

Internet addiction and academic performance among high school urban students

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Abstract

Background: Computer and internet usage has scaled up to massive level across the age groups globally over last few years. Internet serves as an important educational and recreational tool for adolescents. The objectives of the present study were to estimate the prevalence of Internet addiction and to study association between internet addiction and academic performance among 11th Standard English medium school students. **Materials and methods:** 540 school students were enrolled for the study. Socio-demographic details, internet usage characteristics and details of marks obtained in board exams were gathered using semistructured pro-forma. Young's internet addiction test (IAT) was used to determine presence of internet addiction. Data collected were subjected to suitable statistical analysis (student's t-test, chi-square test and Pearson's correlation coefficient). **Results:** Majority of the students were above 15 years old (71%), were males (72%), and were Hindus (97%). Around forty percent students were from science and commerce streams each whereas twenty percent students were from arts/humanities stream. The prevalence of internet addiction (IA) was found to be 4.81%. The gross prevalence of IA (including both Internet addicts and Possible Internet) was found to be 23.88%. The present study found a weak or mildly negative correlation between internet addiction and the academic performance of school students. **Conclusion:** Internet addiction is fairly prevalent among school students and it worsens academic performance. Educational interventions which favor safe internet use and limit its overuse and potential harm to individual and the society are the need of the hour.

Keywords: Academic performance, adolescents, Internet, School students

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Introduction

The present generation relies heavily on internet, and its usage is rapidly increasing even in the developing world. Statistics in India elucidate an exponential rise in internet users being 5 million in the year 2000, 100 million in 2010 to 560 million in 2019[1]. In India, according to the Census 2011 report, adolescents (10-19 years) age group comprise one fifth of the total population[2]. In recent years, the internet has become the most important academic and recreational tool for adolescents and adults[3,4]. Many schools have now brought internet use in their curriculum, as it provides access to information across a wide variety of educational subjects or topics, enhancing communication and educational relationship with teachers and classmates[5]. Common online activities include completing schoolwork, playing online games, reading and writing emails and engaging in real time chatting to share ideas, digital photos, videos, posts, and other real world activities and events with people in their network. Internet addiction (IA) has been defined as "excessive or poorly controlled preoccupations, urges or behaviors regarding computer use and internet access that leads to impairment or distress" [6-8]. Excessive Internet use have also been found to be associated with problems of maintaining daily routines, school performance, and family relationships[9]. Excessive internet users were considered as 'pathological users' in a survey carried out on 283 undergraduates and it was reported that these students spend an

average of 8.5 hours per week in using internet and males were more addicted to internet than female students[10]. The objective of the study was to estimate the prevalence of Internet addiction and to study association between internet addiction and academic performance among 11th Standard English medium school students of Jodhpur city.

Materials and methods

The present study was a community based (School based), cross sectional, descriptive type of observational study conducted under psychiatry department of medical college hospital. Prior approval and permission was taken from the Ethical Committee of the institution. English medium students of 11th standard, from Central board of secondary education (CBSE) affiliated schools of Jodhpur city were included in the study using following inclusion criteria students who gave written informed consent, students who had appeared in 10th Class CBSE Board exams in March- April 2019 and students using internet regularly for at least 6 months prior to board exams. Students having any diagnosed Chronic physical disease or having any prior diagnosed mental illness, neurological deficit, intellectual disability or any history of substance abuse and students absent from the class on the day of study were excluded from the study. Socio-demographic details, internet usage characteristics marks obtained in board exams, conducted in March-April 2019 and information regarding absenteeism from school were elicited using semi structured pro- forma. Young's internet addiction test (IAT) was used to determine presence of internet addiction. The IAT is a five-point Likert scale, with scores ranging from 20 to 100. Three types of internet-user groups were identified in accordance with the original scheme of Young: Internet Addicts, Possible Internet Addicts (PIA), and Non-Addicts (NA). The correlation between the variables was assessed by means of the Pearson's correlation coefficient. A $p < 0.05$ was accepted as statistically significant.

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Results

Table 1: Socio demographic characteristics of high school students

Variables	Number of students	Percentage
Age group		
≤15 years	157	29.07
>15 years	383	70.93
Gender		
Male	392	72.59
Female	148	27.41
Religion		
Hindu	522	96.67
Muslim	12	2.22
Others	6	1.11
Course /stream		
PCM	129	23.88
PCB	85	15.74
Arts/Humanities	112	20.74
Commerce	214	39.62
Type of school attended before		
Public	96	17.77
Private	444	82.22

Table 1 shows the sociodemographic characteristics of the students. Majority of the students were above 15 years old (71%) and were males (72%). Hindu students (97%) predominated in the study. Around forty percent students were from science and commerce streams each whereas twenty percent students were from arts/humanities stream. Most of the students (82%) were from private school.

Table 2:Prevalence of Internet Addiction among school students

Groups	No of student	Percentage
Non addicts (NA)	411	76.11
Possible Internet Addicts (PIA)	103	19.07
Internet Addicts (IA)	26	4.81
Total	540	100.00

Table 2 shows that out of total sample, 411(76.11%) students were non internet addicts (NIA) or Non Addicts (NA), 103 (19.07%) students were found to be possible internet addicts (PIA) and 26 (4.81%) were found to be internet addicts. Hence the prevalence of internet addiction was found to be 4.81%. The gross prevalence of IA (including both PIA and IA) was found to be 23.88%.

Table 3:Association between IA and purpose of using Internet

Purpose of using internet	Internet addiction status						Total		Chi- square test =16.843, n=4 p-value=0.002
	Internet addicts		Non addicts		Possible internet addicts		No.	Percentage	
	No	Percentage	No	Percentage	No	Percentage			
Academic	0	0.00	48	97.96	1	2.04	49	100	
Both	18	5.17	264	75.86	66	18.97	348	100	
Non Academic	8	5.60	99	69.23	36	25.17	143	100	
Grand Total	26	4.81	411	76.11	103	19.07	540	100.00	

Table 3 shows that out of 49 students who used internet for academic purpose, 48 (97.96 %) students had no internet addiction, while 1 (2.04%) student was found to have PIA and no students were Internet addicts. Majority of the students (348) used internet for both academic as well as nonacademic purposes. 143 students used internet only for nonacademic purposes. The difference in using internet for academic, nonacademic or both purposes and internet addicts, PIA and NA were found statistically significant (p- value = 0.002).

Table 4:Association between IA and nonacademic type of use

Type of use	Internet addicts						Total		p- value
	Non addicts		Possible addicts		Internet addicts		No	%	
	No	%	No	%	No	%			
Social network	271	50.19	92	17.04	23	4.26	386	71.48	<0.001
Chat rooms	87	16.11	34	6.30	12	2.22	133	24.63	0.001
Online shopping	174	32.22	67	12.41	16	2.96	257	47.59	<0.001
Online gaming	42	7.78	18	3.33	6	1.11	66	12.22	0.030
Simple web surfing	93	17.22	31	5.74	9	1.67	133	24.63	0.139

Porn material surfing	23	4.26	19	3.52	10	1.85	52	9.63	<0.001
Movies/song/T.V.	278	51.48	87	16.11	24	4.44	389	72.04	<0.001
Information surfing	192	35.56	62	11.48	14	2.59	268	49.63	0.046

Table 4 shows that among non academic types of internet use, highest number of students (389) used it for movies/song/T.V, out of which 278 students were NA, 87 were PIA and 24 were IA. Next major use of Internet was for Social networking sites like F.B and WhatsApp, which was used by 386 students. Among non-academic

uses, porn material surfing was done by least number of students (52). The difference of using internet for various non-academic purposes was found statistically significant (p value≤ 0.001) except for the simple web surfers (p value = 0.139).

Table 5 :Association between Internet addiction and marks obtained in Board exam

10th marks	Internet addiction status						Total	Chi- square test=35.93,n=2	
	Internet addicts		Non addicts		Possible Internet addicts				
	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	
<60%	9	34.62	19	4.62	13	12.62	41	7.59	
≥60%	17	65.38	392	95.38	90	87.38	499	92.41	
Total	26	100.00	411	100.00	103	100.00	540	100.00	0.001

Table 5 shows that out of the total 26 internet addicts students, 17 (65.38%) student scored ≥60% & 9 (34.62%) Student scored < 60% marks in the exam. Out of total 411 NIA students, 392 (95.38%) students scored ≥60% marks in the exam and 19 (4.62%) students scored < 60% in the exams. The marks scored by the students from the three sub-groups showed significant difference (p-value < 0.001).

Table 6: Correlation of Academic performance (10th marks) with IAT score

Pearson correlation coefficient	Academic Performance	IAT
Academic Performance	1	-0.2241 (0.001419)
IAT	-0.2241 (0.001419)	1

Table 6 shows a weak or mildly negative correlation between internet addiction and the academic performance of school students (r = - 0.2241, p value = 0.001419).

Discussion

The present study was aimed to examine the prevalence of IA, academic and non- academic uses in internet and its effect on academic performance among high school students. The prevalence of IA was found to be 4.81% and gross prevalence (sum of internet addicts and possible internet addicts) was found to be 23.88% among the school students which is in accordance with the range of prevalence reported by other studies on internet use worldwide as well as in India. The overall prevalence of IA was reported 5.3% by Nalwa et al among secondary school students in 2014 in Riyadh city supporting the results of our study[11]. Approximately two third, 348 (64.44%) students use internet for both academic & nonacademic purposes and less than one-tenth; 49 (9.07%) of students use it for academic purposes while around one fourth 143 (26.44%) students use it for non-academic purposes exclusively. Most preferred non academic activity online by majority of the students (70%) was to watch T.V, movies and listening songs and the use of social networking sites like Facebook (F.B), whatsapp, Instagram and other also shared an equal ratio with 386(71.48%) students. Approximately 50% students prefer surfing information randomly and for online shopping. 25% of students used internet for simple web surfing and chat rooms.10% students used it for playing online games and surfing porn material.We found that approximately 9% of the students use of internet for watching T.V, listening songs and for trending social media and 2% students using internet for online gaming and porn material surfing were internet addicts. The higher use of internet for such applications is due to that fact that adolescents age group prefer entertainment more and they could watch their favourite movies, songs for free and anytime, anywhere. Our findings were also supported by a previous study in 2012 that described that nonacademic leisure activities increases IA[12].Social networking and chatting are eminent predictors of IA in different

studies. Social networking comprises 84% of the web audience in India, and takes up 21% of all time spent online[13]. Researches across countries and continents have suggested that social networking and online chatting are among the highest ranked online activities, and are associated with PIU.In the present study, authors considered class 11th students of different schools but to maintain homogeneity of study sample size and to avoid bias in academic grading, the marks obtained in the Board exams were taken because Board exams assessment is done by a secret committee and the examination papers were uniformly distributed among all the school students. We found that non addicts scored more marks and performed academically better than the possible internet addicts and internet addicts. This difference was statistically significant. (p-value<0.001). Further, present study reported weak or mildly negative but significant correlation between internet addiction and academic performance of school students (r = -0.2241, p value = 0.001419). The results of present study are supported by a study conducted by Morahan-Martin[14] on 100 high school students drawn randomly from English medium schools of Rishikesh & Haridwar (Uttarakhand) which found that the students who were in the severe and profound groups of internet addiction were found to have detrimental effects on their academic performance than the students who were addicted to the internet usage moderately. Few studies dissuported our results and found no correlation between IA and academic performance. Yadav et al[15] conducted a cross sectional study in the year 2013 by convenient sampling on 621 students of six English medium high schools in Ahmedabad city revealed that self-rated academic performance did not predict IA. Similarly, study done on female university students and among foreign undergraduate students and few other researchers (involving both male and female participants) demonstrated that IA and academic performance have no significant association.While few other studies contradicted our findings and indicated that adolescents who can locate, browse, and access different information resources and who are knowledgeable about the context under which the information was created performed better both in overall grades and in academic competence. Hence our results indicate that internet

addiction and its related consequences may serve as potential health hazards to school students. Although the internet has a variety of beneficial uses, excessive use could lead to adverse outcomes leading to poor academic performance and psychological distress. This warrants generating awareness about its harmful usage among all school going students as well as their parents.

Conclusion

The prevalence of IA among school students in this study was 4.81% in internet addicts and gross prevalence was including both PIA and internet addicts was 23.88%. Students using internet for both academic as well as nonacademic purpose were more internet addicted. Educational programs about safe internet use, prevention programs, recovery centers, support groups, and integration of training workshops specializing in IA must be encouraged to address this problem, especially among Students. While a student's need to be updated to all the appropriate technology available, the adversity of overuse of these technologies must be recognized, studied, examined, and intervened to minimize the potential harm to the individual as well as the society.

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