

SHORT ARTICLE

Level of Internet Addiction & its correlates among Undergraduate Medical Students During Covid-19 Pandemic

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ABSTRACT

Background: The beginning of the 21st century world has witnessed an explosive growth of internet usage, particularly in developing countries like India. The Internet has enriched our life but for many, internet use can grow into a problem, particularly health problems. **Objectives:** To find & correlate the Pattern of Internet use & Internet addiction level among undergraduate medical students during the COVID-19 Pandemic. **Material & Methods:** A cross-sectional study was conducted among undergraduate medical students (sample size=394) during the COVID-19 pandemic (July-August 2022) period by using the Internet Addiction Test scale. Levels of internet addiction and frequency distribution like percentage and proportion were used for analysis. **Results:** About 49.60% of the students were found addicted to the Internet as per the analysis of the Internet Addiction test (IAT) scale; among them, 71% were addicted mildly, 24% moderately, whereas 5% were found severely addicted to Internet use. The most common reason of internet use among the students was to download/watch videos/movies. **Conclusion:** During the COVID-19 pandemic lockdown, quarantine & online classes made compulsion to use smartphones Internet has allowed spending more time on the Internet.

KEYWORDS

Addiction; COVID-19; Internet use; Mobile phone; Medical Students

INTRODUCTION

The beginning of the 21st century world has witnessed an explosive growth of internet usage, particularly in developing countries like India.(1) The Internet has enriched our life; however, internet use can grow into a problem for many. People may find themselves social networking, online shopping, gaming, site surfing, stock trading, blogging, gambling, and

viewing pornography to the extent that it interferes with their ability to keep up with schooling, relationships and work and has a negative effect on their mood. Gold berg proposed the term Internet Addiction (IA) for pathological compulsive Internet use. K Young was the first to publicize the case report on Internet Addiction.(2)

Internet addiction, also known as “pathological internet use” or “problematic use of the internet” (PUI), is defined as “a psychological dependence on the internet” and is characterized by excessive or poorly controlled preoccupations, urges or behaviours regarding internet usage leading to impairment or distress.(3) Internet addiction can cause several problems, including psychosocial, academic, occupational and financial difficulties, besides health problems such as carpal tunnel syndrome, dry eyes, headaches, neck muscular problems and sleeping problems.(4,5)

A multi-centre study from South India found Internet Addiction was higher among male medical students who stayed in rented accommodations, accessed the internet several times a day, spent more than 3 hours on the Internet and had psychological distress. Age, gender, duration of use, frequency of internet use, time spent per day and psychological distress (depression) predicted Internet Addiction.(6)

Globally, the pandemic of the coronavirus disease 2019 (COVID-19) has significantly disrupted normal daily life activities. Stay-at-home quarantines and mandates have escalated the consumption of digital technology for entertainment, Education & Occupation.(7)

Like tobacco, Internet use can become an addiction that can damage health and relationships if not kept in check. With this background, a study was planned to find and correlate the pattern & addiction level to Internet use among undergraduate medical students during the COVID-19 pandemic.

MATERIAL & METHODS

A cross-sectional study was conducted at tertiary care teaching hospital among undergraduate medical students. With 95% confidence level and margin of error of $\pm 10\%$, and anticipated prevalence rate of Poor control of internet use as 54%, a sample size of minimum 394 students will allow the study to determine the Proportion of Internet addiction. Institutional Ethics Committee permission & informed verbal consent was

obtained before enrolling students into the study.

Data collection was done by using online mode (google forms), which was circulated among the students through WhatsApp groups. Students willing to participate by giving consent were included and those who have not given consent were excluded from the study. Frequent reminders were also sent to their groups for two months (July-August 2022) of period. All the opportunity will be provided to the students to solve their doubts regarding the questionnaires’ by in person or by phone call.

The proforma included the questionnaires on socio-demographic details, pattern of internet use, time and money spent on Internet, which is followed by Internet addiction test questions. Internet Addiction Test (IAT) 6,8 by Dr. Kimberly Young - Internet Addiction

Test (IAT) is a reliable and valid measure of addictive use of Internet, developed by Dr. Kimberly Young. It consists of twenty items that measures mild, moderate, and severe level of Internet Addiction. Each item is rated on a 5-point scale ranging from 0 - 5. The maximum score is 100 points. The higher the score is, the higher is the severity of your problem. Total scores that range from 0 to 30 points were considered to reflect a normal level of Internet usage. Scores of 31 to 49 indicate the presence of a mild level of internet addiction, scores of 50 to 79 reflect the presence of a moderate level and scores of 80 to 100 indicate a severe dependence upon the Internet.

All the variables entered in to the excel sheet and analysed for frequency distribution, internet addiction score calculation & grading and tests of significance to find association between variables.

RESULTS

Total 468 MBBS students enrolled into the study during the study period of two months and the analysis of the information collected yields following observations.

Among the total 468 enrolled student's majority responses were from fourth year (26.3%) students followed by first year (20.9%) students (figure I). Among the respondent's majority (56%) were female by gender and 44%

were male. majority of the respondents belongs to age group of 21 to 23 years (60%) whereas respondent's upper age limit is 25 years and lower age limit is 19 years.

Figure I - Distribution of students according to course year

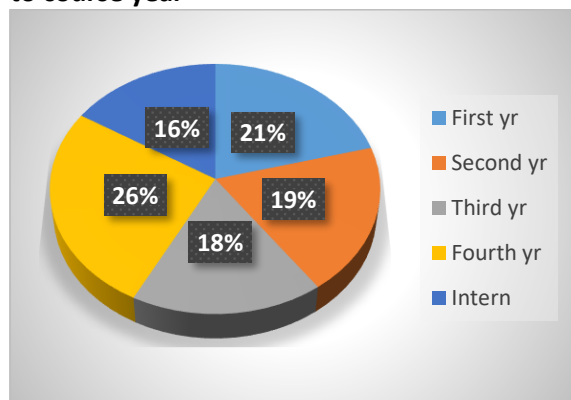


Fig - II – distribution of participants according to level of Internet Addiction based on Internet Addiction Test (IAT) scale.

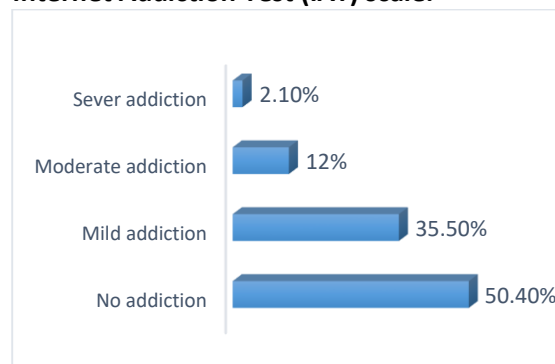


Table I - Distribution of participants as per frequency of recharge for Internet

Monthly	Frequency	Percentage
One monthly	340	72.6%
Two monthly	30	6.4%
Three monthly	74	15.8%
4 to 6 monthly	08	1.7%
> Six monthly	16	3.4%
Total	468	100%

Distribution of the participants as per the frequency of recharge for Internet showed majority (72.6%) use to practice once monthly followed by once in three months & two months (table I). The amount spent on Internet per month among participant's ranges from 64

to 600 rupees (mean 205± SD 67). The Duration of Internet use (in hours) per day among the participants ranges from 01 to 12 hours and mean hours of use was found 5.41 hours & SD 3.3.

Table II - Distribution of participants as per Purpose of Internet usage (multiple responses)

Purpose of use of Internet	Frequency	Percentage of total
Download/watch videos/movies	398	85%
Internet surfing general	281	60%
Playing games	225	48%
Study purpose	328	70%
Social network	463	99%
Business/shopping	126	27%
Listening to music	51	11%

According to table II, most common purpose of the internet use among the students found was social network (99%), to download/watch videos/movies (85%) followed by study purpose (70%) & internet surfing (60%). Other reasons included playing online games, social network, shopping & listening to music.

Figure II – distribution of participants as per level of Internet Addiction based on Internet Addiction Test (IAT) scale.

Around 49.60% of the students found addicted to Internet (different grade) as per the analysis of the Internet Addiction test results as shown

in figure II. Among them 71% were addicted mildly, 24% moderately whereas 5% were found severely addicted to Internet use. Remaining 50.40% were found not addicted according to the IAT scale.

Nearly equal proportion of students feels that they were addicted to the Internet use (M: F

56% vs 49%) whereas the desire of students to reduce the dependence on smartphone / Internet, according to which majority of the male students (61%) wants to reduce the dependency compared to females (48%) ($X^2 = 7.41, p < 0.006$)

Table III –association of level of addiction with correlates of mobile use

Variables	No	Mild	Moderate	Sever	Total	
Gender	Male	94(40%)	84(51%)	20(36%)	08(80%)	206(44%)
	Female	142(60%)	82(49%)	36(64%)	02(20%)	262(56%)
Year of course	First	54(29%)	30(18%)	12(21%)	02(20%)	98(21%)
	Second	38(16%)	34(20%)	12(21%)	06(60%)	90(19%)
	Third	48(20%)	28(17%)	06(11%)	00(0%)	82(18%)
	Fourth	57(24%)	42(25%)	24(43%)	00(0%)	123(26%)
	Intern	39(16%)	02(01%)	02(04%)	02(20%)	75(16%)
Hours of use	1-3 hrs	88(37%)	40(24%)	10(18%)	00(0%)	138(30%)
	4-6 hrs	114(48%)	74(45%)	18(32%)	04(40%)	210(45%)
	7-9 hrs	16(07%)	26(16%)	12(21%)	04(40%)	58(12%)
	10-12 hrs	18(08%)	14(08%)	12(21%)	02(20%)	46(10%)
	>12 hrs	00(0%)	12(07%)	04(07%)	00(0%)	16(03%)
Money spent	Rs.100	28(12%)	08(05%)	02(04%)	00(0%)	38(08%)
	100-200	130(55%)	92(55%)	30(54%)	04(40%)	256(55%)
	200-300	75(32%)	66(40%)	24(43%)	01(10%)	166(35%)
	>300	03(01%)	00(0%)	00(0%)	05(50%)	08(02%)
Total	236(50.4%)	166(35%)	56(12%)	10(02%)	468(100%)	

The students who were addicted severely to internet were males by gender compared to females whereas a greater number of females (64%) found among moderate addiction level. Nearly equal numbers of male and female students were having mild internet addiction (Table III).

Significantly a greater number of the students found addicted to Internet were using the internet for 4 to 6 hours daily for various purposes. Significantly a greater number of students with mild to moderate addiction were spending from 100 to 200 rupees for internet recharge monthly whereas students having severe addiction of internet use were spending more than 300 rupees for Internet recharge monthly as shown in table III.

DISCUSSION

Total 468 students responded by google form sent (female > male), among them 49.6% students found addicted to Internet use (IAT). Among all respondents 35% were addicted mildly, 12% moderately whereas 2% were found severely addicted to Internet use. Most

common reason to use internet by students was to download/watch videos/movies. Significantly a greater number of the students found addicted to Internet were using it for 4 to 6 hours daily for various purposes and found spending money to recharge monthly around 200 to 300 rupees.

Srijampana et al(8) conducted a cross-sectional study among medical students (n = 211) belonging to two medical colleges, to assess the internet usage pattern by using Young's Internet Addiction scale and found 64.4% as average users, 11.8% as possible addicts and 0.4% as addicts. Medical students used the internet mostly for social networking (59.7%), downloading media files (18.9%), online gaming (12.3%), & academic purposes (0.1%). Present findings of addiction were less compared to the above study whereas the reasons for use are nearly similar.

Prakash S et al(9) studied the A cross-sectional study was conducted to assess the prevalence of IA among Varanasi district people during the Lockdown period due to the COVID-19 in India. IA among the respondents was found 50.29%

mild, 18.29% moderate, and 1.71% severe level, while only 29.71% were found as a normal internet user. There was a significant association between IA and age ($p < 0.05$), gender ($p < 0.05$). similar findings are found in present study also possibly due to online lectures during the pandemic period made compulsory usage.

Jain A et al(10) found 15.51% study subjects were internet addicts and 49.19% were over users. Several parameters including graduation level, time spent per day on line, place of internet use, smoking and alcohol had significant association with internet addiction. Internet addiction was predominantly associated with depression and insomnia.

Gupta A et al(11) in a cross-sectional study was conducted, by face-to-face interviews, among the nonprofessional college students at the University of Delhi. The mean (standard deviation) age of the participants was 19.1 (1.02) years and 62.1% were males. The prevalence of IA was 25.3%. IA was significantly associated with higher family income (median family income INR 50,000), greater screen time, always online status, and greater duration of internet use per week. Present study proportion was similar to the above study findings.

Jaiswal A et al(12) an exploratory cross-sectional study was conducted among 307 undergraduate students using Young's internet addiction scale. Internet addiction was seen in 93.8% of respondents. The prevalence of SAD was estimated to be 15.3%. Internet addiction was found positively correlated with social anxiety score. Above study findings are much higher than present study.

Krishnamurthy S et al(13), cross-sectional study among 554 college students found 34% mild and 8% moderate Internet addiction by using Young's 20-item Internet Addiction Test (IAT). Present study proportion was similar to the above study findings. Sharma A et al(14), study was conducted to determine the level of Internet addiction among 400 students in Jabalpur and found internet addiction test scoring revealed that 57.3% as normal users, 35.0% as mild, 7.4% as moderate and 0.3% as

severely addicted. Present study proportion was similar to the above study findings.

Raju Srijampana VG et al(8), study prevalence and pattern of internet usage conducted among 211 medical students in Guntur and The users were divided into following groups: 64.4% as average users, 11.8% as possible addicts, 0.4% as addicts, and in 23.2% of medical students internet usage was found less than average user. Medical students used the internet mostly for social networking (59.7%), downloading media files (18.9%), online gaming (12.3%), and academic purposes (0.1%). Internet usage for the purpose of social networking (Facebook, WhatsApp, Mails etc.) was very high among the medical students. Present study proportion was nearly similar and the reasons mentioned for the usage to the above study findings.

CONCLUSION & RECOMMENDATION

During the COVID-19 pandemic lockdown, quarantine & online classes made a compulsion to use smartphones with the Internet. It allowed adolescents and young adults to use the Internet for purposes other than studies, like watching videos/movies and social networking. The availability of good internet connection on smartphones and the affordability of recharging connection may be the reason for spending more time in using the Internet. Hence like tobacco and alcohol use, screen time & Internet use can become an addiction that can damage health and relationships if not kept under check.

Thus, it is recommended to organize regular motivational sessions to adopt healthy lifestyles like exercise, writing or reading, cultivating good habits like music, painting etc., & involvement in extracurricular activities to avoid dependency on the Internet to pass the extra or free time.

LIMITATION OF THE STUDY

The study was single centre hence observations can not be generalized. Multicentre study with rehabilitation measures can be conducted in future.

RELEVANCE OF THE STUDY

During the COVID19 pandemic times lock down, quarantine & online classes made compulsion to use smartphones with Internet compulsorily. This gave all the opportunity to adolescents and young adults to use internet for the purpose other than studies. Just like tobacco and alcohol use, screen time & Internet use can become an addiction that can damage the health and relationships if it's not kept under check.

AUTHORS CONTRIBUTION

All authors have contributed equally.

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CONFLICT OF INTEREST

Nil

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DECLARATION OF GENERATIVE AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

The authors haven't used any generative AI/ AI assisted technologies in the writing process.

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