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Original Research Article

A study to assess the prevalence and pattern of internet addiction among medical students in Patna, Bihar

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ABSTRACT

Background: Internet use has evolved into an inseparable routine of human life, and it has revolutionized the world with its infinite possibilities. This study aims to assess the prevalence and pattern, associated factors and its consequences/side effects of Internet addiction among medical students in Patna, Bihar.
Methods: This is a cross sectional study done among 400 students in tertiary care centre of Bihar. The 20-item Young Internet Addiction Test (IAT) was used to measure internet addiction.
Results: Out of 400 participants, 38.3% were mild, 25% moderate and 3.5% were severely addicted to internet. Feeling bored was the triggering factor for increased use, apart from using this for academics, entertainment, and social media.
Conclusions: Internet use can have an addictive potential and can become a behavioural disorder, if used for long which can ultimately interfere in our daily activities. Thus, assessing the problem at regular interval will give an insight to planning in future.

Keywords: Internet addiction, Medical students, Youth

INTRODUCTION

In the 21st century, internet has assimilated into human society as a tool for commerce, communication, access to information, discovery of new events, learning and education particularly among young people. Hence, it is often referred as the "knowledge society", "knowledge period" or "knowledge revolution".[1] Around the year 2020, more than half of the population were active internet users, of which, highest users were Asians followed by Europeans.[2] Its problematic use has resulted in undesirable consequences and even lead to a state of addiction like drug or alcohol addiction, leading to scholastic failure, decreased work performance, even divorce and marital strife.[3] It is also seen to be associated with psychiatric symptoms such as depression, anxiety, low self esteem and psychological well-being.[4] Due to COVID-19 pandemic, we were pushed in isolation which led to increased use of internet.

Addiction is a chronic brain disorder where there is compulsion for rewarding stimuli despite adverse consequences. Internet addiction (IA) may also be called compulsive internet use, problematic internet use (PIU), or internet dependence.[5] During lockdown, people were spending more time on internet to stay connected, work from home and online learning practices, increasing people's exposure to screen.[6,7] Young's internet addiction test (IAT) is a widely used 20- item instrument that has demonstrated good reliability to screen for Internet addiction.[8-10] Today's youth is preoccupied with excessive use of internet, however, when it comes to students of professional courses viz. Medical, Engineering, Physiotherapy and Nursing, the scenario

may be different due to lack of excess time due to the vast curriculum.[11] There is no guideline as to what extent and time internet can be used, which will prevent from having a negative impact on the academic performance of the students.

Therefore, this study aims to assess the prevalence and pattern, associated factors and its consequences/side effects of Internet addiction among medical students in Patna, Bihar.

METHODS

The study was a cross-sectional study conducted in Medical College of Indira Gandhi Institute of Medical Sciences, Patna, Bihar. Purposive sampling was done to include medical undergraduates in the study**.** The duration of data collection was two months from August 2022 to September 2022. Data collection started after obtaining ethical clearance. Assuming 50% prevalence (p), and absolute precision as 5%, we arrive at a sample size of 400. Undergraduate students including interns were included in the study whereas students absent on the day of data collection and not willing to give consent were excluded from the study. The data was collected using semi-structured, pre-validated, self-administered questionnaire through Google forms to avoid bias and maintain anonymity. The questionnaire had three parts. First part included socio-demographic information. Second part had questions regarding internet usage and its pattern viz. years since started using internet, hours of internet usage time per day (hours), type of internet connection used, device used and location for internet access. Third part consisted of a validated questionnaire, Young Internet addiction test (IAT) having 20-items that measures the presence and severity of internet dependency. English version was used in our study. Pilot study was done for the validation of self designed questionnaire.

Data collection

The study purpose was explained to all the participants and verbal informed consent was taken. Undergraduate students enrolled in all phases of MBBS course were included in the study. Ethical clearance was taken from Institutional Ethical Committee vide the letter no. 570/IEC/IGIMS/2022.

Statistical analysis

The data was carefully screened for completeness and entered into Google spreadsheet and analyzed. Continuous data is presented in the form of mean and standard deviation and the categorical data is presented as proportion and percentages. Association between the variables was checked by chi square test at significance level 5% by SPSS 15.0 (Apache License, Version 2.0) for Windows Evaluation Version.

RESULTS

Of the total 400 subjects, 233 (58.3%) were males and 167 (41.8%) females. The mean age was 22.18±4.4 years (18-34 years). Most of the students (33.0%) were from MBBS phase II and 81.3% of the total students were staying in hostel. According to family income, almost equal distribution was seen in both the groups. More than three fourth of the students 76.5% had adequate sleep hours. When asked about frequent activities done during leisure time, 41.5% said they used internet for different purposes followed by listening music 24.5% (Table 1).

Table 1: Socio-demographic characteristics (n=400).

Variables	Groups	N (%)
Age (in years)	≤20	81 (20.3)
	21-25	300 (75.0)
	26-30	13 (3.3)
	>30	06 (1.5)
Gender	Male	233 (58.3)
	Female	167 (41.8)
Religion	Hindu	339 (84.8)
	Muslim	55 (13.8)
	Other	06 (1.5)
Family income per month	<1 lakh	203 (50.8)
	≥1 lakh	197 (49.3)
Phase in which the students are currently posted.	MBBS phase I	68 (17.0)
	MBBS phase II	132 (33.0)
	MBBS phase III part 1	71 (17.8)
	MBBS phase III part 2	84 (21.0)
	Internship	45 (11.3)
Place of stay	Hostel	325 (81.3)
	Home	75 (18.8)
Sleep (hours)	<6	94 (23.5)
	≥6	306 (76.5)

Continued.

Variables	Groups	N (%)
Frequent activities pursued during leisure time	Reading novels	23 (5.8)
	Chatting (Face-to-face)	41 (10.3)
	Dancing/Singing/ Drawing	22 (5.5)
	Physical activity (Gym/yoga/meditation)	35 (8.8)
	Listening music	98 (24.5)
	Using internet (All purpose)	166 (41.5)
	Others	15 (3.8)

Table 2: Prevalence of internet addiction (n=400).

Group (IAT score)	N (%)
No addiction (≤30)	133 (33.3)
Mild addiction (31-49)	153 (38.3)
Moderate addiction (50-79)	100 (25.0)
Severe addiction (≥80)	14 (3.5)

Table 3: Association between socio demographic characteristics and internet addiction (n=400).

Variables	Groups	Total	Normal N (%)	With addiction N (%)	P value
Age (in years)	≤20	81	33 (40.7)	48 (59.3)	0.073
	21-25	300	98 (32.7)	202 (67.3)	
	26-30	13	02 (15.4)	11 (84.6)	
	>30	06	00 (00)	06 (100.0)	
Gender	Male	233	75 (32.2)	158 (67.8)	0.595
	Female	167	58 (34.7)	109 (65.3)	
Religion	Hindu	339	114 (33.6)	225 (66.4)	0.680
	Muslim	55	18 (32.7)	37 (67.3)	
	Other	06	01 (16.7)	05 (83.3)	
Family income per month	<1 lakh	203	66 (32.5)	137 (67.5)	0.751
	≥1 lakh	197	67 (34.0)	130(66.0)	
Course	MBBS 1st year	68	21 (30.9)	47 (69.1)	0.034
	MBBS 2nd year	132	56 (42.4)	76 (57.6)	
	MBBS 3rd year	71	22 (31.0)	49 (69.0)	
	MBBS 4th year	84	26 (31.0)	58 (69.0)	
	Interns	45	08 (17.8)	37 (82.2)	
Place of stay	Hostel	325	112 (34.5)	213 (65.5)	0.284
	Home	75	21 (28.0)	54 (72.0)	
Sleep (hours)	<6	94	17 (18.1)	77 (81.9)	0.000
	≥6	306	116 (37.9)	190 (62.1)	
Frequent activities pursued during leisure time	Reading novels	23	09 (39.1)	14 (60.9)	0.000
	Chatting (Face-to-face)	41	05 (12.2)	36 (87.8)	
	Dancing/Singing/Drawing	22	11 (50.0)	11 (50.0)	
	Physical activity (Gym/yoga/meditation)	35	14 (40.0)	21 (60.0)	
	Listening music	98	44 (44.9)	54 (55.1)	
	Using internet (All purpose)	166	41 (24.7)	125 (75.3)	
	Others	15	09 (60.0)	06 (40.0)	

Table 4: Association between pattern of internet usage and risk factors with internet addiction (n=400).

Variables	Groups	Total	Normal N (%)	With addiction N (%)	P value
Where do you prefer using internet for various activities?	Home	97	33 (34.0)	64 (66.0)	0.853
	Hostel	303	100 (33.0)	203 (67.0)	
Hours spent on internet per day	Less than 1 hour	16	13 (81.3)	03 (18.8)	0.000
	2-4 hours	210	87 (41.4)	123 (58.6)	
	4-8 hours	121	20 (16.5)	101 (83.5)	
	>8 hours	53	13 (24.5)	40 (75.5)	

Continued.

Variables	Groups	Total	Normal N (%)	With addiction N (%)	P value
Mode of internet access	Mobile	378	124 (32.8)	254 (63.5)	0.733
	Laptop/PC	12	05 (41.7)	07 (58.3)	
	College Library	10	04 (40.0)	06 (60.0)	
How long have you been using internet	1-3 years	122	38 (31.1)	84 (68.9)	0.781
	4-8 years	195	68 (34.9)	127 (65.1)	
	>8 years	83	27 (32.5)	56 (67.5)	
Triggering factor for internet usage	Feeling Bored	215	67 (31.2)	148 (68.8)	0.000
	Lonely/depressed/ escaping	81	15 (18.5)	66 (81.5)	
	Friends invitation	22	07 (31.8)	15 (68.2)	
	Others	82	44 (53.7)	38 (46.3)	
Purpose of internet usage	Academic/Course related	149	71 (47.7)	78 (52.3)	0.000
	Email	02	00 (00)	02 (100.0)	
	Entertainment	119	27 (22.7)	92 (77.3)	
	Chatting	12	02 (16.7)	10 (83.3)	
	Social media (Facebook, Instagram)	90	25 (27.8)	65 (72.2)	
	Pornography	12	01 (8.3)	11 (91.7)	
	Others (Submission of research paper, shopping, news, banking, reservations)	14	07 (50.0)	07 (50.0)	
Internet connectivity status	Always	271	86 (31.7)	185 (68.3)	0.351
	Intermittent	129	47 (36.4)	82 (63.6)	

Table 5: Association between side effects and barriers of internet use with internet addiction (n=400).

Variables	Groups	Total	Normal N (%)	With addiction N (%)	P value
Problems to access internet	Low speed	155	45 (29.0)	110 (71.0)	0.190
	Lack of time	59	25 (42.4)	34 (57.6)	
	Cost	37	11 (29.7)	26 (70.3)	
	Lack of skills	05	01 (20.0)	04 (80.0)	
	Inadequate software content	05	02 (40.0)	03 (60.0)	
	Devices hang frequently	14	07 (50.0)	07 (50.0)	
	Others (virus in computer)	02	02 (100)	00	
	No reason	123	40 (32.5)	83 (67.5)	
Does your mental peace get affected if there is problem in internet access?	Yes	248	55 (22.2)	193 (77.8)	0.000
	No	152	78 (51.3)	74 (48.7)	
Health related problem due to internet usage?	Yes	164	28 (17.1)	136 (82.9)	0.000
	No	236	105 (44.5)	131 (55.5)	

Based on IAT questionnaire, 133 (33.3%) subjects had no addiction and 267 were addicted to internet, overall prevalence of internet addiction was 66.5%; of which, 153 (38.3%) mild, 100 (25%) moderate and 14 (3.5%) had severe IA (Table 2). The mean score of IA was 40.09±36.72.

Among the total subjects, 158 males and 109 females were addicted to internet. The students who were from 21-25 years age group, those staying in hostel and having sleep of more than 6 hours were addicted to internet. Statistical significance was seen between internet addiction and sleep hours, phases in which the student were studying and frequent activities pursued during leisure time between the group with and without addiction (Table 3).

Out of the total students who prefer using internet in hostel (303), 67.0% were addicted to internet. Participants using internet for 2-4 hours were 210, of which, 123 (58.6%) were addicted and mobile was the mode of internet access by 378 students, out of which 254 (63.5%) showed addiction to internet. Almost half of the students were using internet for 4-8 years. Among the triggers,

feeling bored was an important factor for internet usage by most of the subjects 215, among which, 68.8% of the subjects were addicted. Regarding purpose of internet usage, 149 (37.3%) out of 400 students used internet for academics, 119 (29.8%) for entertainment and 90 (22.5%) for social media. Hours spent on internet per day, triggering factor and purpose of internet usage were significantly associated with Internet addiction ($p<0.05$) while place preferred for using internet, mode of internet access, duration of internet usage and internet connectivity status had no significant association with internet addiction ($p>0.05$) (Table 4).

When the association between side effects, barriers of internet use and internet addiction was studied negative correlation was seen between problem to access and addiction, whereas significant association between mental peace get affected, health related problem due to internet usage with internet addiction was noticed as shown in (Table 5).

DISCUSSION

The use of the internet has transformed the world in terms of information sharing, business opportunities, communication, learning, relationships, socialization, shopping, entertainment, all now accessible with a single click.[12] Frequency of internet addiction among medial undergraduates in our study was 66.5%, out of which 38.3% had mild, 25.0% moderate and 3.5% had severe addiction. In the study done by AIIMS among youths, it was found that this addiction had multiplied over the years.[13] Similar finding was seen by Razik et al where 61% students had internet addiction.[14] In contrast another study showed higher prevalence of mild addition (56.6%).[15] A study by Khan et al concluded that 83.2% had no internet addiction.[16]

Internet addiction was more found prevalent among male students which was similar to other studies.[14,15] Internet addiction was mostly seen between 21-25 years age in this study similar to a finding in other studies.[17] The prevalence of IA was highest among phase 2 students followed by phase 3 (part 2) whereas in another study, highest prevalence of IA was seen in phase 1 (17.5%) followed by phase 3 (part 2) students.[18]

IA was significantly associated with place of stay (hostel -53.3%) in our study, but home stay was found significant in other study.[5] Majority 67.0% of the students who prefer using internet in hostel were addicted but another study showed students who prefer hostel for internet access were not addicted.[19,20] In this study, mobile was the most common device for internet access, which was similar to other studies.[5,19,20] In some studies, use of personal computers was commonly used.[21] No significant association was seen between Internet Addiction and internet connectivity status but significant association was seen in another study.[21]

Statistical significance was seen between internet addiction and sleep hours, different phases in which the students are studying and frequent activities pursued during leisure time. It is obvious that there is less time for other activities. Internet has become a major part of daily life leading to restructuring of 24 hours format in such a way that more important routine activities are getting compromised to accommodate the hours spend on internet. Daily activities like sleep may also be disturbed similar to other study; headache, stress and anxiety have also been reported as health problem faced by the students.[14] A meta-analysis has found negative impact on the academic performance among medical students.[22]

In our study, association between internet addiction and years of internet use was not statistically significant which was also seen in other study.[23] Students using internet for 2-4 hours were mostly addicted which was consistent with other study, but studies have also found that using internet for as high as 10 hours and as low as 2 hours were also addicted to internet.[23-25]

Feeling bored was the most common triggering factor for internet usage which is consistent with other study finding.[26] Majority students were using internet for entertainment, social media and academic purpose which was also reported by others.[27] Prevalence of internet addiction was high among those using internet for watching movies, blogging and study information. Online gaming is the main online entertainment activity among male students and watching movies/TV series was more prevalent among female students in the moderate and severe IA groups in a study.[26]

This study reported significant association between Internet addiction and mental peace being affected due to problem in internet access along with health problem due to internet usage. Gedam et al also examined strong association between internet addiction and psychiatric symptoms.[4]

CONCLUSION

Internet addiction is an emerging problem among students of professional courses, which has physical, social and psychological impact on their life. It has been observed that majority of our activities are internet dependent due to which, it's becoming a compulsion and later on addiction. Strategies should be developed to check internet addiction as well as provide therapeutic interventions to prevent students from behavioral disorders and promote their healthy growth. This study gives an insight as to how much time the students are spending on internet and about their behavior related to internet usage which is having an impact on their academic performance.

Limitation

The study was done in a single institute and hence the result cannot be generalized to the student population.

Also, causal association with any mental condition couldn't be seen due to the study design.

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