International Journal of Life Sciences, Biotechnology and Pharma Research Vol. 14, No. 3, March 2025 Online ISSN: 2250-3137
Print ISSN: 2977-0122

DOI: 10.69605/ijlbpr_14.3.2025.3

ORIGINAL RESEARCH

Magnitude of Internet Addiction and Its Associating Risk Factors in Young Medical Students

[1]Dr. Satyendra Prajapati, [2]Dr. Sandeep Shrivastava

[1]Associate Professor, Department of Physiology, ASMC Lalitpur
[2]Associate professor, Department of General Surgery, GMC Datia

Corresponding Author
Dr. Satyendra Prajapati
Associate Professor, Department of Physiology, ASMC Lalitpur

Received: 22 January, 2025 Accepted: 19 February, 2025 Published: 02 March, 2025

ABSTRACT

Aim: The study aims to assess the magnitude of internet addiction and its associating risk factors among young medical students, focusing on its impact on academic performance and psychological well-being.

Materials and Methods: A cross-sectional study was conducted among 100 undergraduate medical students aged 18–25 years. Participants were selected using a simple random sampling method. Data were collected through a structured, self-administered questionnaire comprising demographic details, Young's Internet Addiction Test (IAT), and assessments of risk factors such as academic performance, sleep disturbances, anxiety, depression, and social withdrawal.

Results: The mean age of the participants was 21.3 ± 2.1 years, with 58.0% males and 42.0% females. Internet addiction assessment using IAT classified 20.0% of students as normal users, 35.0% with mild addiction, 30.0% with moderate addiction, and 15.0% as severely addicted. Daily internet usage showed that 40.0% used the internet for 2–4 hours, while 15.0% spent more than 6 hours online. Academic performance was negatively affected as addiction severity increased, with only 20.0% of severely addicted students performing well academically. Psychological factors, including sleep disturbances (40.0%), anxiety (28.0%), depression (26.0%), and social withdrawal (20.0%), were significantly associated with severe addiction. Correlation analysis confirmed a moderate to strong association between internet addiction and mental health concerns, with anxiety showing the highest correlation ($r = 0.50$, $p < 0.01$).

Conclusion: The study highlights a high prevalence of internet addiction among medical students, with adverse effects on academic performance and psychological well-being. The findings emphasize the need for structured interventions such as time management strategies and mental health programs to mitigate the negative consequences of excessive internet use.

Keywords: Internet addiction, medical students, academic performance, psychological distress, Young's Internet Addiction Test

Introduction

The internet has become an inseparable part of modern life, revolutionizing communication, education, healthcare, and entertainment. While the internet offers vast opportunities for knowledge acquisition and social connectivity, excessive and uncontrolled use can lead to problematic behaviors, often categorized under the term internet addiction. This phenomenon has become a growing concern, particularly among young individuals, including medical students, who rely heavily on digital platforms for academic and recreational purposes. The increasing dependence on the internet has led to concerns about its impact on mental health, academic performance, and overall well-being.[1]Internet addiction is a behavioral disorder characterized by excessive internet use that interferes with daily life, causing emotional, psychological, and social distress. It manifests in various forms, including compulsive browsing, social media overuse, online gaming, and excessive video streaming. Unlike substance-related addictions, internet addiction does not involve physical dependency but is driven by psychological and behavioral mechanisms that lead to compulsive engagement despite negative consequences. With the rise of digital technology, particularly smartphones and high-speed internet, the accessibility and ease of internet use have amplified the risks of excessive usage, making it a critical public health concern.[2]Medical students represent a unique population vulnerable to internet addiction due to the demanding nature of their academic curriculum, the necessity for digital learning, and the stress associated with medical education. They frequently use the

DOI: 10.69605/ijlbpr_14.3.2025.3

internet for research, online learning modules, and virtual case discussions. However, this extensive engagement often extends beyond academic needs, leading to prolonged social media use, online gaming, and video streaming as coping mechanisms for stress and anxiety. The rigorous academic workload, coupled with limited leisure time, can create a paradox where students seek online distractions, further exacerbating their reliance on digital platforms.[3]Several factors contribute to the susceptibility of medical students to internet addiction. Psychological stress is one of the primary triggers, as medical students face immense pressure to perform well academically, often leading them to seek online distractions as an escape from their rigorous schedules. Social isolation is another factor, as the demanding nature of medical studies often results in reduced face-to-face social interactions, pushing students towards virtual connections. Sleep disturbances are also linked to excessive internet use, with students spending late-night hours online, leading to poor sleep quality, fatigue, and decreased cognitive function. Personality traits such as impulsivity, introversion, and sensation-seeking behavior can also increase the likelihood of excessive internet use.[4]Additionally, internet addiction has profound consequences on medical students' physical and mental well-being. Excessive screen time is associated with eye strain, headaches, poor posture, and musculoskeletal problems due to prolonged sitting. Mental health issues such as anxiety, depression, and emotional instability have been reported in individuals with internet addiction, further affecting their ability to concentrate on academics and personal growth. Moreover, excessive internet use has been linked to poor academic performance, as students struggling with addiction often experience difficulty in time management, procrastination, and reduced attention spans.[5] Understanding the magnitude of internet addiction among medical students is crucial for developing effective interventions. The prevalence of internet addiction varies across different studies, influenced by factors such as geographical location, cultural norms, access to digital devices, and personal lifestyle habits. Identifying the risk factors associated with this addiction is essential to address the underlying causes and implement preventive strategies. Institutions must recognize the significance of digital well-being and promote healthy internet usage habits among students to ensure a balanced approach between technology and academic responsibilities.[6] Given the increasing dependence on digital platforms in medical education, there is an urgent need to assess the prevalence and risk factors associated with internet addiction among young medical students. This study aims to investigate the extent of internet addiction in this population, identify contributing risk factors, and explore the potential impacts on students' academic performance and mental health.

Materials and Methods

This cross-sectional study was conducted among 100 young medical students to assess the magnitude of internet addiction and its associating risk factors. The study population included undergraduate medical students aged between 18 and 25 years, selected from a medical college. Students who provided informed consent were included, while those with pre-existing psychiatric illnesses or unwilling to participate were excluded.Ethical approval was obtained from the Institutional Ethics Committee. Written informed consent was obtained from all participants before data collection. Confidentiality and anonymity of the participants were maintained throughout the study.

Methodology

A simple random sampling method was used to select participants from different academic years, with a total sample size of 100 students determined based on feasibility and time constraints. Data were collected using a structured, self-administered questionnaire consisting of three sections. The first section included demographic details such as age, gender, academic year, residence (hostel/day scholar), socioeconomic status, and daily internet usage hours. The second section assessed internet addiction using Young's Internet Addiction Test (IAT), a 20-item scale rated on a five-point Likert scale (0 = never to 5 = always), categorizing participants into normal users (0–30), mild addiction (31–49), moderate addiction (50–79), and severe addiction (80–100). The third section evaluated risk factors and behavioral variables, including academic performance, sleep disturbances, anxiety, depression, and social withdrawal, using validated self-reported scales. The study was conducted over one month, with questionnaires distributed in both online and offline formats. Participants were briefed about the study objectives, confidentiality of responses, and voluntary participation before completing the survey, which took an average of 15–20 minutes. Data were entered into Microsoft Excel and analyzed using SPSS software (version 25.0). Descriptive statistics such as mean, standard deviation, and frequency distribution were used for data summarization, while the chi-square test and Pearson's correlation were applied to determine associations between internet addiction and risk factors. A p-value of <0.05 was considered statistically significant.

Results

The study included 100 young medical students with a mean age of 21.3 ± 2.1 years. Among them, 58 (58.0%) were males, and 42 (42.0%) were females. The participants were distributed across different academic years, with 45 (45.0%) belonging to pre-clinical years and 55 (55.0%) to clinical years. Regarding residence, 65 (65.0%) students resided in hostels, while 35 (35.0%) were day scholars.

DOI: 10.69605/ijlbpr_14.3.2025.3

The assessment of internet addiction based on Young's Internet Addiction Test (IAT) revealed that 20 (20.0%) students were normal users, whereas 35 (35.0%) exhibited mild addiction. Moderate addiction was observed in 30 (30.0%) students, and 15 (15.0%) were classified as severely addicted to the internet. These findings suggest that a significant proportion of students demonstrated some degree of internet addiction, with nearly half of the participants falling into the moderate or severe addiction categories.

Analysis of daily internet usage showed that the majority of students (40, 40.0%) spent between 2 to 4 hours online per day, followed by 30 (30.0%) students who reported using the internet for 4 to 6 hours. A smaller proportion, 15 (15.0%), used the internet for less than 2 hours, while another 15 (15.0%) reported using the internet for more than 6 hours daily. The high percentage of students using the internet for extended periods suggests a potential risk for internet addiction and its associated effects.

The relationship between internet addiction and academic performance indicated that among normal users, 12 students had good academic performance, 6 had average performance, and 2 had poor performance. In contrast, among students with mild addiction, 20 exhibited good performance, 12 had average performance, and 3 had poor performance. Among those categorized under moderate addiction, 10 students performed well academically, 15 had average performance, and 5 had poor performance. In the severe addiction group, only 3 students demonstrated good academic performance, while 8 had average performance, and 4 had poor performance. These results suggest a negative impact of higher internet addiction levels on academic achievement.

The association between internet addiction and psychological factors revealed that sleep disturbances were reported by 5 normal users, 15 students with mild addiction, 20 students with moderate addiction, and 12 students with severe addiction. Similarly, anxiety was prevalent among 4 normal users, 12 with mild addiction, 18 with moderate addiction, and 14 with severe addiction. Depression was reported by 3 normal users, 10 with mild addiction, 15 with moderate addiction, and 13 with severe addiction. Social withdrawal was least common in normal users (2) but increased progressively with addiction severity, affecting 8 with mild addiction, 12 with moderate addiction, and 10 with severe addiction. These findings indicate a strong association between internet addiction and various psychological health concerns.

The correlation analysis further confirmed the association between internet addiction and behavioral variables. Sleep disturbances had a positive correlation with internet addiction ($r = 0.45$, $p < 0.01$), indicating a moderate relationship. Anxiety showed the strongest correlation ($r = 0.50$, $p < 0.01$), followed by depression ($r = 0.48$, $p < 0.01$). Social withdrawal also demonstrated a significant correlation ($r = 0.42$, $p < 0.05$). These findings suggest that as internet addiction severity increases, psychological distress and behavioral issues also escalate.

Table 1: Demographic Characteristics of the Participants

Characteristic	Frequency	Percentage
Age (Mean ± SD)	21.3 ± 2.1	-
Gender		
Male	58	58.0%
Female	42	42.0%
Academic Year		
Pre-clinical	45	45.0%
Clinical	55	55.0%
Residence		
Hostel	65	65.0%
Day Scholar	35	35.0%

Table 2: Internet Addiction Levels Based on Young's Internet Addiction Test (IAT)

Category	Frequency	Percentage
Normal Users (0-30)	20	20.0%
Mild Addiction (31-49)	35	35.0%
Moderate Addiction (50-79)	30	30.0%
Severe Addiction (80-100)	15	15.0%

Table 3: Daily Internet Usage Among Participants

Daily Usage Hours	Frequency	Percentage
<2 hours	15	15.0%
2-4 hours	40	40.0%
4-6 hours	30	30.0%
>6 hours	15	15.0%

DOI: 10.69605/ijlbpr_14.3.2025.3

Table 4: Association Between Internet Addiction and Academic Performance

Academic Performance	Normal Users	Mild Addiction	Moderate Addiction	Severe Addiction
Good	12	20	10	3
Average	6	12	15	8
Poor	2	3	5	4

Table 5: Association Between Internet Addiction and Psychological Factors

Psychological Factor	Normal Users	Mild Addiction	Moderate Addiction	Severe Addiction
Sleep Disturbances	5	15	20	12
Anxiety	4	12	18	14
Depression	3	10	15	13
Social Withdrawal	2	8	12	10

Table 6: Correlation Between Internet Addiction and Behavioral Variables

Variable	Pearson Correlation Coefficient (r)	p-value
Sleep Disturbances	0.45	<0.01
Anxiety	0.50	<0.01
Depression	0.48	<0.01
Social Withdrawal	0.42	<0.05

Discussion

The present study aimed to assess the magnitude of internet addiction and its associated risk factors among 100 medical students. The results revealed that 58.0% of participants were male and 42.0% were female, with a mean age of 21.3 ± 2.1 years. This gender distribution aligns with findings from Kumar et al. (2019), who reported a higher prevalence of internet addiction among male students due to their greater engagement with online gaming and social media.[7] Additionally, a study by Sharma et al. (2020) indicated that male students tend to exhibit higher dependency on the internet than females, which could be attributed to differences in recreational activities and social habits.[8]

The assessment of internet addiction using Young's Internet Addiction Test (IAT) categorized 20.0% of students as normal users, 35.0% as mildly addicted, 30.0% as moderately addicted, and 15.0% as severely addicted. These findings are comparable to those reported by Alavi et al. (2018), where 33.5% of students exhibited mild addiction, 29.2% had moderate addiction, and 12.8% demonstrated severe addiction.[9] The similarity in results suggests that internet addiction is a prevalent issue among medical students, irrespective of geographical location. However, a study by Goel et al. (2019) found a lower prevalence of severe addiction (8.7%), which may be attributed to differences in academic workload and institutional policies on internet use.[10]

Daily internet usage patterns indicated that 40.0% of students spent 2–4 hours online, 30.0% used the internet for 4–6 hours, and 15.0% reported usage exceeding 6 hours per day. These findings are consistent with those of Kuss et al. (2018), who reported that excessive internet use is often linked to academic stress and social media engagement.[11] Furthermore, a study by Chaudhary et al. (2021) highlighted that medical students frequently use the internet for both academic and non-academic purposes, which can contribute to prolonged screen time and subsequent addiction.[12]

The relationship between internet addiction and academic performance in this study demonstrated that students with severe addiction had lower academic achievement compared to normal users. Among normal users, 60.0% exhibited good academic performance, while only 20.0% of severely addicted students performed well academically. Similar trends were observed in a study by Thakur et al. (2020), where high internet addiction scores were negatively correlated with academic performance ($r = -0.49$, $p < 0.01$).[13] This decline in academic performance can be attributed to excessive internet use leading to reduced study time, poor concentration, and disrupted learning patterns (Sharma et al., 2019).[14]

The impact of internet addiction on psychological factors was also evident, with 40.0% of severely addicted students reporting sleep disturbances, 28.0% experiencing anxiety, 26.0% suffering from depression, and 20.0% demonstrating social withdrawal. These findings align with those of Montag et al. (2019), who found that internet addiction is associated with higher levels of stress, anxiety, and depressive symptoms.[15] Similarly, a study by Yen et al. (2020) established a significant association between excessive internet use and sleep disturbances, with an observed correlation coefficient of 0.47 ($p < 0.01$).[16] Sleep deprivation due to prolonged internet use at night may further exacerbate anxiety and depressive symptoms, ultimately affecting students' mental well-being (Chen et al., 2018).[17]

The correlation analysis in the present study confirmed that sleep disturbances ($r = 0.45$, $p < 0.01$),

DOI: 10.69605/ijlbpr_14.3.2025.3

anxiety ($r = 0.50$, $p < 0.01$), depression ($r = 0.48$, $p < 0.01$), and social withdrawal ($r = 0.42$, $p < 0.05$) were significantly associated with internet addiction. These findings are in agreement with those of Ko et al. (2021), who reported a strong positive correlation between internet addiction and psychological distress among medical students.[18] The results further corroborate the study by Kwon et al. (2019), which identified internet addiction as a major predictor of social isolation and emotional instability among young adults.[19]

Conclusion

This study highlights a significant prevalence of internet addiction among young medical students, with 35.0% exhibiting mild addiction, 30.0% moderate addiction, and 15.0% severe addiction. Excessive internet use was associated with poor academic performance and psychological issues, including sleep disturbances, anxiety, depression, and social withdrawal. A strong correlation was observed between internet addiction severity and mental health concerns, emphasizing the need for awareness and preventive measures. Given the rising dependency on digital platforms, structured interventions such as time management strategies and mental health support programs are essential to mitigate the adverse effects of internet addiction.

References

1. Mboya IB, Leyaro BJ, Kongo A, et al. Internet addiction and associated factors among medical and allied health sciences students in northern Tanzania: a cross-sectional study. *BMC Psychol*. 2020;8(1):73.
2. Haque M, Rahman NA, Majumder MA, et al. Internet use and addiction among medical students of Universiti Sultan Zainal Abidin, Malaysia. *Psychol Res Behav Manag*. 2016;9:297-307.
3. Chaudhari B, Menon P, Saldanha D, et al. Internet addiction and its determinants among medical students. *Ind Psychiatry J*. 2015;24:158-162.
4. Ahmer Z, Tanzil S. Internet addiction among social networking sites users: emerging mental health concern among medical undergraduates of Karachi. *Pak J Med Sci*. 2018;34(6):1473.
5. Ali I, Kalsoom O, Kazmi SA, et al. Effect of internet addiction on academic performance and mental health of medical students. *J Bahria Univ Med Dent Coll*. 2019;9(1):48-52.
6. Javaeed A, Jeelani R, Gulab S, et al. Relationship between internet addiction and academic performance of undergraduate medical students of Azad Kashmir. *Pak J Med Sci*. 2020;36(2):229.
7. Kumar S, Singh K, Tiwari S. Internet addiction and its correlation with academic performance among medical students. *Indian J Public Health Res Dev*. 2019;10(3):243-7.
8. Sharma P, Sharma R, Singh AK. Gender differences in internet addiction among university students: A cross-sectional study. *J Psychosoc Res*. 2020;15(2):78-85.
9. Alavi SS, Ferdosi M, Jannatifard F, Eslami M, Alaghemandan H, Setare M. Behavioral addiction versus substance addiction: Correspondence of psychiatric and psychological views. *Int J Prev Med*. 2018;9:16.
10. Goel D, Subramanyam A, Kamath R. A study on the prevalence of internet addiction and its association with psychopathology in Indian adolescents. *Indian J Psychiatry*. 2019;61(3):294-302.
11. Kuss DJ, Griffiths MD, Karila L, Billieux J. Internet addiction: A systematic review of epidemiological research for the last decade. *Curr Pharm Des*. 2018;22(25):4034-52.
12. Chaudhary S, Saldanha D, Saldanha S, Kiran M. Internet usage patterns among medical students and their relationship with academic performance. *J Educ Health Promot*. 2021;10:75.
13. Thakur R, Jain A, Choudhary S. The impact of internet addiction on academic performance of medical students: A correlational study. *Med J Armed Forces India*. 2020;76(3):297-302.
14. Sharma MK, Rao GN, Benegal V, Thennarasu K. Technology addiction and academic performance among adolescents: A public health concern. *Asian J Psychiatry*. 2019;42:78-83.
15. Montag C, Wegmann E, Sariyska R, Demetrovics Z, Brand M. How to overcome social media addiction: Strategies to reduce problematic smartphone and internet use. *Curr Opin Psychol*. 2019;31:49-54.
16. Yen CF, Ko CH, Yen JY, Chang YP, Cheng CP. Multi-dimensional discriminative factors for internet addiction among adolescents regarding gender and age. *Psychiatry Clin Neurosci*. 2020;74(4):222-30.
17. Chen L, Yan Z, Tang W, Yang F, Xie X, He J. Problematic internet usage predicts poor sleep quality: A systematic review and meta-analysis. *PLoS One*. 2018;13(5):e0197660.
18. Ko CH, Yen JY, Yen CF, Chen CS, Chen CC. The association between internet addiction and psychiatric disorder: A review of the literature. *Eur Psychiatry*. 2021;36(2):74-81.
19. Kwon JH, Kim DJ, Cho H, Yang S. The influence of internet addiction on depression, anxiety, and stress: The role of online social relationships. *Comput Hum Behav*. 2019;92:144-50.