (3.33)	0 (0)
13- 16 years	1 (1.11)	2 (2.22)
Distribution according to computer use		
1-5 years	30 (33.33)	13 (14.44)
6-10 years	14 (15.56)	21 (23.33)
11-15 years	7 (7.78)	5 (5.55)
Distribution according to internet use		
1-5 years	40 (44.44)	26 (28.89)
6-10 years	10 (11.11)	11 (12.22)
11-15 years	1 (1.11)	2 (2.22)
Distribution according to residence		
Hostel	46 (51.11)	38 (42.22)
Home	4 (4.44)	1 (1.11)
Other	1 (1.11)	0
Distribution according to availability of mobile net pack		
Yes	51 (56.67)	39 (43.33)
No	0	00
Distribution according to average internet use per day		
1-4 hours	44 (48.89)	35 (38.89)
4-8 hours	7 (7.78)	4 (4.44)
Distribution according to expenditure on internet per month		
Upto 300	42 (46.67)	26 (28.89)
601 to 900	8 (8.88)	2 (2.22)
901 and above	1 (1.11)	1 (1.11)
Distribution according to gadget used to access internet		
Desktop	0	3 (3.33)
Laptop	3 (3.33)	0
Tablet	1 (1.11)	0
Mobile phone	47 (52.22)	36 (40)
Distribution according to log in status		
On off	30 (33.33)	20 (22.22)
Permanent logged in	21 (23.33)	19 (21.11)
Distribution according to location to access internet		
Hostel	34 (37.78)	30 (33.33)
Home	5 (5.56)	3 (3.33)
Cybercafé	3 (3.33)	3 (3.33)
Classroom	4 (4.44)	1 (1.11)
Library	4 (4.44)	2 (2.22)
Computer lab	0	0
Other	1 (1.11)	0
Distribution according to time spent on internet outside workplace by father in hours per day		
0-2	45 (50)	32 (35.56)
2-4	4 (4.44)	6 (6.67)
4-6	2 (2.22)	1 (1.11)

Continued.

Distribution according to academic year	Male (%)	Female (%)
Distribution according to time spent on internet outside workplace by mother in hours per day		
0-2	51 (56.67)	37 (41.11)
2-4	0	2 (2.22)
4-6	0	0
Distribution according to time spent on internet outside workplace by siblings in hours per day		
0-2	44 (48.89)	29 (32.22)
2-4	6 (6.67)	7 (7.78)
4-6	1 (1.11)	3 (3.33)

Table 2: Distribution of students according to internet addiction test score.

IAT score	Male (%)			Female (%)			Total (%)
	15-20 yrs	21-25 yrs	26-30 yrs	15- 20 yrs	21-25 yrs	26-30 yrs	
<30	3 (3.33)	8 (8.89)	1 (1.11)	12 (13.33)	2 (2.22)	2 (2.22)	28 (31.11)
30-49	19 (21.11)	3 (3.33)	6 (6.67)	15 (16.67)	1 (1.11)	0	44 (48.89)
50-79	7 (7.78)	3 (3.33)	1 (1.11)	4 (4.44)	3 (3.33)	0	18 (20)
80-100	0	0	0	0	0	0	0

Table 3: Association of internet addiction test score and depression in medical students.

Depression IAT score	No depression (%)	Depression (%)	Total (%)
<30	26 (28.89)	2 (2.22)	28 (31.11)
30-49	15 (16.67)	29 (32.22)	44 (48.89)
50- 79	9 (10)	9 (10)	18 (20)

The chi-square statistic is 24.2138. The p-value is <0.00001. The result is significant at p<0.01.

Prevalence of internet addiction according to Young's internet addiction test score in medical students found in present study is 68.89%. Prevalence of internet addiction in male medical students found in present study is 76.47%. Prevalence of internet addiction in female medical students found in present study is 58.97%. Prevalence of mild internet addiction in medical students in present study is 48.88%. Prevalence of moderate internet addiction in medical students in present study is 20%. No student was found with severe internet addiction.

Prevalence of depression, in students having YIAT score greater than 30 i.e. suggestive of internet addiction (total 62 students), is 61.29% as calculated from Table 3. There is statistically significant association between YIAT score of students and depression assessed by DASS 21 scale in the students (x^2 value 24.21, p<0.0001).

All the students with YIAT score more than 30 (100%) have reported that their internet use is affecting their mental health.

DISCUSSION

Prevalence of internet addiction is rising in the medical students as compared to previous studies in medical students. In the study by Upadhyay et al in medical students result internet addiction test scores obtained by the students were in the range of 11–70.[10] Out of 100 students, 21 (male: 13, female: 8) were found to be slightly addicted to the Internet. The remaining 79 students were average online users. In the study by Capetillo-Ventura, Juárez-Trevino et al in medical university students of Child and Adolescent Psychiatry and Psychology, University Hospital, results showed 91.8% of the sample had complete control over its use, while 8% had frequent problems and in 0.2%, use caused significant problems.[11] Internet use caused a greater problem in men with a mean of 21.25 (median 18.00, SD 13.38) unlike women with a mean of 17.95 (median 16, SD 11.25 (U=28,914.5, Z=−2.88, p=0.004). Second, fourth and fifth year students had a greater problem in Internet use.

Prevalence of mild internet addiction in present study is also higher than students of arts, commerce, science faculties in the study carried out by Krishnamurthy and Kumar et al in Bengluru city.[6] Results in the study by Krishnamurthy and Kumar et al shown absolutely no prevalence of severe internet addiction in arts, commerce, science students.[6] Mild Internet addiction in arts, commerce, science students was 33- 41%.

Prevalence of internet addiction is more in male students than in female students in present study. Similarly, in a study carried out by Choi et al, it was reported that the case of Internet addiction was more common in male students compared to female students, and in 2001, Hahn and Jerusalem reported that males used the Internet more

than females; however, the internet usage levels of females have increased in recent years.[12]

In an Indian study carried out by Sharma et al on professional course students in the 15-25 years age group in Jabalpur city, in which the Young's 20-item IAT scale and scoring pattern was used, out of the 391 students who participated in the study, 55% were male.[13] The mean age of the students was 19.02 (±1.450) years. Male students were more addicted to the internet than female students. The IAT scoring revealed 57.3% as normal users, 35.0% as mildly addicted to the internet, 7.4% as moderately addicted, and 0.3% as severely addicted. Internet addiction is associated with depression in students, as seen in present study. In study carried out by Dixit et al, nomophobia prevalence was 18.5%.[14] Similar results are found in studies carried out by Dixit et al, Takao, Bianchi and Phillips.[14-16] Thus there is strong need to create awareness regarding internet addiction and use of smart phones to protect mental health of students.

CONCLUSION

Internet addiction in medical students is rising. Male students more affected than female. It is also affecting mental health of students and 61% of students with internet addiction suffer from mild or moderate depression, which is alarming sign for public health experts for active intervention by development of appropriate prevention, and treatment measures for the students**.**

Recommendations

Mental health of such intellectual creamy layer of society is essential. Awareness regarding internet addiction and its effects on mental health needs to be imparted in the medical students. Further studies in other professional colleges and youth population can be taken up to increase awareness in them.

Limitation of the study

All medical students in the study had mobile phones and were using internet, so comparison with those not using internet was not possible in the present study.

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