Prevalence of Internet Addiction among College students of Ahmedabad city

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Abstract :

Introduction: With increased access to the cheaper and faster internet, the people are more prone to develop addiction to the internet. This internet addiction may interfere with essential activities like acquiring formal education. Therefore it is important to assess the level of internet addiction and associated factors with the same amongst students. **Objectives :** To know the prevalence of internet usage among college students of various fields, to assess the patterns and risk factors of internet usage among the students and to evaluate internet addiction and behavior issues related to internet use. **Method:** The study was a cross-sectional study, which was carried out in five different colleges across different streams (Medicine, Arts, Commerce, Science and Law) in the city of Ahmedabad during the period of October 2017 to November 2018. The sample size was 465 students. Young's Internet Addiction Test (IAT) was utilized to assess the internet addiction amongst the study participants. **Results :** The study revealed that the overall prevalence of internet addiction was 56.8% which included 17.4% moderate and 1.3% of severe addiction. Highest prevalence was found in the students from commerce stream. The factors which were found significantly associated were;average length of internet use (highest with use of 7 to 10 years), average daily use of internet (highest with daily use of 11 hours or more), and continuous access to the internet. **Conclusion :** Majority of the students had some form of internet addiction in the present study. Duration of internet use, daily time spent on internet and continuous access to the internet were among the major attributes associated with internet addiction among college students.

Key Words : Addiction, Prevalence,Young's Internet Addiction Test

Introduction :

Internet has become a major innovation of the 21st century as it not only is a tool for communication but also an apparatus of entertainment, knowledge seeking and information-sharing. The ease of access to the rest of the world has made significant impact on the lives of people so much that it initially became a habit and then to the form of an addiction. With the passage of time, attractive features including social networking have led to Internet addictive behavior in their frequent users. [1] This behavior has not spared anyone irrespective of the social status of the individual especially after the invention of gadgets like smart-phones and tablets. The internet with its newer and newer gadgets threatens significant behavior problems.[2] Moreover, even among the academicians and students; this "unnoticed" addiction to the internet usage could not be denied.

Of the total population of around 1.2 billion (2011), the number of Internet users (both urban and rural) in India is around 205 million and India will be the second-leading country after China (currently internet users of around 300 million).[3] Internet addiction commonly refers to an individual's inability to control his or her use of the internet (including any online-related, compulsive behavior), which eventually causes one's marked distress and functional impairment in daily life.[4]Internet addiction, especially among adolescence and young adults would usher to poor academic performance (disturbed time management), changes in sleeping and dietary patterns, impaired cognition and increased risk taking behaviours. [5] College students are especially vulnerable to developing dependence on the Internet. Time availability; ease of access to the internet; the psychological and developmental characteristics of youth; limited supervision; internet dependent learning etc are some of the factors which

foster the continuous use of internet among the young adults. [6] As per DSM-V(The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition), Internet addiction is presently being considered as an area in need of research as it is not yet been classified as a disorder per se.[7] Several previous studies done so far have just explained the nature of addiction for internet in an explanatory manner. Further, most of those studies had not utilized consistent criteria for identifying internet addiction.[8] The disparities in the use of diagnostic criteria has invariably made it impossible to establish the prevalence of Internet addiction.[9] Young's Internet Addiction Test (IAT) developed by Dr. Kimberly Young was used for measuring internet addiction as the test carries good content validity.[10] In this respect, a study would be worth using such a valid test questionnaire to know the patterns, prevalence, and risk factors for internet addiction among college students of Ahmedabad city.

Objectives:

- To know the prevalence of internet usage among college students of various fields
- To assess the patterns and risk factors of internet usage among the students
- To evaluate internet addiction and behavior issues related to internet use.

Method:

This was a cross-sectional study carried out in five different colleges across different streams (Medicine, Arts, Commerce, Science and Law) in the city of Ahmedabad during the period of from October 2017 to November 2018. The study was conducted among graduate students only. College approval and written informed consent were obtained for all students who participated. The study sought permission from institutional ethics committee before data collection. The sample size (N=400) was calculated for an assumed prevalence of Internet addiction being 50% (as the exact measure from studies using a similar rating scale was unavailable) with 95% confidence interval and 10% absolute precision of the estimate. The formula utilized to calculate sample size (N) is as followed: $N = 4\times p\times q/ L^2$, where p = prevalence of internet addiction = 0.5 (assumed as 50% for this study), q = 1-p, and L = Maximum allowable error (10% of p).

Sample selection

The present study was conducted at different colleges located at Ahmedabad city. A total of five colleges from five different streams (Medicine, Arts, Commerce, Science and Law) were selected from different zones of Ahmedabad. The selection of colleges was by convenient sampling and according to the due permissions from the concerned authority.

Young's Internet Addiction Test (IAT), developed for screening and measuring levels of Internet addiction was used an instrument for data collection by the investigator faculties. The items of the IAT, each rated from 1 (rarely) to 5 (always), include compulsive behavior related to use of the Internet, the occupational or academic difficulties, lack of competence at home, problems in interpersonal relations, and emotional problems. The test has good internal consistency reliability as well as concurrent validity.[10]

Data collection and measures of Internet addiction

The questionnaire contained the following parts: Socio-demographic information, Details regarding patterns of internet use andYoung's Internet Addiction Test (IAT). The questionnaires were distributed to the college students through Google forms with help of college administrators. The questionnaires were anonymous and self-administered. The higher the score range for IAT, thegreater the level of addiction; normal range: 0-30 points, mild: 31-49 points, moderate: 50-79 points, and severe:80-100 points. A score of more than 30 points was considered as having internet addiction (mild, moderate or severe). The excellent psychometric properties of the questionnaire are well-documented in the literature.[11] The Epi Info Version 7.2 was used for statistical analysis of the data collected. Descriptive statistics was used to examine the association of factors of the questionnaire with Internet addiction.

Table 1 : Socio-demographic profile of the study sample (n = 465)

Characteristics	Frequency	Percentage
Professional stream		
Arts	94	20.2
Commerce	91	19.6
Law/Education	92	19.8
Medicine	98	21.1
Science	90	19.4
Age Group (Completed Years)		
17-20	285	61.3
21-25	150	32.3
26-30	20	4.3
31 and more	10	2.2
Gender		
Female	210	45.2
Male	255	54.8
Place of stay during study		
Home	264	56.8
Hostel	201	43.2
Father's Occupation		
Business	189	40.6
Govt. Service	54	11.6
Private Service	126	27.1
Others	96	20.6
Mother's Occupation		
Business	30	6.5
Govt. Service	36	7.7
Housewife	345	74.2
Private Service	39	8.4
Others	15	3.2

Table 2: Internet use amongst study participants

Characteristics	Frequency	Percentage
Duration of use of internet		
1-3 years	162	34.8
4-6 years	180	38.7
7-10 years	78	16.8
11-14 years	27	5.8
15 years and more	18	3.9
Daily use of internet		
0-3 hours	213	45.8
4-6 hours	195	41.9
7-10 hours	45	9.7
11 hours and more	12	2.6
Commonest place of use		
College	30	6.5
Cyber Cafe	6	1.3
Residence	357	76.8
Library/Lab	12	2.6
Others (during public transportation, outdoor activities etc.)	60	12.9
Most common gadget for Internet Usage		
Mobile phone	432	92.9
Desktop	12	2.6
Laptop	12	2.6
Tablet	9	1.9
Access to internet		
Always "On"	105	22.6
Can't say	135	29.0
Intermittently "On"	225	48.4
Commonest mode of internet access		
Broadband	12	2.6
Mobile Data	369	79.4
WiFi	81	17.4
Others	3	6

Table 1 shows that maximum students were from medical field (21.1%) followed by arts (20.2%) field. Most of the students were in the age group of 17-20 years. About 2.2% students were more than 30 years of age (due to repeated failures or admission at later ages). About 54.8% males and 45.2% females participated in the current study. Upon investigating about the fathers' occupation, it was found that majority of them were businessmen. Similarly, mothers of majority of students were housewives.

Table 2 demonstrates that majority (38.7%) of students were using internet for 4 to 6 years. It is to be noted here that some students from Arts and Law streams had a higher age than an otherwise average age for the same streams. A total of 18 (3.9%) studentswere using internet for more than 15 years. Most of the students had restricted their daily internet usage to 3 hours (45.8%). The commonest place for internet usage was found to be their residence amongst most of the students (76.8%). Almost 93% of the students were using internet by mobile phones. About 22.6% of the students were accessing internet without any interruption, while majority of the students (48.4%) had intermittent access to the internet. Mobile data was found to be most common source of internet amongst study participants (79.4%), which was followed by WiFi (17.4%).

Table 3 : Internet Addiction Test score

Level of Internet Addiction	Frequency	Percentage
0-30 (Normal)	201	43.2
31 - 49 (Mild)	177	38.1
50 - 79 (Moderate)	81	17.4
80 - 100 (Severe)	6	1.3
Total	465	100.0

As illustrated in table 3, about 43.2% of the students were normal (or had minimal risk of internet addiction) while rest (56.8%) of the study participants had some level of internet addiction according to Young's Internet Addiction Test.

Associations were sought between various socio demographic factors and internet addiction, which are depicted in table 4. However, none of the factor was found to be significantly associated with internet addiction. Higher internet addiction was found amongst males (60.0%), age group of 30-39 years (100.0%) and in students of commerce stream (62.6%).

(Table 5) It was found that the length of use of internet was significantly associated with internet addiction (p=0.011). Maximum (69.2%) prevalence was found amongst those who had been using internet for 15 years and mores from the date of survey. Average daily use of internet (Hours) was also found to be associated with internet addiction (p<0.005). It was observed that the prevalence of internet addiction was higher amongst those who used internet daily for 11 hours or more duration. One more factor which was found to be significantly associated with internet addiction was “access to internet” (p<0.005). Highest prevalence of internet addiction was amongst those who always had access to the internet (82.9%).

Discussion:

In the present study, the prevalence of internet addiction was found to be 56.8 % and no addiction was found among 43.2% users (Table 3). Similar rate for internet addiction (54%) was found among college students of Tunisia where 556 students were surveyed using the same questionnaire.[12] In the present study, males (60%, n=153/255) were more likely to be addicted to internet than females (52.9%, n=111/210), though it was not significant. Some studies have also shown that males are more sensitive to have internet addiction. [13] This higher proportion for male students also supports the findings by a study done in Madhya Pradesh with 391 students where the proportions of male students aged 15-25 years was 55%.[14] There are few other recent international studies which say the higher internet addiction among male students than the female counterpart.[15-17] However, the daily usage of among female students has gone up significantly in recent years. In the present study, there was no significant difference between internet addiction and the type of stream the students are enrolled in.

Table 4: Association between socio-demographic factors and internet addiction

Characteristics	Non-addicted	Addicted	χ^2 value	p Value
Gender				
Female	99 (47.1)	111 (52.9)	2.394	0.122
Male	102 (40.0)	153 (60.0)		
Age Group				
0-19	45 (40.5)	66 (59.5)	3.979*	0.264
20-29	153 (44.5)	191 (55.5)		
30-39	0 (0.0)	6 (100.0)		
50 or more	3 (75.0)	1 (25.0)		
Place of Stay				
Home	114 (43.2)	150 (56.8)	0.000	1.000
Hostel	87 (43.3)	114 (56.7)		
Stream of Study				
Arts	40 (42.6)	54 (57.4)	3.604	0.462
Commerce	34 (37.4)	57 (62.6)		
Law	39 (42.4)	53 (57.6)		
Medicine	42 (42.9)	56 (57.1)		
Science	46 (51.1)	44 (48.9)		

*Chi-square with Yate's Correction

Among the subjects having internet addiction, 38.1% had mild addiction, 17.8% had severe addiction and 1.4% had severe internet addiction at the time of interview. In a study by Sharma B et al with 1304 college students using Young's Internet Addiction Test, the prevalence of mild , moderate and severe addiction were found to be 27.8%, 15.8 % and 1.3% respectively.[15] The higher proportions of addiction in current study might be due to a smaller sample size. There was no significant association between internet addiction and usual place for its use in the current study. This finding is different from a study done by Paul et al where the students staying at home were more likely to have addiction to the internet.[18] In the present study, the duration of internet usage since its inception was significantly associated with addiction, as majority of the initial users (n=87, 53.7%) were found to be addicted to

Table 5: Association of Internet use related factors and internet addiction

Characteristics	Non-addicted	Addicted	χ^2 value	p Value
Average length of use of internet (Years)				
1-3	75 (46.3)	87 (53.7)	12.896*	0.011
4-6	90 (50.0)	90 (50.0)		
7-10	24 (30.8)	54 (69.2)		
11-14	9 (33.3)	18 (66.7)		
15 Years and more	3 (16.7)	15 (83.3)		
Average daily use of internet (Hours)				
0-3	120 (56.3)	93 (43.7)	28.565	0.000
4-6	66 (33.8)	129 (66.2)		
7-10	12 (26.7)	33 (73.3)		
11 or more	3 (25.0)	9 (75.0)		
Commonest place of use of internet				
College	15 (50.0)	15 (50.0)	1.751*	0.7814
Cyber Cafe	3 (50.0)	3 (50.0)		
Home	147 (41.2)	210 (58.8)		
Library/Laboratory	6 (50.0)	6 (50.0)		
Others	30 (50.0)	30 (50.0)		
Most common gadget for internet use				
Mobile Phone	186 (43.1)	246 (56.9)	0.136*	0.987
Desktop	6 (50.0)	6 (50.0)		
Laptop	6 (50.0)	6 (50.0)		
Tablet	3 (33.3)	6 (66.7)		
Access to Internet				
Always	18 (17.1)	87 (82.9)	37.93	0.000
Sometimes	117 (52.0)	108 (48.0)		

* Chi-square with Yate's Correction

internet (Table 6). This coincides with the findings by Kraut et al, where he found that "new users" are more likely to be negatively affected as far as psychological addiction is concerned.[19]

There was a significant statistical association between average internet usage per day and internet addiction among the respondents. In the current study, the proportions of addiction was found to be 47.74% (n=222) for those who spent an average duration of only 0-6 hours per day. Similar findings were observed by Krishnamurthy and Kumar in a study conducted at Bengaluru city where 43% of the college students from different streams showed the mild and moderate addiction.[20] There was a significant association between the usual status "always logged in" and the internet addiction. According to one research, this type of pathological users is more likely to be socially withdrawn and would affect learning in such productive and decisive college times.[21]

Conclusion:

The study revealed that the overall prevalence of internet addiction was 56.8% which included 17.4% moderate and 1.3% of severe addiction. Highest prevalence was found in the students from commerce stream. The factors which were found significantly associated were; average length of internet use (highest with use of 15 years or more), average daily use of internet (highest with daily use of 11 hours or more), and continuous access to the internet.

Recommendations:

Awareness regarding Cell-phone etiquettes, including length of time spent on internet usage per day should be spread among college students. The concept of daily "Net free hours" should be introduced in the daily routines of the students.

Declaration:

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Conflict of Interest: None.

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