

Assessment of Internet Addiction and its association with Sleep Quality among medical students, in a Private Medical College in Chengalpattu district-A Cross Sectional Study.

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ABSTRACT:

INTRODUCTION:

Internet addiction, also known as problematic internet use or pathological internet use, which is generally defined as problematic, compulsive use of the internet, that results in significant impairment in an individual's function in various life domains over a prolonged period of time. With online classes being the latest in medical education, students have more internet exposure when compared to their peers. Young people are at particular risk of developing internet addiction disorder, and suffer health consequences resulting from inadequate sleep, as they stay up for longer hours to chat online, check for social network status updates or to reach the next game levels.

METHODOLOGY:

This study is a cross-sectional design to assess internet addiction and its association with sleep quality among medical students, in a private medical college in Chengalpattu district by purposive sampling technique. Data was entered in Microsoft Excel and analyzed using SPSS software version 23.

RESULTS:

A total of 442 participants participated in this study out of which of mild-32%, moderate-22% and severe internet addiction-8.14% was noted among this study population. There was a statistical significance between internet addiction and sleep quality.

CONCLUSION:

Through this study we hope that mental health and educational organizations would design programs focusing on educating medical students to improve skills in building behavior plans and enhance their attempts in preventing development of internet addiction during their study period.

KEY WORDS: mental health, social media, academic performance

INTRODUCTION:

After the inception of the World Wide Web, Internet addiction has developed into a global issue influencing varying segments of the population at different levels¹. Despite the wide range of benefits that the Internet provides us, there comes the issue of Internet addiction, also known as problematic internet use or pathological internet use, which is generally defined as problematic, compulsive use of the internet, that results in significant impairment in an individual's function in various life domains over a prolonged period of time. With online classes being the latest in medical education, students have more internet exposure when compared to their peers. Young people are at particular risk of developing internet addiction disorder, and suffer health consequences resulting from loss of sleep, as they stay up later to chat online, check for social network status updates or to reach the next game levels².

59% of the global population i.e approximately 4.57 billion people are active internet users. India had a population of 1.39 billion in January 2021. India's population increased by 13 million between January 2020 and January 2021. There were 624 million internet users in India in January 2021. The number of internet users in India increased by 47 million between 2020 and 2021². People of all ages employ the internet for several purposes and with the COVID-19 lockdown, online education is the latest trend. Boredom from the lockdown has also caused many young people to use social media apps more often. While students benefit greatly from online classes, surfing the internet for many hours causes a negative impact on their overall health and well-being. Many studies show how internet addiction negatively affects a student's mental health causing depression or anxiety. No studies have been done in Chengalpattu population on this topic. This study focuses on internet

addiction among medical students and how it affects their sleep quality that would ultimately affect their academic performance and health.

METHODOLOGY:

STUDY DESIGN, STUDY AREA AND POPULATION

This was a web-based cross-sectional study carried out in a private medical college in Chengalpattu, Tamil Nadu, India.

SAMPLE SIZE AND SAMPLING TECHNIQUE:

Based on the study done by Aravind Sharma³, et al where 42.7% of the participants were internet addicts, the sample size calculated is 376 at 95% confidence interval and keeping the margin of error as 5% using the formula $Z^2 P Q / L^2$ (where $P = 42.7$). Accounting for 15% non-response, the final sample size is 442.

INCLUSION AND EXCLUSION CRITERIA

All Medical students with a history of using internet from past 1-year or more were included in the study. Students on any drug therapy for sleep disturbances were excluded from the study.

ETHICAL CLEARANCE

The study was carried out after obtaining approval from the Institutional Ethical Committee in a private medical college in Chennai.

DATA COLLECTION

The present study is a quantitative approach using a cross-sectional design to assess the internet addiction and its association with sleep quality among the medical students. The questionnaire comprises three parts – part one consisting of sociodemographic details, part two consisting of structured questionnaire- Young's internet addiction test⁴, and part three consisting of Pittsburg sleep quality index⁵. Data was collected through an online platform due to pandemic situations to avoid the spread of infection. An online structured questionnaire was distributed using Google forms, with a consent form attached to it. Questionnaire link was sent through WhatsApp, Facebook, email, Instagram, and other media to contact the participants. On receiving and clicking the link, the participants got auto directed to the study's information and informed consent. After accepting to participate in the web-based survey, participants had to fill up the demographic details followed by questions in Young's internet addiction and Pittsburg sleep quality index.

STASTICAL ANALYSIS

Data was entered in MS Excel and analyzed using SPSS software version 23. The IAT total score is the sum of the ratings given by the examinee for the 20 item responses. Each item is rated on a 5-point scale ranging from 0 to 5. The maximum score is 100 points. The IAT total score ranges, with the higher the score representing the higher level of severity of Internet compulsivity and addiction. Total scores that range from 0 to 30 points are considered to reflect a normal level of Internet usage; scores of 31 to 49 indicate the presence of a mild level of Internet addiction; 50 to 79 reflect the presence of a moderate level; and scores of 80 to 100 indicate a severe dependence upon the Internet. The questionnaire consists of a combination of Likert type and open-ended questions (later converted to scaled scores using provided guidelines). Respondents are asked to indicate how frequently they have experienced certain sleep difficulties over the past month and to rate their overall sleep quality. Scores for each question range from 0 to 3, with higher scores indicating more acute sleep disturbances. Frequencies and Chi Square was used to analyze the data. Results were presented as tables and figures. 95% confidence intervals and P value <0.05 were considered statistically significant throughout the study.

RESULTS:

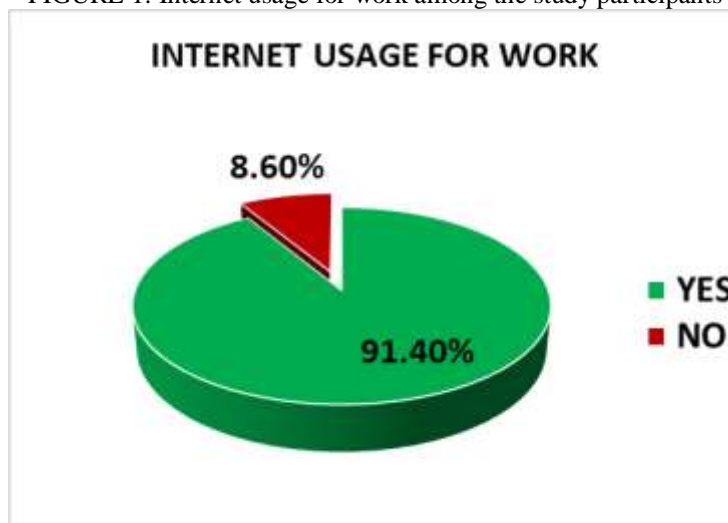
DEMOGRPAHC DETAILS REGARDING STUDY PARTICIPANTS:

A total of 442 medical students agreed to participate in this study. Majority of the participants were in the age between 20- 25(42.3%). Of the total study participants 280 were female.93.6% of participants were unmarried. More than 2/3rd of the participants were undergraduate medical students (Table.1).The participants were asked whether they used the internet for work purposes, out of which 91.40% answered yes to the question and 8.60% answered no. (Fig.1)

TABLE I: Demographic variables of the participants

S.No	Variables	Category	Frequency (Percentage)
1.	Age	15-20	160(36.1%)
		20-25	187(42.3%)
		25-30	88(19.9%)
		30-35	7(1.58%)
2.	Gender	Male	162 (36.7%)
		Female	280 (63.3%)
3.	Marital status	Married	28(6.34%)
		Unmarried	414(93.6%)
4.	Educational status	UG	345(78%)
		PG	97(21.9%)

FIGURE 1: Internet usage for work among the study participants



PREVALENCE OF INTERNET ADDICTION AMONG THE STUDY PARTICIPANTS

TABLE II: PREVALENCE OF INTERNET ADDICTION AMONG STUDY PARTICIPANTS

Grading for Internet Addiction	Grades	Frequency(Percentage)
	Normal	170(38.46%)
	Mild	140(31.67%)
	Moderate	96(21.71%)
	Severe	36(8.14%)

FIGURE 2: Concentration in Academics Vs Internet Addiction

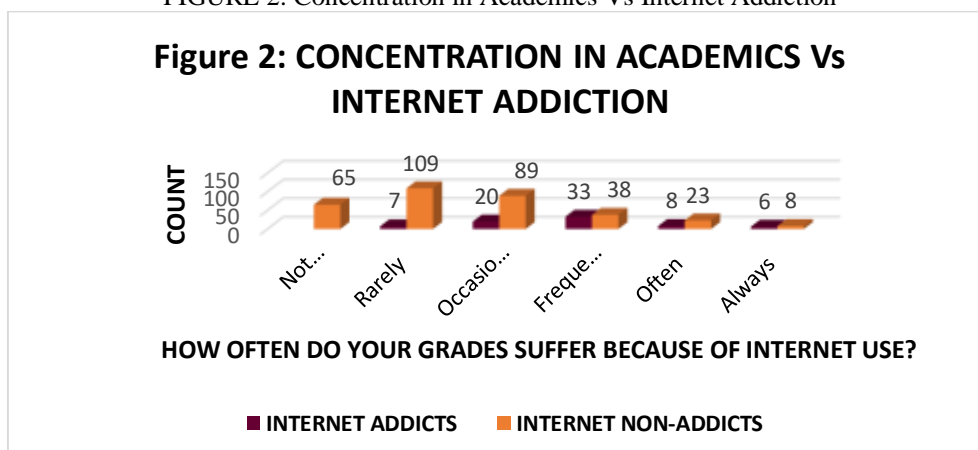


TABLE III: Association between Internet Addiction and Sleep Quality

Internet Addiction	Sleep Quality		Odds Ratio (CI)	Chi Square	P value
	Poor	Good			
Internet Addicts	93	39	5.008	54.910	0.001*
Internet Non-Addicts	100	210	(3.324-7.561)		

*Statistically significant

There was a statistical significance between internet addiction and sleep quality among the study participants. The odds of having poor sleep quality was 5.008 times more among Internet addicts when compared to Internet Non-addicts, with a Chi Square value of 54.910 which was found to be statistically significant.

DISCUSSION:

The study was conducted with an objective of estimating the prevalence of mild, moderate and severe internet addiction among the study population and to establish the association between internet addiction and sleep quality among medical students.

In a study done by Mehdi Sayyah et al, in Southwestern Iran in 2019, on “Prevalence of internet addiction among medical students; a study from Southwestern Iran” the prevalence of internet addiction in various categories was 1.6% normal, 47.4% mild, 38.1% moderate, and 12.9% severe⁶. Their analysis also showed a significantly higher proportion of senior students with severe internet addiction (16.4%) compared to junior students.

In another study done by Mohamed H Taha et al, on “Internet Use and Addiction Among Medical Students in Qassim University”, academic performance was affected in 63.1% of students and 71.8% lost sleep due to late-night Internet use, which affected their attendance to morning activities. The majority (59.7%) expressed feeling depressed, moody or nervous when they were offline⁷.

In the study on “Internet addiction among professional course students: A study from Central India” by Aravind Sharma et al, in Madhya Pradesh, India in 2014, 57.3% students were normal users while 35% cases had mild addiction, 7.4% students had moderate addiction and 0.3% severe addiction so a total of 42.7% students were addicted to internet³. In a study on “Internet addiction in medical students” by Muhammad Zeeshan Haroon et al, Internet addiction showed a significant $p=0.03$ gender association with internet addiction more prevalent in females than males (12.5% Vs 2.9%) which is in concordance with our study where internet addiction was found to be more among female students than males⁸.

Another study by D.Dhamnetiya et al, on “Correlates of problematic internet use among undergraduate medical students of Delhi”, classified 66.2% of respondents into average and problematic internet user groups⁹. With regards to poor sleep quality, a study done by PM Bhandari et al, on “Sleep quality, depressive symptoms and internet addiction”, 35.4%, 35.4% and 21.2% of students scored above validated cut-off scores for poor sleep quality, internet addiction and depression respectively¹⁰. In another study on “Sleep quality of medical students, the impact of over-use of mobile cell phone and social networks” by Mohammadbeigi A et al, the prevalence of over-use of cell phone was 10.7% (CI 0.95; 8.8%, 12.6%) and the prevalence of poor sleep quality was 61.7%¹¹.

LIMITATIONS:

We collected our sample through a Google form, to reduce the spread of infection during the pandemic, instead of which the questionnaire could've been interviewer administered. This method could've reduced the selection and recall bias. The study could've been done in many private medical colleges rather than only one.

CONCLUSION AND RECOMMENDATIONS:

Prevalence of mild, moderate and severe internet addiction among medical students were assessed in this study. The positive correlation between presence of internet addiction and poor sleep quality was established. Through this study we hope that mental health and educational organizations would design programs that focus on educating medical students to improve skills in building behavior plans and enhance their attempts in preventing development of internet addiction during their study period. Parents can also effect positive change in their children, by regulating their sleep patterns, charging electronic devices in another room apart from the bedroom to prevent late-night log ins. They can also encourage the practice of other hobbies to serve as a source of distraction. The growing burden of internet addiction needs to be addressed immediately and necessary intervention must be given, before it progresses to behavioral problems among medical students and hinders their future academic prospects.

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