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Knowledge, Attitude, and Practice Regarding Sleep Hygiene Among Medical Students in Bangladesh

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Abstract

Background: Sleep hygiene is crucial for both physical and mental health, especially for medical students who deal with demanding coursework and pressures. Psychological issues and poor academic performance are associated with poor sleeping habits. Despite its importance, the knowledge, attitudes, and sleep hygiene habits of Bangladeshi medical students have not yet received sufficient attention. **Methods:** At Ad-din Sakina Women's Medical College and Hospital in Jashore, 200 medical students were selected by convenience sampling for this cross-sectional survey. A standardized, pre-tested questionnaire covering four areas—demographics, knowledge, attitude, and sleep hygiene practice—was used to collect data. Version 25 of the SPSS software was used to conduct descriptive analysis. **Results:** Most respondents (78.5%) reported awareness of sleep hygiene, but behavioral practices indicated significant gaps. While 97% cleaned their beds before sleep and 79% prayed before bed, 90% used social media at night, and only 6% avoided caffeine before bedtime. Nearly half (44.5%) reported insufficient sleep, and 42% experienced persistent anxiety. Though 98% recognized insomnia as a public health issue, fewer acknowledged the risks of sleeping pill dependency (49%) and addiction (31.5%). **Conclusion:** The findings highlight a disparity between knowledge and behavior concerning sleep hygiene. Although awareness is relatively high, unhealthy practices persist. There is a critical need for structured educational interventions focusing on behavioral change and sleep literacy. These efforts could enhance well-being and academic performance among medical students and future healthcare providers.

Keywords: Sleep hygiene, Insomnia, Medical students, Knowledge, Attitude, and Practice (KAP).

Introduction

A key component of preserving both physical and mental well-being is sleep hygiene, which is characterized as a collection of environmental and behavioral practices that support higher-quality sleep.[1] Particularly for medical students, the transition from childhood to adulthood sometimes involves significant lifestyle changes, such as academic pressure, erratic scheduling, and emotional stress, all of which have an adverse effect on hygiene and sleep quality.[2] Inadequate sleep has a variety of negative effects, including affecting memory recall, emotional stability, cognitive performance, and even long-term health problems, including depression, diabetes, and high blood pressure.[3,4]

Poor sleep hygiene among college students, particularly medical students, is becoming a bigger problem on a global scale.[5–8] More than 50% of medical students have some kind of sleep disturbance or poor sleep quality, according to studies done in North America, Europe, and Asia. [9,10] Stress, excessive mobile phone usage, and poor time management were identified as the main causes of poor sleep hygiene in comprehensive research that included almost 35,000 students from 27 different countries.[11] In resource-constrained settings, such issues are often exacerbated by environmental limitations, insufficient mental health support, and overcrowded hostels, which further compromise the sleep health of students.[12,13]

According to the research currently accessible, medical students' sleep issues in Bangladesh are not well-documented and have not received enough

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attention. More than 60% of students at a public medical college in Dhaka reported having sleep problems as a result of academic stress, excessive screen time, and ignorance of proper sleep hygiene, according to one study.[14] Sleep health is still underappreciated in the larger discussion of student well-being in Bangladesh, despite being a major factor in both academic achievement and psychological well-being. Additionally, the majority of medical schools noticeably lack institutional treatments or awareness campaigns addressing sleep hygiene.

In light of this, the purpose of this study is to bridge the knowledge gap by examining the understanding and practices of sleep hygiene among medical students at Ad-din Sakina Women's Medical College, Jashore. This study used a thorough KAP (Knowledge, Attitude, and Practice) approach, in contrast to previous research that either concentrated just on insomnia or generalized sleep behavior.

This study's justification is based on a number of distinctive characteristics. First off, although research on sleep hygiene has been done all over the world, very few have placed the results in the sociocultural context of South Asia, particularly in Bangladesh's second-tier cities. Second, by covering both students and aspiring medical professionals, this study uses a diverse sample of respondents, offering a deeper comprehension of the problem. Finally, by pinpointing certain behavioral gaps and misconceptions, the study provides the possibility of useful interventions, assisting curriculum designers, student counselors, and legislators in putting focused solutions into practice.

Materials and methods

Study Design, Setting, and Sampling: This cross-sectional study was conducted from July 2024 to December 2024 to evaluate the sleep hygiene knowledge, attitudes, and practices among medical students at Ad-din Sakina Women's Medical College, Jashore. A total of 200 participants were recruited using a convenience sampling method due to time and logistical constraints. Laboratory investigations were not performed, as the study relied entirely on self-reported data.

Questionnaire Development: A structured, pretested questionnaire was used for data collection. The instrument comprised four key sections:

1. Demographic Information

2. Knowledge on Sleep Hygiene (e.g., understanding of sleep types, timing, and behavioral influences)

3. Attitude toward Insomnia and Sleep Practices

4. Behavioral Practices (e.g., use of digital devices, caffeine consumption, prayer, music, etc.)

The questionnaire was developed through a literature review and consultations with public health experts. It was reviewed for face and content validity by an expert panel of academic faculty.

Enumerator Training: Enumerators and supervisors were recruited from recent medical graduates. They underwent a one-day intensive training session comprising a structured orientation, mock interviews, and role-playing exercises to ensure consistency and minimize interviewer bias.

Data Collection and Analysis: Data were collected through paper-based surveys administered in classrooms and common areas. Responses were documented using **Google Sheets** for initial entry, followed by statistical analysis using **SPSS Version 25**. Descriptive statistics, including frequencies, percentages, and cross-tabulations, were computed to explore patterns in knowledge, attitudes, and practices.

Ethical considerations: Oral consent was obtained from all participants before their involvement in the study. Confidentiality and anonymity were assured throughout the data collection and analysis.

Results

Demographic Characteristics: The majority of respondents (85.5%) were aged between 21 and 25 years, with a small proportion (2%) being over 26 years old. Regarding family income, nearly half (47.5%) reported monthly earnings between BDT 30,001 and 50,000. Most participants (80%) lived at home, while 20% resided in hostels. Headache was reported by exactly half of the participants. In terms of nutritional status, 49.5% had normal weight, while 25.3% were overweight and 18.2% obese. Only 7.1% were underweight.

Table 01: Demographic profile of the study participants (n=200)

Characteristics	Frequency	Percentage
Age in years		
≤ 20	31	15.5
21-25	165	85.5
Over 26	4	2.0
Family income		
≤ 30,000	58	29.0
30001-50,000	95	47.5
Above 50,000	47	23.5
Living place		
Hostel	40	20.0
Home	160	80.0
History of Headache		
Yea	100	50.0
No	100	50.0
Nutrition status		
Underweight	14	7.1
Normal weight	98	49.5
Overweight	50	25.3
Obese	36	18.2

Knowledge About Sleep Hygiene: Table 02 summarizes the participants' knowledge. A significant proportion (78.5%) were aware of the concept of sleep hygiene, while 65% were familiar with sleep types. However, misconceptions and unhealthy behaviors were apparent: 60% reported sleeping in the morning, 44.5% felt they did not get enough sleep, and 42% felt anxious most of the time. Although 97% practiced cleaning the bed before sleeping, which is a good habit, only 6% avoided caffeine before bedtime. Notably, 8% admitted using the phone at night, and 21.5% had previously experienced insomnia twice, while 13% had faced it three times.

Table 02: Participants' Knowledge Regarding Sleep Hygiene Practices (n=200)

Item	Frequency	Percentage
Aware of the concept of sleep hygiene	157	78.5
Understand different stages or types of sleep	130	65.0
Habitually sleep during morning hours	120	60.0
Maintain a clean and orderly bed before sleeping	194	97.0
Consume caffeinated beverages such as tea or coffee prior to sleeping	12	6.0
Prefer to rest in a calm and noise-free environment	121	60.5
Engage in phone calls during late-night hours	16	8.0
Frequently experience dreams during sleep	56	28.0
Consistently fall asleep at a delayed or late hour	81	40.5
Tend to wake up in the middle of the night	65	32.5
Frequently feel sleep-deprived or unrested	89	44.5
Experience persistent anxiety throughout the day	84	42.0
Often feel downcast, fatigued, or have recurring negative thoughts	83	41.5
Experience physical discomfort or pain due to a medical condition	39	19.5
Depend on medication or sedatives to initiate sleep	6	3.0
History of experiencing episodes of insomnia		
Two times	43	21.5
Three times	13	13.0

Attitudes Toward Sleep Hygiene: Table 03 reveals that 98% of participants acknowledged insomnia as a global and national public health concern. However, only 49% believed that overuse of sleeping pills could cause dependency, with fewer recognizing the risks of tolerance (14.5%) and addiction (31.5%). This indicates a potential underestimation of pharmacological risks associated with poor sleep hygiene.

Table 03: Participants' Attitudes Toward Insomnia and Sleep-Related Issues (n=200)

Statement	Frequency	Percentage
Recognize insomnia as a widespread public health concern worldwide	196	98.0
Believe insomnia is a significant issue within our national context	196	98.0
Acknowledge that excessive use of sleep medication may lead to dependence	98	49.0
Recognize that repeated use of sleep medication can reduce its effectiveness	29	14.5
Believe that misuse of sleep aids may lead to addiction	63	31.5

Sleep Hygiene Practices: As shown in Table 4, 80% of respondents reported voiding before bedtime, and 79% engaged in prayer. A large portion (90%) checked social media before sleep, suggesting a prevalent digital habit. Other behaviors included listening to music (47%), experiencing nightmares (10.5%), and symptoms like parasomnia (2.5%) and restless leg syndrome (1.5%). Alarmingly, only 2% reported taking sugary beverages before sleep, and 1.5% experienced snoring.

Table 04: Self-Reported Sleep Hygiene Practices Among Participants (n=200)

Statement	Frequency	Percentage
Use the bathroom before sleeping and after waking up	160	80.0
Listen to music as a bedtime routine	94	47.0
Browse or use social media platforms before sleep	180	90.0
Engage in prayer or religious practice before bedtime	158	79.0
Experience disturbing dreams or nightmares during sleep	21	10.5
Exhibit abnormal sleep behaviors (e.g., sleepwalking, talking)	5	2.5
Experience symptoms of restless leg syndrome at night	3	1.5
Produce snoring sounds while sleeping	3	1.5
Consume sugary drinks or beverages before bedtime	4	2.0

Discussion

Even though most participants had a basic understanding of sleep hygiene and its significance, the study revealed that their actual behaviors frequently went against this understanding. Emotional stress, insufficient sleep length, and using digital devices right before bed were common, indicating a knowledge-practice mismatch. Misconceptions about medicine reliance were prevalent, yet almost all people had positive opinions of insomnia as a public health concern.

While 78.5% claimed knowledge about sleep hygiene, behaviors such as using phones at night (90%) and sleeping late (60%) indicate that awareness does not necessarily translate into healthy practices. The high percentage (44.5%) of participants reporting insufficient sleep and the common experience of anxiety and negative thinking (42% & 41.5%, respectively) imply a possible underlying mental health burden that interferes with sleep hygiene. The low percentage of caffeine avoidance (6%) also suggests limited practical knowledge about specific sleep hygiene behaviors. The attitude section reveals a cognitive recognition of insomnia's severity, but inadequate understanding of drug-related consequences (dependency, tolerance, addiction) suggests a critical area for targeted health education.

Similar results were reported by Azad et al.[10], who found that although medical students globally were aware of sleep hygiene concepts, poor sleep quality was common due to workload and screen use. A study in Dhaka by Nahar et al.[14] found that 61.3% of students had disturbed sleep due to study pressure and smartphone overuse, aligning closely with our findings. Alfonsi et al. emphasized that later sleep onset times and screen exposure contributed significantly to poor academic outcomes and daytime fatigue among students, which corroborates the practices reported in our sample. International studies also echo the same concern.[11] In a US-based study, Hershner & Chervin[9] reported that students, despite understanding sleep hygiene principles, engaged in counterproductive behaviors like social media browsing and late-night caffeine use.

This study highlights the urgent need for targeted interventions within the medical curriculum and student welfare systems. Workshops on behavioral sleep hygiene, psycho-education regarding digital detox, and promoting mindfulness practices may be beneficial. Institutions should consider routine screening for sleep problems during health check-ups and introduce awareness programs on the dangers of self-medication for sleep disorders.

The observed discrepancy between knowledge and behavior suggests that mere awareness campaigns may be insufficient. A behavior changes communication (BCC) model involving role-play, self-monitoring, and peer-led discussions could yield better outcomes. Medical students, as future health educators, must first internalize and practice healthy sleep behaviors themselves to effectively guide patients in the future.

The study had certain limitations. First, the use of convenience sampling restricts the generalizability of the findings. Second, self-reported data may be prone to response bias or social desirability bias. Third, the absence of objective sleep assessments (e.g., actigraphy or sleep diaries) limits the ability to quantify sleep quality accurately. Additionally, the cross-sectional design precludes causal inference. Lastly, the study was confined to a single institution, and findings may not reflect the broader student population in Bangladesh.

Conclusion

This study reveals that while medical students in Jashore are generally knowledgeable about sleep hygiene, their actual practices often fail to align with this awareness. Digital device usage before bedtime, poor sleep routines, and a lack of understanding about the pharmacological risks of sleep aids suggest that knowledge alone does not ensure healthy behavior.

The findings underscore the necessity of incorporating behavioral and cognitive strategies into medical education to improve sleep hygiene. Institutional support through workshops, peer counseling, and awareness programs can bridge the gap between knowledge and practice. Given the future role of medical students as health educators, fostering good sleep habits during their training is imperative for both personal well-being and public health impact.

Further research across multiple institutions, using mixed methods and objective sleep assessments, is recommended to validate these findings and guide policy and curriculum development.

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