

The prevalence of internet addiction and associated factors among undergraduate medical students in government medical college, Almora



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ABSTRACT

Background: The internet, computers, smartphones, and other electronic device's use has increased suddenly over recent decades. Although this increase has benefits to the users, but also excessive use often leads negative health consequences. **Aims and Objectives:** The objective of this study was to measure the prevalence of internet addiction (IA) and stress among undergraduate medical students. **Materials and Methods:** A descriptive cross-sectional study was conducted among 299 undergraduate medical students enrolled in the government medical college, Almora. A 20-item Young's IA test which is a Likert scale-based interview schedule was used to measure the prevalence of IA and the perceived stress scale 14 scale is used to assess stress among them. **Results:** Among the 299 study subjects, 49.5% were males and 50.5% were females. Males were more addicted to the internet than females. The prevalence of IA among the study subjects in the present study was 45.4% mild, 13.8% moderate, while 40.8% of students reported normal internet usage. **Conclusion:** IA is a growing health problem among medical students these days, thus necessary preventive and therapeutic interventions are very important to promote healthy and safe usage of the internet.

Key words: Internet addiction; Medical undergraduate students; Almora

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INTRODUCTION

The internet these days recognized widely as a channel for information exchange, academic research, entertainment, communication, and many more activities. From recent years, there is an explosive growth in the field of internet usage worldwide.¹ According to the internet world stats, the internet user's population worldwide had increased from 793 million (December 2021) to 538 million (June 2019), showing the worldwide internet penetration rate of 67.9%.² In post-COVID era, internet usage has increased in a wide range thus dependence on the Internet has become a major behavioral health problem.³ Since 2014, the World Health Organization has been conducting activities related to the

public health implications of excessive use of the internet, computers, smartphones, and similar electronic devices and conducting activities with academics and clinicians about the public health relevance of health conditions associated with excessive use of the Internet and other communication and gaming platforms.⁴

There are different terms associated with the concept of internet addiction (IA) as IA disorder, pathological internet use, problematic internet use, excessive internet use, and compulsive internet use.¹ In 1995, the term "internet addiction" was proposed by Dr. Ivan Goldberg for pathological compulsive internet use⁵ that was further modified by Young. She initially developed 8-question IA

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diagnostic questionnaire based on DSM IV. Later, she included 12 new items in addition to the eight items to formulate an IA Test (IAT). Hence, Young's IAT is the only available test whose psychometric properties have been tested by Widyanto and McMurrin.⁶

In India and abroad, internet usage, both by broadband and mobile users, has been increased to manyfolds. The university and college campuses are being made wireless with free and unlimited access to the internet. Many online courses are now available for medical students interested in pursuing such courses, to add to their credentials. Due to the various applications of the worldwide web, undergraduate medical students become susceptible to IA. A number of studies across the world have studied IA especially among adolescents. Research specifically on IA among young adults in the health-care system, is relatively new and limited. The present study was an attempt to measure the prevalence of IA among undergraduate medical students so that preventive and therapeutic interventions can be recommended.

Aims and objectives

The aim of the study was to determine the prevalence of internet addiction and its associated risk factors among undergraduate medical students in Almora.

MATERIALS AND METHODS

A cross-sectional study was conducted among the undergraduate students enrolled in Government Medical college, Almora, that is, 299 students.

Study instrument

The tools used in the study were as follows:

- A. A pretested, semistructured, questionnaire containing information on sociodemographic variables such as age, gender, and a batch of the student. Other information collected was pertaining to the duration of internet use, type of internet connection, and time.
- B. IAT by Dr. Young⁷⁻⁹

This is one of the most reliable scales used for evaluating the level of IA. This is a self-rated scale developed for screening and measuring the levels of IA and has been used extensively all over the world. It covers the degree to which internet use may affect daily routine, social life, productivity, sleep patterns, and feelings. It consists of a 20-item questionnaire scored on the Likert scale from 1 (rarely) to 5 (always). A total score <20 represents normal users, between 20 and 49 mild addiction, 50 and 79 moderate addiction, and 80 and 100 severe addiction.

- C. Depression anxiety and stress scale (DASS)¹⁰

DASS is a 42-item questionnaire that includes three self-report scales designed to measure the negative emotional states of depression, anxiety, and stress. Each of the three scales contains 14 items, with each item rated on a 4-point scale (0, does not apply to me at all and 3, does apply to me almost always).

Inclusion criteria

Apparently healthy students, who had given verbal informed consent, were included in the study.

Exclusion criteria

Incompletely filled questionnaire and not willing to give verbal informed consent were excluded from the study.

Statistical analysis

Data thus collected were compiled and analyzed using the SPSS software version 16. Univariate analysis was done by Chi-square test and analysis of variance. Correlations between continuous variables were calculated using Pearson's correlation test. A $P < 0.05$ was considered statistically significant.

RESULTS

A total of 299 students enrolled in the study, out of them, 151 were female and 148 male from 3 batches of the course. The mean age of the study participants was 20.8 ± 1.7 years with the mean hours of internet use was 4. It was found that the batch of the students currently studying and a number of hours spend by them on the internet was significantly associated with IA (Table 1). It was found that 122 (41%) of students are not addicted to internet use while 136 (45%) were mildly addicted and 41 (14%) were moderately addicted (Graph 1) Out of them 67 (54.9%) were non-addicted females and 67 (45.1%) were male while 69 (50.7%) were mildly addicted males and 67 (49.3%) females and in moderate addiction 24 (58.5%) male were found and 17 (41.5%) female (Graph 2). It was found that there was a statistically significant difference in the mean scores of psychological morbidities that were depression, anxiety, and stress among those with the correlation between the two was positive and was statistically significant ($P < 0.05$) (Table 2).

DISCUSSION

The present study was conducted with the aim of assessing the prevalence, levels of IA and its association with depression, stress, and anxiety among undergraduate medical students of Government Medical College, Almora, Uttarakhand. The prevalence of IA among the study subjects in the present study was 45% mild, 14%

Table 1: Association of internet addiction various sociodemographic variables (n=299)

Variables	Category	No addiction	Mild addiction	Moderate addiction	Chi-square	P-value
Age	≤21 years	92 (45.1)	87 (42.6)	25 (12.3)	5.03	0.08
	>21 years	30 (31.6)	49 (51.6)	16 (16.8)		
Gender	Male	55 (37.2)	69 (46.6)	24 (16.2)	2.3	0.3
	Female	67 (44.4)	67 (44.4)	17 (11.2)		
Batch of the students	2021	29 (29.3)	45 (45.5)	25 (25.3)	19.3	0.001
	2022	48 (48)	44 (44)	08 (08)		
	2023	45 (45)	47 (47)	08 (08)		
No. of hours spent on internet	<4 h	94 (49.2)	77 (40.3)	20 (10.5)	16.3	0.001
	≥4 h	28 (25.9)	59 (54.6)	21 (19.5)		

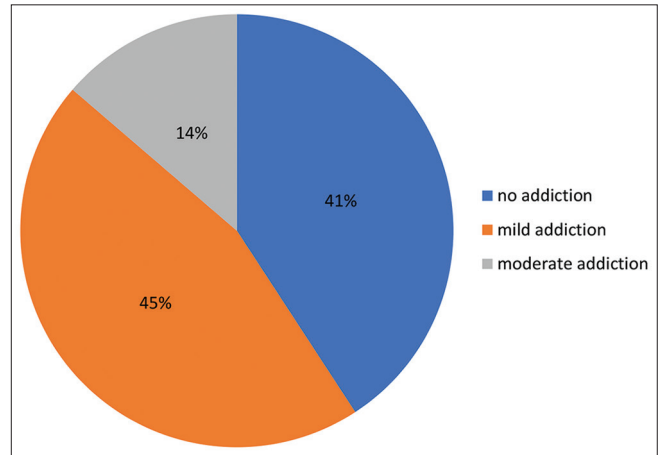
Table 2: Correlation of severity of internet addiction with depression, anxiety, and stress scores

Severity of internet addiction	Depression anxiety and stress scale score (mean±SD)		
	Depression	Anxiety	Stress
No addiction	1.25±0.57	1.47±0.78	1.04±0.23
Mild addiction	1.22±0.51	1.30±0.61	1.05±0.31
Moderate addiction (mean±SD)	1.29±0.60	1.48±0.81	1.09±0.30
Analysis of variance F	0.30	2.27	0.61
Sig.	0.73	0.10	0.54
Pearson's correlation r	0.905	0.50	0.28
	Sig.	<0.05	<0.05

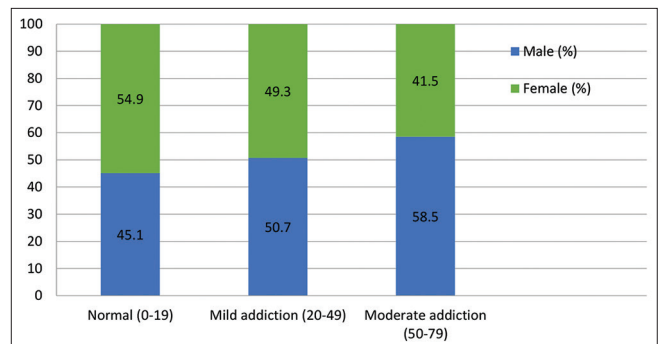
SD: Standard deviation

moderate, while 41% students reported normal with internet usage. Severe IA was not found among the study participants. In another study conducted by Mashaei et al., found that the prevalence of IA in students of Rafsanjan University of Medical Sciences, Iran, as 51.3% mild, 5.4% moderate and 0.9% severe, while 42.4% students were not addicted to the internet.¹¹ Subhadrada and Kalyani found the prevalence of IA among undergraduate medical students of Kurnool Medical College, Kurnool was 52.63% mild, 24.21% moderate, while 23.16% students normal internet usage.⁸ Tsimitsiou et al., found that the prevalence of IA in undergraduate medical students at the Aristotle University of Thessaloniki School of Medicine, Greece, was Mild IA was found in 24.5%, moderate in 5.4%, and severe in 0.2%.¹² Rashmi et al., found that the prevalence of the IA among undergraduate students of 1st and 2nd year MBBS in a medical college, Bangalore was 18.8% as moderate addiction and mild addiction was noted among 61% while 18.8% of the subjects were normal users.¹³

In the present study, it was observed that the male students were more addicted to the internet than the female students. In a similar study by Sharma et al., the male students were more addicted to the internet than the female students.¹⁴ Similar results have been observed by various other studies conducted in different parts of the country.^{5,15-17} In contrast,



Graph 1: Distribution of study participants according to the severity of internet addiction



Graph 2: Gender-wise distribution of internet addiction among study participants

Srijampana et al., reported an equal susceptibility for IA between males and females.¹⁸

In the present study, it was observed that those belong to a higher batch and involve in more no. of hours in internet usage are more addicted and was significantly associated with IA. In a similar study Chin et al., found that increasing frequency of internet usage was associated with IA.¹⁹

In the present study, there was a positive correlation found of IA with depression, anxiety, and stress, the finding supported by various other authors in their respective studies.²⁰⁻²²

Limitations of the study

The sample size of this study is small as was conducted only in one medical college of Kumaon so the various findings in the study would not be used for external validity.

CONCLUSION

The overall prevalence of IA was found to be 59%. Males were comparatively more addicted. Students of senior batches and those who use the internet for a longer duration were more prone for IA. A significant positive correlation was seen for IA with depression, anxiety, and stress scores. Hence, measures should be adapted to promote awareness among students regarding the meaningful and appropriate use of the internet and the symptoms of addiction and associated factors.

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Authors' Contributions:


P- Definition of intellectual content, literature survey, design of study, statistical analysis and interpretation; **VSD-** Prepared first draft of manuscript, implementation of study protocol, data collection, data analysis, manuscript preparation and submission of article; **MHK-** Concept, design, manuscript preparation, editing, and manuscript revision; **SM-** Review manuscript.


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