

Sleep Quality Assessment among Medical Intern's: An Observational Study

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ABSTRACT

Background: Medical professionals are often subjected to long working hours and intensive academic teaching programs. This leads to altered sleep timings, duration, and quality. This study was carried out to assess the quality of sleep in medical intern's at a tertiary care teaching hospital.

Methodology: This was a cross-sectional, observational, descriptive study conducted among medical intern's who were posted in various departments of a medical college in North India. A prestructured, pretested questionnaire incorporated into Google Forms was designed and circulated, containing questions on the Pittsburgh Sleep Quality Index (PSQI). All the data were collected in a single day.

Results: A total of 130 intern's participated in the study, where the mean global score (PSQI) was 6 with ± 2.82 values, and the global score ranged from 0 to 16. More than 70% of the students had a bad sleep quality (score 6–21). A majority of intern's (70%) slept late at night (12–2.59 a.m.), and most (73%) woke up between 7 and 9 a.m. Around half of the people could fall asleep within 15 minutes of lying in bed, which increased to three-quarters within 30 minutes.

Conclusion: A large proportion of medical intern's have poor sleep quality and delayed sleep phase syndrome, which can increase their morbidity and also affect the quality of patient care.

Keywords: Medical intern's, Pittsburgh sleep quality index, Sleep quality.

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INTRODUCTION

Sleep is an essential part of life. Healthy sleep helps to provide rest to the body's functions and improves memory.^{1,2} Medical professionals are often subject to long working hours and intensive academic teaching programs. This leads to altered sleep timings, duration, and quality. It is an important cause of medical errors and increased violence in the workplace.³

Despite repeated regulatory and administrative circulars that attempt to curb the long working hours of medical students, the overburdened intern's often have prolonged shifts due to heavy patient load and limited workforce. Intern's posted in emergency and general medicine wards are often subject to long working hours and poor-quality sleeping conditions in hospitals. This study was carried out to assess the quality of sleep in medical intern's at a tertiary care teaching hospital.

METHODOLOGY

This was a cross-sectional, observational, descriptive study conducted among medical intern's posted in various departments of a medical college in North India. A prestructured, pretested questionnaire incorporated into Google Forms was designed and circulated, containing questions on the Pittsburgh Sleep Quality Index (PSQI). The entire data were collected on a single day in March 2024 after obtaining consent, analyzing, and maintaining participant confidentiality within the ethical boundaries of the Declaration of Helsinki.

The data were collected using Google Forms to reach out to the maximum number of intern's (150) in a single day and avoid information bias. Data from 130 responded medical intern's were downloaded into Google Sheets and analyzed to calculate the PSQI component score and the PSQI Total Score.

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RESULTS

A total of 130 intern's participated in the study, where the mean global score (PSQI) was 6 with ± 2.82 values, and the global score ranged from 0 to 16. More than 70% of the students had a bad sleep quality (score 6–21). The mean time to fall asleep once in bed was 21.8 \pm 14.8, and the mean sleeping hours by intern's was 6.36 \pm 1.04.

A majority of intern's (70%) slept late at night (12–2.59 a.m.), and most (73%) woke up between 7 and 9 a.m. Around half of the people could fall asleep within 15 minutes of lying in bed, which increased to three-quarters within 30 minutes. The duration of sleep was variable. A third of the subjects slept for only 5 hours, while another third obtained 6 hours every night. The details of the sleep characteristics are summarized in [Tables 1 to 5](#).

Table 1: Waking time of the medical intern's

Waking time	Number	Frequency (%)
Before and up to 5 a.m.	5	3.85
After 5 a.m. up to 6 a.m.	9	6.92
After 6 a.m. up to 7 a.m.	17	13.08
After 7 a.m. up to 8 a.m.	65	50.00
After 8 a.m. up to 9 a.m.	30	23.08
After 9 a.m.	4	3.08
Total	130	100.00

Table 2: Going to sleep time of the medical intern's

Sleep time	Number	Percentage
9 p.m.	1	0.77
10 p.m.	9	6.92
11 p.m.	23	17.69
12 p.m.	30	23.08
1 p.m.	35	26.92
2 p.m.	26	20.00
3 a.m.	4	3.08
4 a.m.	2	1.54
Total	130	100.00

Table 3: Time taken to fall asleep of the medical intern's

Time taken to fall asleep	Number	Frequency (%)
≤15 minutes	66	50.77
16–30 minutes	36	27.69
30–45 minutes	14	10.77
45–60 minutes	10	7.69
>1 hour	4	3.08
Total	130	100.00
Mean	21.8 ± 14.8	

Table 4: Total sleep hours

Sleeping hours	Number	Frequency (%)
≤4	3	2.31
More than 4 up to 5	17	13.08
More than 5 up to 6	39	30.00
More than 6 up to 7	46	35.38
More than 7 up to 8	24	18.46
>8	1	0.77
Total	130	100.00
Mean	6.36 ± 1.04	

DISCUSSION

Sleep quality among medical intern's has implications for both the intern's well-being and patient care. Medical internship, marked by long hours, high stress, and demanding responsibilities, often leads to disrupted sleep patterns and inadequate rest. The present study evaluated sleep quality in medical intern's using PSQI, and we found poor sleep quality measured by PSQI, which showed 71

Table 5: Pittsburgh sleep quality index (PSQI)

Global score PSQI	Frequency	Percentage
0–5 (Good sleep quality)	59	45.36
6–21 (Poor sleep quality)	71	54.62
Total	130	100

(54.62%) intern's had PSQI > 5 and poor sleep latency as 64/130 (49.56%) of intern's took more than 15 minutes to sleep once they are on the bed. Our findings were in concordance with the study by Corrêa CC et al.⁴ who have shown poor sleep latency in medical students, that is, 44/130 (29.5%) of students took more than 30 minutes to fall asleep, they also reported PSQI > 5 in 87.1% medical students which is highest till date. And 68% of students slept for 6–7 hours per night in their study, which was different from the present study, which showed only 35.38% of intern's slept for 6–7 hours per night.

Our findings were consistent with the study by Preišegolavičiūtė E et al.⁵ who reported 59.4% of students had PSQI > 5. A study by Sundas N et al.⁶ showed 137 (63.1%) students took less than 15 minutes to fall asleep, and PSQI > 5 was seen in 96 (44.23%), which was comparable with the present study.

A study by Mishra J et al.⁷ showed sleep latency of <15 minutes was present in 72 (25.4%) students, and 160 (56.3%) students slept for 6–7 hours.

A study conducted in Rwanda by Nsengimana et al.⁸ during COVID time showed a high prevalence (80%) of poor sleep quality in medical students; 87% of students in their study slept for less than 7 hours, and 53% of students took more than 15 minutes to fall asleep.

It was observed that many subjects exhibited a delayed sleep phase syndrome, that is, they were sleeping late, and consequently, woke up late. If these intern's have duties from the early morning hours, it can lead to decreased sleep duration, poor sleep quality with decreased REM, skipping breakfast, and often decreased concentration and attention throughout the day.

Chronic sleep deprivation and poor sleep quality, defined by high PSQI, are associated with an increased risk of cardiovascular disease, metabolic disorders, depression, and impaired immune function. Sleep-deprived intern's may experience impaired cognitive function, reduced attention to detail, slower reaction times, and decreased ability to learn and retain information, which can compromise patient care and safety. Poor sleep quality is closely related to poor mental health as increased risk of depression and anxiety among medical intern's, further affecting their overall well-being and career satisfaction.⁹ Various interventions can help to improve the quality of sleep and thereby prevent health consequences in intern's.^{10,11} Providing education on sleep hygiene practices and the importance of sleep for physical and mental health can help intern's prioritize sleep and recognize signs of sleep disorders. Implementing policies to reduce extended work hours, ensuring adequate breaks between shifts, and optimizing schedules to minimize circadian disruptions can improve sleep quality. Offering counseling services, stress management workshops, and peer support groups can help intern's cope with stress and improve their overall well-being, potentially enhancing sleep quality. Utilizing wearable devices or smartphone apps to monitor sleep patterns and provide feedback on sleep quality can help intern's better understand their sleep habits and adjust accordingly.^{10,11}

CONCLUSION

Sleep quality among medical intern's is a complex issue influenced by various factors, including work hours, stress, workload, and environmental conditions. All these factors need to be addressed as they are crucial for improving the intern's health and well-being and optimizing patient care outcomes. By implementing effective interventions and promoting a culture that values sleep and well-being, medical institutions can support intern's in managing their demanding roles while maintaining their own health. Further research and continued advocacy for sleep-friendly practices are essential to fostering a sustainable and healthy training environment for future healthcare professionals.

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