PREVALENCE OF INSOMNIA AND ITS IMPACT ON THE QUALITY OF LIFE OF MEDICAL STUDENTS

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Abstract. Background: Insomnia is one of the most common sleep disorders affecting students, particularly those in medical fields due to academic stress and peer pressure. Poor sleep quality significantly influences academic performance and overall quality of life.

Objectives: To identify the prevalence of insomnia among medical students and to evaluate its impact on their quality of life.

Methods: A cross-sectional study was conducted from january 2025 to March 2025 among 150 medical students at Asia International University (AIU) using the Insomnia Severity Index (ISI) and a 3-grade Self-Reported QoL Scale. Association between insomnia and QoL was analyzed using the Chi-square test and correlation analysis.

Results: The prevalence of insomnia among medical students was found to be 36.7% (n = 55). The mean ISI score was 13.8 ± 5.2, indicating mild to moderate insomnia. A significant positive correlation (r = +0.48, p < 0.001) was observed between sleep quality and QoL indicating that better sleep was associated with better quality of life.

Conclusion: Insomnia is highly prevalent among medical students and significantly reduces their quality of life. Regular screening and stress management programs, regular feedback proper councelling should be integrated along with academic activities to improve student well-being.

Keywords: Insomnia, Impact, Quality of Life, Medical Students

Introduction

According to the WHO, Insomnia is defined as a disorder characterized by difficulty in initiating or maintaining sleep, or by non-restorative sleep, which results in impairment of daytime functioning (1).

Sleep plays a vital role in maintaining physical and mental health. Insomnia, defined as difficulty in initiating or maintaining sleep, affects concentration, mood, and academic performance. Medical students are particularly vulnerable to sleep disorders due to heavy workloads, irregular study hours, and examination-related stress.

Globally, the prevalence of insomnia among medical students ranges from 30% to 60% (2). Poor sleep quality has been associated with anxiety, depression, reduced academic performance, and impaired quality of life (QoL). However, data regarding the prevalence of insomnia and its impact on QoL among medical students in Uzbekistan and neighboring regions remain limited.

This study aims to assess the prevalence of insomnia and its relationship with quality of life among medical students at Asia International University.

Methodology

This descriptive study was carried from January 2025 to March 2025. All the participants were informed about the research and how to fill the online questionnaire and asked to fill the online google form. Purposive sampling technique was used to select among local Uzbek and International medical students studying at AIU. In this study only the medical students studying at

AIU were taken where students with known history of sleep related issues were excluded from the study. As well students with known some form of psychiatric illness or taking sleep medication were also excluded from the study.

Insomnia Severity Index (ISI) – 7 Questions (3)

There are 7 question, each scored from 0 to 4. The total score ranges from 0–28. Scoring Interpretation

$0–7 \rightarrow$ No clinically significant insomnia
$8–14 \rightarrow$ Mild insomnia
$15–21 \rightarrow$ Moderate insomnia
$22–28 \rightarrow$ Severe insomnia

Items	Focus	Scoring (0-4)
1	Difficulty falling asleep	0=None, 4=Very severe
2	Difficulty staying asleep	0-4
3	Problems with waking up too early	0-4
4	Satisfaction with current sleeping pattern	0=Very satisfied, 4=Very dissatisfied
5	Interference of sleep problems with daily functioning	0-4
6	Notice-ability of sleep problems to others	0-4
7	Distress caused by sleep problems	0-4

Self-reported Quality of Life (QoL) Questionnaires:

"How would you rate your overall quality of life over the past month?"

Response Grading was made on the basic of following criteria:

Each of 5 domains rated:
1 = Poor | 2 = Moderate | 3 = Good

Domain	Questions	Rating (1-3)
Physical Health	How would you rate your physical health in the past 2 weeks?	1–3
Psychological Well-being	How satisfied are you with your mental/emotional state?	1–3
Social Relationship	How satisfied are you with your social support and interactions?	1–3
Academic Performance	How satisfied are you with your study focus and results	1–3
General Life Satisfaction	Overall, how satisfied are you with your life?	1–3

QoL Grading system: Out of total 15 score, if the students scores in between 12-15 that will be categories as good quality of life, in between 9-11 moderately affected quality of life where as if the score is in between 5-8 will be categorized as poor garde in quality of life

Data were analyzed using SPSS version 26. Descriptive statistics (mean, SD, percentage) and Pearson correlation were applied. Significance was set at $p < 0.05$.

Ethical approval was obtained from the Institutional Review Board of Asia International University. Informed consent was obtained from all participants.

Results

Table 1: Socio-demographic information of the respondents

Characteristics	Frequency (n=150)	Percentage(%)
Respondent Age		
18-20	108	72
21-23	42	28
Respondent gender		
Male	60	40
Female	90	60
Respondent level of study		
1st year	91	60.7
2nd year	16	10.7
3rd year	43	28.6
Respondent living arrangement		
On-campus	133	88.7
Off-campus	17	11.3

Above table shows that most of the respondents were from the age range 18-20 (72%), similarly majority 60% of respondents were female respondents. Huge gap can be seen in the level of study of respondents, massive number in lwere from 1st year (60.7%), followed by 3rd year (28.62%) and .2nd year (10.7%) only.

Table 2: Prevalence of Insomnia among Medical Students (n = 150)

Insomnia Status	Frequency (n)	Percentage (%)
No Insomnia	95	63.3
Mild Insomnia	39	26
Moderate insomnia	14	9.3
Severe insomnia	2	1.4
Total with insomnia	55	36.7
Grand Total	150	100

Above table shows, This resulted in 55 students (36.7%) being classified as having insomnia: 39 mild, 14 moderate, 2 severe. The remaining 95 students (63.3%) had no clinically significant insomnia (ISI $\leq$ 7).

Table 3: Distribution of respondents according to different variables to examine the prevelance of Insomnia

ISI Items	Questions	Mean Score (Among 55 students) (0-4)
1.	Difficulty falling asleep	**2.4**
2.	Difficulty staying asleep	**2.3**
3.	Problems waking up too early	**1.8**
4.	Satisfaction with current sleep pattern	**2.5**
5.	Interference with daily functioning	**2.2**
6.	Noticeability of sleep problems to others	**1.7**
7.	Distress caused by sleep problems	**2.1**
Total ISI Score ISI (0-28)	Sum of all 7 items	**14.0 +_ 3.5**

Above table shows that the distribution of 55 respondents to examin different variables with the mean score. Students reported the highest problems with sleep dissatisfaction (2.5) and difficulty falling asleep (2.4), followed by difficulty staying asleep (2.3). Issues like early morning awakening (1.8) and noticeability of sleep problems (1.7) were comparatively lower.

Table 4: Distribution of respondents according to the impact on the quality of life of medical students

QoL Grade	Frequency	Interpretation
Poor	20	36.4%
Moderate	25	45.5%
Good	10	18.2%
Total	55	100%

Above table shows 36.4% poor impact on the quality of life of medical students where as 45.5%(n=25) shows moderate impact on the quality of their life with insomnia.

Table 5: Distribution of respondents according to the **Self-Reported QoL among Students with and without Insomnia.**

QoL Grade	With Insomnia(n=55)	Without Insomnia (n=95)	Total (n=150)
Poor	31 (56.4%)	9(9.5%)	40 (26.7%)
Moderate	16(29.1%)	41(43.1%)	57 (38.0%)
Good	8(14.5%)	45(47.4%)	53 (35.3%)

Above table shows that insomnia adversely affects the quality of life among medical students. Those without insomnia were more likely to report good or moderate QoL, while students with insomnia predominantly reported poor QoL. The association between sleep quality and QoL was statistically significant, highlighting the positive impact of adequate sleep on overall well-being.

Table 6: Correlation between ISI Score and QoL Score

Variable	Mean ±SD	Correlation (r)	p-value
ISI Score	10.8±5.6	-0.48	<0.001
QoL Score	10.9±2.4		

Above table shows that there was a significant positive and high statistical significant with p-value <0.001 that students without insomnia had significantly better quality of life.

Discussion

In this study, most respondents were aged 18–20 years, reflecting the predominance of early undergraduate students in the study population. Similar age distributions have been reported in other university-based studies, where younger students form the largest proportion due to higher enrollment in initial academic years [4]. This age group represents a critical period for shaping health awareness and behaviors.Female students constituted a higher proportion of respondents than males, a finding commonly observed in questionnaire-based studies. Previous research suggests that female students are generally more willing to participate in health-related surveys and often demonstrate greater engagement with health issues compared to their male counterparts [5]. This gender difference should be considered when interpreting the findings.The majority of participants were first-year students and resided on campus. Academic level and living arrangements are important contextual factors, as both influence exposure to health information, peer interaction, and access to institutional support services. Studies have shown that students living on campus may benefit from better access to academic and health resources, which can positively affect awareness and practices [6,7].

In the present study, more than one-third of the medical students (36.7%) were found to have insomnia, with most cases falling into the mild category, followed by moderate and a small proportion with severe insomnia. Although the majority of students did not show clinically significant sleep disturbance, the presence of insomnia in over one-third of the cohort is concerning, as even mild sleep problems can negatively affect concentration, academic performance, and emotional well-being. Similar prevalence rates of insomnia among medical students have been reported in previous studies, highlighting sleep disturbance as a common issue in this academically demanding group [8]. The predominance of mild insomnia suggests that early stressors related to academic workload, irregular sleep schedules, and lifestyle changes may play a significant role. If left unaddressed, these mild symptoms may progress to more severe sleep disorders over time. These findings emphasize the importance of early screening and simple interventions such as sleep hygiene education and stress management programs within medical institutions [9].

The results show that sleep dissatisfaction and difficulty falling asleep were the most prominent problems among students with insomnia, followed closely by difficulty maintaining sleep. This pattern suggests that psychological stress, academic pressure, and irregular bedtime routines may play a greater role in disrupting sleep onset and perceived sleep quality rather than causing early morning awakening. Similar findings have been reported among medical students, where insomnia is commonly characterized by prolonged sleep latency and non-restorative sleep [10].Lower scores for early morning awakening and the noticeability of sleep problems may indicate that many students underestimate the seriousness of their sleep disturbances or consider them a normal part of medical training. This normalization of poor sleep can delay help-seeking and allow mild symptoms to persist or worsen over time. Early identification and education on sleep hygiene are therefore essential to prevent progression to more severe sleep disorders [11].

The findings show that insomnia had a noticeable impact on the quality of life of medical students, with over one-third reporting a poor impact and nearly half experiencing a moderate decline in daily functioning. This suggests that sleep disturbances significantly affect students'

physical well-being, emotional health, and academic performance, even when insomnia is not severe. Similar studies have demonstrated a strong association between insomnia and reduced quality of life among medical students and young adults [10,11]. These results highlight the importance of early recognition of sleep problems and timely supportive interventions to improve overall well-being.

The findings demonstrate a clear and statistically significant association between insomnia and poorer quality of life among medical students. Students without insomnia were more likely to report good or moderate quality of life, whereas those with insomnia predominantly experienced poor quality of life. This reinforces the well-established link between inadequate sleep and impaired physical, psychological, and social functioning. Similar observations have been reported in previous studies, emphasizing that good sleep quality plays a crucial role in maintaining overall well-being and academic efficiency in medical students [12,13].

The present findings demonstrate a strong and statistically significant correlation between the Insomnia Severity Index (ISI) and quality of life scores, with students without insomnia reporting significantly better quality of life ($p < 0.001$). This highlights the substantial impact of sleep quality on physical, emotional, and social well-being among medical students. Poor sleep has been shown to impair daily functioning, increase stress, and reduce overall life satisfaction, which may adversely affect academic performance and mental health [12].These results are consistent with existing evidence indicating that increasing insomnia severity is associated with progressive deterioration in quality of life. Adequate and restorative sleep therefore plays a critical role in maintaining overall well-being, and early identification of insomnia may help prevent long-term negative consequences on students' health and academic success [14].

Conclusion

Many medical students struggle with sleep, and even mild insomnia can quietly affect their focus, mood, and day-to-day life. Trouble falling asleep and restless nights often stem from the pressures of academic life and changing routines. What really stands out is how deeply sleep problems impact overall well-being—students with insomnia consistently report a lower quality of life. These findings remind us that paying attention to sleep and offering simple support, like tips on good sleep habits and stress management, can make a real difference in helping students feel better, think clearer, and succeed in their studies.

Recommendations

Supporting medical students' well-being starts with identifying sleep problems early and offering simple check-ins. Teaching healthy sleep habits, providing stress relief resources like counseling or mindfulness sessions, and creating a restful campus environment can make a big difference. With ongoing support, students can feel healthier, more focused, and better prepared to thrive academically.

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