

ORIGINAL ARTICLE

Association of Insomnia with Excessive Internet Use among Late Adolescents

Muhammad Hasnain Murtaza¹, Moazma², Abdul Wadood³, Hamna Sarfraz^{4*}, Iqra Rashid⁵

^{1,2}The Movement Doctor physical therapy and Rehabilitation center

³Bahria Town International Hospital Lahore

⁴DHQ South City Okara and Dar ul sehat Hospital, Okara

⁵Mahjabeen Memorial Hospital

*Corresponding Author: Name: Hamna Sarfraz Email: hamnasarfraz338@gmail.com Contact: 302-7298359

ABSTRACT:

In the modern era, greater internet use is frequently seen among students. Their health is also being impacted, in addition to their academic. **Methods:** It was a cross-sectional study that took six months to complete. 220 male and female students were selected as a sample from Lahore's four private universities. The Insomnia Severity and the Addiction Test of the Internet assessed participants' insomnia and internet addiction levels. Using the chi-square test, categorical variables were measured, and their associations were determined. **Results:** Among a sample of 69 typical internet users, 31 (44.9%) claimed to have no significant insomnia, 29 (42%) had sub-threshold insomnia, 8 (11.6%) had moderate insomnia, and 1 (1.4%) had severe insomnia. Out of 113 sporadic individuals, 26 reported few sleeplessness, 29 had sub-threshold sleeplessness, 55 had moderate sleeplessness, and 23 had severe sleeplessness. Out of the 18 people who had a major internet addiction, 1 (5.6%) had no significant insomnia, 0 (0%), 5 (27.8%) had moderate insomnia, and 12 (66.7%) had severe insomnia. The chi-square test's p-value of 0.001 indicated a strong correlation between internet addiction and insomnia. Participants' average scores for internet addiction were 13.75, 6.81, 56.96, and 17.24, respectively. The coefficient of correlation, 0.57, suggested a significant relationship between the variables. **Conclusion:** Insomnia is an emerging problem day by day, and our study shows that it is significantly associated with internet addiction as people use social media widely, affecting their lifestyles. **Key Words:** Insomnia, Internet addiction, quality sleep, cell phone, social media, late Adolescent

INTRODUCTION:

We live in a technological age where most adults use laptops and smartphones. Many mobile users use smartphones, which are more advanced versions of mobile phones that make it simple to access the Internet and social networking applications.¹⁻³ The Internet contains positive and negative aspects, just like every coin. Connecting with the rest of the world is the Internet's biggest benefit. The Internet expanded the realm of social contact. The Internet was primarily created to support theses, provide guidance, do business, and create interactive statements. However, it had largely taken over their existence. Adults now use it for entertainment purposes instead of employment, and it is difficult to resist its allure.^{4,5} Adolescents are now developing internet addiction, which is influenced by several social and psychological aspects. This impacts students' mental health. Teenagers who used the Internet more frequently had less time to sleep and felt more worn out overall.^{6,8} 88% of youngsters and adolescents with depression and anxiety disorder had at least one sleep disorder, as previously observed. In most children and adolescents with depressive disorders, 72% had a sleep issue, 53% had insomnia, and 10% had both disturbances.⁹ Insomnia is the medical term for sleep disturbance and trouble falling asleep. According to population-based studies, 30% of adult populations reported having one or more insomnia symptoms. Adolescent insomnia can become chronic and damage one's physical and mental health, social and emotional functioning, and the proper operation of the body's essential organs, resulting in various pathological

conditions. A different study contrasts the outcomes of mild, moderate, and severe insomnia. Patients with moderate to severe cases of sleeplessness were also found to be depressed and to have heart failure.^{10,11} Regression analysis was used to conclude that Late-night mobile users were 1.39 times more likely to have poor sleep quality than non-users (p-value 0.002).⁷ The electronic devices and adolescents' poor sleep quality are related. This research evaluated the association between using a mobile before sleep and sleep quality. More than 70% of participants said using electronics before bedtime was problematic.¹² In this study, LEE M. CHEUNG et al. sought to evaluate whether internet addiction is connected with sleeplessness. Addiction to the Internet and depression has been linked.⁹ Adolescents slept 8.5 to 10 hours every night, according to a 2013 study by Sue K. Adams and Jennifer Daly. Both the amount and quality of sleep are directly correlated with cell phone technology, and usage intensity.¹³ Almost 8% of participants reported using the Internet excessively. In comparison, 55% said their sleep quality was subpar.¹⁴ However, numerous studies have been conducted in recent years to demonstrate a strong link between sleep deprivation and various biological characteristics that impact the human body, including decreased physical activity and attention span.^{15,16} The most recent online literature asserts that poor sleep is strongly linked to social media addiction associated with a sedentary lifestyle, which results in decreased productivity at work and negative health effects.^{17,18} For students to control Internet use and have better sleep quality,

sleep, and biological rhythm should be precise. This study will be useful in educating late adolescents about the risks of staying up late and using the Internet excessively. They need to get a restful sleep. A healthy amount of sleep enhances daily activities and common cognitive functions.

METHODS:

An analytical cross-sectional study was conducted using the Non-Probability Convenience Sampling approach. Using the following parameters= 1.96 , $D=0.05$, $P=16.8\%$ (19), the sample size estimated was 215. The data was obtained from several universities (Superior University, University of Lahore, University of Management & Technology, and University of Health Sciences). Late Adolescents of age 18-24, physiotherapists (DPT) students, Use of the internet/smartphones/laptops for more than 6 hours a day, and Gender, both male and female, were included. Insomnia present due to health-related disorders (pregnancy, cardiac, neurological) was excluded. The researcher collected the data after getting an approval letter from the HOD of the physiotherapy department and the ethical committee of Azra Naheed Medical College. Visit different universities. Convenient sampling technique to collect data. Questionnaire Internet Addiction Test (IAT) was used to evaluate, and SPSS 24.0v was used for statistical analysis.

RESULTS:

Among a sample of 69 typical internet users, 31 (44.9%) claimed to have no significant insomnia, 29 (42%) had sub-threshold insomnia, 8 (11.6%) had moderate insomnia, and 1 (1.4%) had severe insomnia. Out of 113 sporadic individuals, 26 reported few sleeplessnesses, 29 had sub-threshold sleeplessness, 55 had moderate sleeplessness, and 23 had severe sleeplessness. Out of the 18 people who had a major internet addiction, 1 (5.6%) had no significant insomnia, 0 (0%), 5 (27.8%) had moderate insomnia, and 12 (66.7%) had severe insomnia. The chi-square test's p-value of 0.001 indicated a strong correlation between internet addiction and insomnia. Participants' average scores for internet addiction were 13.75, 6.81, 56.96, and 17.24, respectively. The coefficient of correlation, 0.57, suggested a significant relationship between the variables.

Table 1: Age and Socio-demographic Characteristics of Participants

Age	Minimum	Maximum	Mean	SD
	18.00	24.00	21.6682	1.85401
Socio-demographic Variable			Frequency	Percentage
			n=220	
Gender	Male		105	47.7
	Female		115	52.3
Institute	Akhtar Saeed Medical And Dental College		62	28.2
	AzraNaheed Medical College		36	16.4
	University Of Management and Technology		61	27.7
	University Of Lahore		61	27.7

Insomnia Level	No clinically significant insomnia	58	26.4
	Sub threshold Insomnia	58	26.4
	Moderate Insomnia	68	30.9
	Severe Insomnia	36	16.4
Internet Usage	Average online user	69	31.4
	Occasional or frequent problems	133	60.5
	Significant problem	18	8.2

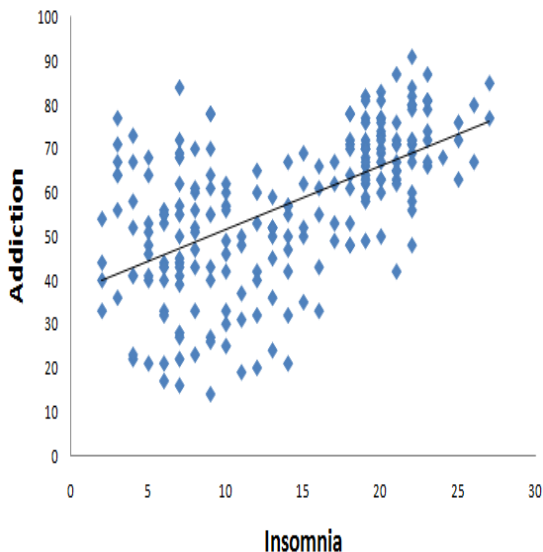
220 DPT students in total took part in the study. The participants' average age was 21.6 ± 1.8 . Out of all participants, there were 52.3 women and 47.7 men. 27.7% were from UMT, 27.7% were from UOL, 28.2% were from ASMDC, and 16.4% were from ANMC.

Table 2: Demographics of internet addiction related to insomnia

	Non-Significant	Sub threshold	Moderate	Severe	Total	p value
Average online user	31(44.9%)	29(42%)	8(11.6%)	1(1.4%)	69(100%)	<0.001
Occasional problems	26(19.5%)	29(21.8%)	55(41.4%)	23(17.3%)	133(100%)	
Significant problem	1(5.6%)	0(0%)	5(27.8%)	12(66.7%)	18(100%)	
Total	58(26.4%)	58(26.4%)	68(30.9%)	36(16.4%)	220(100%)	

31 (44.9%) of the 69 average online users reported no significant sleep issues, compared to 29 (42%) who had mild insomnia, 8 (11.6%) who had moderate, and 1 (1.4%) who had severe. Of 113 patients who occasionally had problems, 26 had just a little insomnia, 29 had sub-threshold insomnia, 55 had moderate insomnia, and 23 had severe insomnia. One (5.6%) of the 18 individuals with a significant internet addiction did not experience any significant insomnia, 0 (0%), 5 (27.8%) experienced moderate insomnia, and 12 (66.7%) experienced severe insomnia. The p-value of 0.001 for the chi-square test shows a strong correlation between internet addiction and insomnia.

Graph 1: Relationship between insomnia and Internet addiction



Participants' average scores for internet addiction were 13.75, 6.81, 56.96, and 17.24, respectively. The coefficient of correlation, 0.57, suggested a significant relationship between the variables.

DISCUSSION:

The mean age of DPT students found in this study is 21 years. The majority are female. Data were obtained from several medical institutions. Most participants who were average Internet users were not found to have insomnia. The majority of Occasional users had sub-threshold insomnia. Furthermore, the vast majority of internet-addicted students had moderate and severe insomnia. Our study concluded that addiction to the Internet is correlated with insomnia. Higher internet addiction has been found in our study population. It has been established that teenagers who do more work and spend more time online have reduced time for sleep and feel more fatigued.^{6, 20} In the majority of cases of depression in children and adolescents, 72% had a sleep issue, 53% had insomnia, and 10% had both disruption and depressive illness.⁹ According to prior research, 97% of Spanish adolescents reported using the Internet. Internet helps people access information and advances communication, which helps them engage in daily activities.^{1,2} According to McCarter SJ (2022) research, using a computer at night has negative effects on the quality of one's sleep.¹¹ According to BabakAmraa and Ali Shahsavari (2017), 56.1% of females and 38.9% of males reported disturbed sleep owing to nocturnal cell phone use.⁷ Electronic devices, according to Gammal A and Soliman (2019), are associated with adolescents' having poor-quality sleep.¹² In this study, Jain A et al.(2020) discovered a link between insomnia and Internet addiction.⁹ Sue K. Adams and Jennifer Daly (2013) discovered a direct correlation between cellular phone technology and the frequency of Use and both the quantity and quality of sleep.¹³ According to research, Internet addiction was linked to poor sleep quality.¹ According to the study, there is a clear link between internet addiction and insomnia, and as addiction increases, so does insomnia.

CONCLUSION:

The two features of insomnia and internet addiction had a strongly positive association. According to the findings from this research, the growing dependency on technology, such as smartphones and the Internet, negatively impacts sleep quality, leading to insomnia-related physical or mental health issues.

Author Contributions:

Conception and design: *Muhammad Hasnain Murtaza*

Collection and assembly of data: *Moazma, Abdul Wadood*

Analysis and interpretation of the data: *Hamna Sarfraz*

Drafting of the article: *Iqra Rashid*

Critical revision of article for intellectual content: *Hamna Sarfraz*

Statistical expertise: *Muhammad Hasnain Murtaza*

Final approval and guarantor of the article: *Iqra Rashid*

Conflict of Interest: *None declared*

REFERENCES:

1. Arzani-Birgani A, Zarei J, Favaregh L, Ghanaatiyan E. Internet addiction, mental health, and sleep quality in students of medical sciences, Iran: A cross-sectional study. *Journal of Education and Health Promotion*. 2021;10.
2. Tamura H, Nishida T, Tsuji A, Sakakibara H. Association between excessive mobile phone use and insomnia and depression among Japanese adolescents. *International journal of environmental research and public health*. 2017;14(7):701.
3. Rehman A, Zahra S, Khan R, Asghar U, Din S, Raza S. Association Of Insomnia With Excessive Internet Use Among Physical Therapy Students In Lahore, Pakistan. *European Journal of Health Sciences*. 2021;6(2):41-8.
4. Rehman A, Zahra S, Khan R, Asghar U, Din S, Raza S. Association Of Insomnia With Excessive Internet Use Among Physical Therapy Students In Lahore, Pakistan. *European Journal of Health Sciences*. 2021;6(2):41-8.
5. Singh B, Singh KK, Ansari JA. Internet Addiction, Sleep Quality and Depression among Undergraduate Medical Students in Nepal. *International Journal of Health Sciences and Research*. 2021;11(2):243-50.
6. La Rahmat Wabula M, Nurlina WO, Nizar AM, Agus R. The Relationship between Internet Addiction and Insomnia in Student Class IX. *Jurnal Ners*. 2020;15(2).
7. Amra B, Shahsavari A, Shayan-Moghadam R, Mirheli O, Moradi-Khaniabadi B, Bazukar M, et al. The association of sleep and late-night cell phone use among adolescents. *Jornal de pediatria*. 2017;93(6):560-7.
8. Kokka I, Mourikis I, Nicolaides NC, Darviri C, Chrousos GP, Kanaka-Gantenbein C, et al. Exploring the effects of problematic internet use on adolescent sleep: a systematic review. *International Journal of Environmental Research and Public Health*. 2021;18(2):760.
9. Jain A, Sharma R, Gaur KL, Yadav N, Sharma P, Sharma N, et al. Study of internet addiction and its association with depression and insomnia in university students. *Journal of Family Medicine and Primary Care*. 2020;9(3):1700.
10. Zafar N, Kausar R, Pallesen S. Internet Addiction, Insomnia and Mental Health Problems in University Students in Pakistan. *Pakistan Journal of Social and Clinical Psychology*. 2018;16(2):10-6.
11. McCarter SJ, Hagen PT, Louis EKS, Rieck TM, Haider CR, Holmes DR, et al. Physiological Markers of Sleep Quality: A Scoping Review. *Sleep Medicine Reviews*. 2022:101657.
12. Gammal A, Soliman MAF, Elsheikh MMA, Abozahra AAE. Internet addiction and Internet gaming disorder and associated insomnia among a sample of Al-Azhar University students, clinical study. *The Egyptian Journal of Hospital Medicine*. 2019;77(5):5718-26
13. Adams SK, Daly JF, Williford DN. Article Commentary: Adolescent Sleep and Cellular Phone Use: Recent Trends and Implications for Research. *Health services insights*. 2013;6:HSI.S11083.
14. Oliveira R, Ceylan Hİ, Brito J, Martins A, Nalha M, Mendes B, et al. Within-and between-mesocycle variations of well-being measures in top elite male soccer players: a longitudinal study. *Journal of Men's Health*. 2022;18(4):94.
15. Prabowo H, Dewi MP. Intercorrelation of insomnia, sleep duration, internet use duration and internet addiction on millennial in jakarta. *Dinasti International Journal of Education Management And Social Science*. 2020;1(5):775-95.

16. Otsuka Y, Kaneita Y, Itani O, Matsumoto Y, Jike M, Higuchi S, et al. The association between Internet usage and sleep problems among Japanese adolescents: Three repeated cross-sectional studies. *Sleep*. 2021;44(12):zsab175.

17. Gayathri A, Nesan GSCQ. Assessment of prevalence of Internet addiction and its relation to sleep quality among undergraduate students of saveetha medical College, Chennai. *EXECUTIVE EDITOR*. 2020;11(05):519.

18. Chen YL, Gau SSF. Sleep problems and internet addiction among children and adolescents: a longitudinal study. *Journal of sleep research*. 2016;25(4):458-65.

19. Younes F, Halawi G, Jabbour H, El Osta N, Karam L, Hajj A, et al. Internet addiction and relationships with insomnia, anxiety, depression, stress and self-esteem in university students: a cross-sectional designed study. *PloS one*. 2016;11(9):e0161126.

20. Layegh H, Abazari M. Improper use of the Internet and its relationship with daytime sleepiness in medical sciences students at Ardabil University of Medical Sciences. *Journal of Health*. 2019;10(3):379-86.