

Factors Influencing Good Sleep Hygiene Behavior Among Students in College of Medical Sciences in South- South, Nigeria

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Abstract

Sleep hygiene is essential for maintaining both health and academic performance, particularly for medical sciences students who often face unique stressors. Poor sleep hygiene has become a global public health concern, increasing the demand for effective and accessible sleep promotion strategies. This study assessed factors influencing good sleep hygiene behavior among students in college of medical sciences, Rivers State University. A descriptive cross-sectional design; multi-stage sampling was used to determine sample size of 273, (200 to 400) level students. Self-structured e-questionnaire was used to collect data; reliability of the instrument was established through test-retest method. Pearson Correlation Coefficient was used to determine the reliability coefficient of 0.85, same was adjudged adequate for the instrument. Data analysis was done using Statistical Package for Social Sciences (SPSS) version 23 and results presented as percentage, frequency distributions and chart. The findings from the study revealed that several barriers to effective sleep hygiene exist, including use of electronic devices (92%) within an hour of bedtime, unaware of the negative impact of this behavior on sleep quality, social activities (67.1%), environmental factors (61.2%), academic workload (59.2%) among other factors. Study concluded that poor knowledge, cultural, behavioural and environmental factors influences good sleep hygiene behaviours among the study population. Recommendations included that targeted educational interventions, such as workshops, seminars and even including it in their curriculum should be adopted and used to significantly improve sleep hygiene knowledge and practices among medical students.

Keywords: college students; factors; influence; sleep hygiene.

Introduction

Chronic sleep disturbances have become a public health concern linked to serious medical conditions, such as cancer, obesity, stroke, dementia, hypertension, metabolic disorders, and cardiovascular diseases (Bani et al., 2023). Medical students are population characterized by demanding academic schedules, intensive clinical responsibilities, and significant psychological stress. Medical education is recognized for its rigorous demands, often leading to irregular sleep patterns, chronic sleep deprivation, and poor sleep quality among medical students (Almojali et al., 2017). Sleep is an essential physiological process, vital for maintaining somatic and intellectual health and safety. It plays a critical role in

physical, mental, and emotional development (Ranasinghe et al., 2018; Gautam et al., 2021). Sleep health aligns with broader healthcare agenda, such as empowering individuals and communities, enhancing population health, and reducing healthcare costs (Chaput, 2016). A significant determinant of a healthy sleep period is a good sleep hygiene, which includes a sequence of behaviors essential for a restful night's sleep and full alertness during the daytime (Murugesan et al., 2018).

Good sleep quality significantly impacts the quality of life across all age groups and is essential for over-all health, (Panel et al., 2015). It is characterized by several key qualities that contribute to overall well-being. Having the understanding

of these qualities can help individuals improve their sleep patterns and enjoy the benefits of restorative rest. The health of populations is increasingly characterized by positive attributes such as wellness, performance, and adaptability rather than merely the absence of disease. Throughout different life stages, individuals are subjected to alterations in their sleeping patterns and habits, behaviours of sleep hygiene can influence sleep quality, with specific practices either enhancing or detracting from it (Hinojosa, 2021). Adults are expected to sleep 7–9 hours per night to prevent the long-term health consequences of poor sleep on their quality of life (National Sleep Foundation, 2017). During childhood and adolescence, sleep undergoes significant changes, including modifications in the amount, distribution, and characteristics of sleep architecture parameters (Garbarino, 2020). These changes often lead to sleep disruptions, numerous surveys have reported a high prevalence of sleep problems among young populations, such as night awakenings, nightmares, nocturnal enuresis, sleep onset delays, and sleep restrictions (Li et al., 2014). Adequate sleep duration ensures the body has enough time to go through the necessary sleep cycles, including deep and Rapid Eye Movement (REM) sleep, consistency in sleep patterns is another important quality, going to bed and waking up at the same time every day helps regulate the body's internal clock, or circadian rhythm. This consistency promotes better sleep quality and makes it easier to fall asleep and wake up naturally, uninterrupted sleep is essential for good sleep quality.

Sleep hygiene refers to practices promoting healthy and restful sleep, encompassing behaviors, habits, and conditions that contribute to quality sleep and reduce the likelihood of sleep disturbances (Wijaya & Asih, 2018; Voinescu & Szentagotai-Tatar, 2016). It is the set of behavioural and environmental practices conducive for high quality sleep, integral for physical and mental well-being and ensures optimal daytime alertness. Good sleep hygiene behaviours include avoiding daytime naps, not consuming stimulants late in the day, using the bed solely for sleep, increasing exposure to natural light, and creating a quiet and relaxing sleep environment (Bruce et al., 2017). Sleep duration is very crucial, the National Sleep Foundation recommends that adults aim for 7-9 hours of sleep per night to maintain optimal health (National Sleep Foundation, 2017).

Poor sleep hygiene documented negative impacts on cognitive performance, mood regulation, memory consolidation and over-all health (Short et al., 2020). This is of particular concern for medical students, as these consequences can affect not only academic performance but also clinical decision-making and professional growth. Various factors has been implicated in high prevalence of poor sleep hygiene among the young population which college students also belong to. Prominent among these factors include: overuse of technology, particularly exposure to blue light from electronic devices and consuming stressful media content, (Galland et al., 2017; Bathory & Tomopoulos, 2017). Poor knowledge and principles of good sleep hygiene as reported by Shafique et al., (2020), that numerous studies have revealed that medical students often lack adequate knowledge

about the principles and benefits of good sleep hygiene and this knowledge gap has contributed to the prevalence of poor sleep hygiene behaviors. In addition, school environment and academic workload has been implicated, Musa et al. (2019), reported of external pressures such as clinical duties and academic demands while Felix et al. (2017) in Brazil observed low awareness of sleep hygiene practices.

College students, particularly those in demanding fields like Health Sciences, are at increased risk for poor sleep quality due to the transition to new academic and social environments (Giri et al., 2013). Impacts of poor sleep hygiene practices cannot be overemphasized because sleep deprivation negatively affects cognitive functioning, impairing learning and memory consolidation, for medical students, these consequences are particularly concerning, as they can affect academic performance, clinical decision-making, and overall professional development. Good sleep hygiene is of essence to promote cognitive performance, mood, and general health. Hence, understanding factors that influence good sleep hygiene is crucial so as to help maintain continuous sleep throughout the night and as well enhance overall well-being and academic success. Therefore, this study seeks to determine factors that influence good sleep hygiene among medical students at Rivers State University.

Materials and Methods

The various methods and materials used for the study are explained under the following headings:

Research Design

This study adopts a descriptive cross-sectional design, which analyzes data from a sample population at a single point in time. This framework is used to investigate the factors influencing good sleep hygiene among students in college of medical sciences Rivers State University.

Area of the Study

The study was carried out at college of medical sciences Rivers State University, Rivers State University (RIVSU or RSU), formerly known as Rivers State University of Science and Technology (UST or RSUST), is a government-owned university located in Diobu (Mile III) area of Port Harcourt, Rivers State, Southern Nigeria. The university has different faculties including the faculty of basic medical science where this study will be carried out, The Faculty is made up of various department which includes Nursing, Anatomy, Physiology, Physiotherapy, Public Health and Radiography.

Population of the Study

The target population for the study comprised of 1223 college students in 200-400 levels of the Department of Nursing Sciences, Anatomy, Physiology and Public Health during the 2023/2024 academic session. This population is chosen due to their unique academic pressures and the potential impact on sleep hygiene. The distribution is shown in the table 1. below

Department / level	400 Level	300 Level	200 Level	
Anatomy	47	87	130	
Nursing	75	102	115	
Physiology	42	79	110	
Public Health	-	-	74	
Total				1223

Sample Size

The sample size was determined using standard statistical formulas of Taro Yamane to ensure representativeness and reliability of results.

$$n = N/1+N(e)^2$$

Where:

- n' = sample size
- N = population size
- E = margin of error (expressed as a decimal)

Given:

$$N=1223$$

$$e=0.05$$

$$n = 861 / 1 + 861 (0.05)^2$$

$$n = 861 / 1 + 2.1535$$

$$n = 1223 / 3.1535$$

$$n = 273.12$$

Sampling Technique

The participants for this study were selected using a stratified proportionate random sampling technique to ensure representation across different years of study (200 to 400 level) from the different department in the study. Students must be currently enrolled as undergraduate in the college of medical science and in any of the departments mentioned.

Inclusion Criteria: Students must be in Anatomy, Nursing, Physiology, Public health and must be in 200 to 400 level.

Exclusion Criteria: It excluded Nursing 500 level and, Anatomy, Physiology, Public Health, Radiography, and Physiotherapy 100 level students.

Instruments for Data Collection

A self-structured e-questionnaire was used to collect the desired information from the students. The questionnaire comprises of two sections namely; A and B. While section A seeks to address the social demographic statistics of respondents, section B seeks to determine the factors influencing good sleep hygiene among respondents

Procedure for Data Collection

Data was collected after obtaining ethical approval and institutional permission. The respondents were informed about the benefits of the study and that participation was voluntary. Informed consent was obtained from the participants. The questionnaire was distributed electronically to the respondent. To ensure the confidentiality of respondents, the questionnaire was designed to be anonymous. A total of 273 e-questionnaires were distributed, however, 253 students partook in the study before it ended, therefore the response rate was 97.7%.

Method of Data Analysis

Data analysis was done using Statistical Package for Social Sciences (SPSS) version 23 and results presented as percentage, frequency distributions and chart.

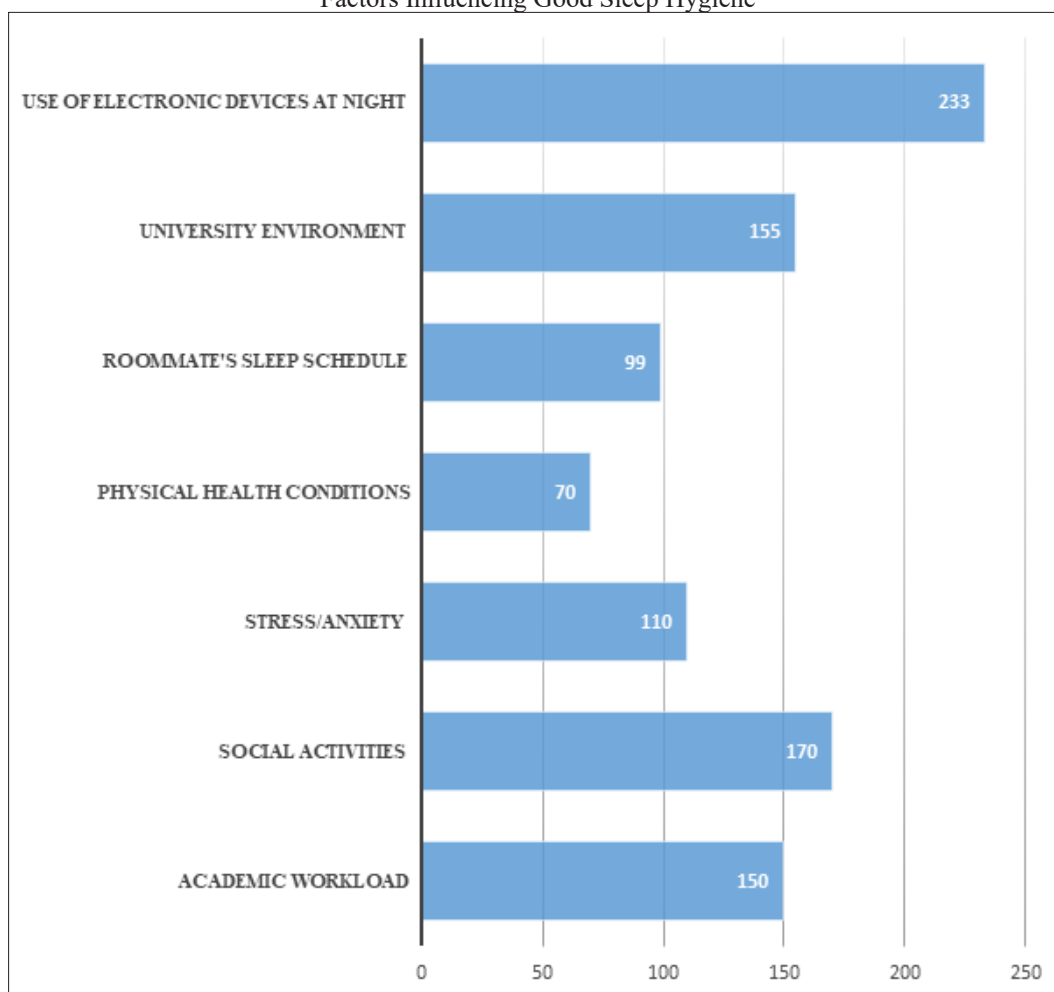
Results

Table 2: Demographic Characteristics of respondent

	FREQUENCY	PERCENTAGE (%)
AGE		
18 -20	103	40.7
21-23	65	25.6
24-26	38	15
26 and above	47	18.5
	253	
GENDER		
Male	99	39.1
Female	154	60.8
	253	
LEVEL		
200	107	42.2
300	78	30.8
400	68	26.8
	253	
ACCOMODATION		
On campus	123	54.9
Off Campus	57	25.4
Family/Relatives House	44	19.6
	253	

The data reveals that the largest age group among respondents is between 18 and 20 years, representing 40.7% of the sample. This highlights a predominantly youthful population, likely in the early stages of their university education. As age increases, representation decreases, with only 18.5% of respondents being 26 years or older. A significant gender disparity is evident, with 60.8% of respondents identifying as female, compared to 39.1% male. This suggests a notable female majority in the population surveyed, which may reflect broader trends in the academic programs or disciplines under study. In terms of academic level, 42.2% of the respondents are in their second year (200 level), followed by 30.8% in their third year (300 level), and 26.8% in their fourth year (400 level). The higher representation of lower-level students indicates that younger students may have been more available or inclined to participate in the study. Regarding accommodation, a majority of respondents (54.9%) live on campus, which could indicate either a preference for the conveniences of campus life or limited access to off-campus housing. Additionally, 25.4% of respondents reside off-campus, while 19.6% live with family or relatives.

Factors Influencing Good Sleep Hygiene



The chart above, highlights key factors affecting sleep hygiene among respondents. The most prominent issue is the use of electronic devices at night, cited by 233 (92.0%) respondents, indicating that screen time disrupts sleep patterns. The university environment also emerged as a significant contributor, with 155 (61.2%) respondents pointing to noise levels, social distractions, or study obligations within the university setting. Social activities were another major factor, noted by 170 (67.1%) respondents, indicating that managing social commitments often leads to compromised sleep schedules. Academic workload, cited by 150 (59.2%) respondents, suggests that heavy study hours and academic pressures are common barriers to good sleep hygiene. Additionally, stress and anxiety were recognized by 110 (43.4%) respondents as psychological factors influencing their sleep, reinforcing the well-known connection between mental health and sleep quality. Roommates' sleep schedules were identified by 99 (39.1%) respondents as a disruptor, particularly in shared accommodations. Different routines or habits in shared living spaces can create sleep challenges for students. Lastly, physical health conditions, reported by 70 (27.6) respondents, also played a role in influencing sleep hygiene, indicating that ailments or physical discomfort can disrupt sleep routines.

Discussion

Sleep hygiene encompasses a range of behavioral and environmental practices designed to enhance sleep quality and ensure optimal daytime alertness. Despite growing recognition of the importance of sleep, many students experience sleep disturbances and poor sleep quality. Findings from study the highlights key factors affecting good sleep hygiene among respondents. Firstly, the use of electronic devices at night as a significant barrier to good sleep hygiene, with many respondents 233 (92%) recognizing this as a major issue. This finding is consistent with research by Exelmans and Van den Bulck (2016), which highlighted the negative effects of media use before bedtime on sleep duration and quality. Secondly, social distractions 170 (67.1%) and environmental stressors 155 (61.2%) were noted by a substantial number of respondents, reinforcing the influence of external factors on sleep patterns. This observation aligns with the work of Lund et al. (2010), who linked the university environment to irregular sleep schedules and poor sleep quality. Academic workload 150 (59.2%) and stress 110 (43.4%) are some of the contributory factors impacting sleep hygiene. This align with the studies of Musa, et al. (2019) and Hershner & Chervin (2014), which reported that clinical duties and heavy academic pressures contribute to sleep deprivation and adversely affect academic performance among college students. Interestingly, shared living arrangements 99 (39.9%) were equally identified

as a disruptor of sleep hygiene, as few respondents pointed to the difficulties of maintaining consistent sleep schedules in communal settings. This observation echoes findings by Gellis et al. (2014), which indicated that shared accommodations often lead to sleep disturbances due to varying routines among roommates. Furthermore, some respondents reported that physical health conditions 70 (27.6%) impacted their sleep hygiene. This finding is in tandem with the report of Jay and Cotliar (2025), which noted that physical and mental illness can cause an individual to fall short on sleep, also, medications and supplements taken for health issues can negatively impact sleep duration and quality. Overall, the findings reveal that technological habits, social activity, environmental factors, academic pressures, psychological stress, and physical health collectively impact sleep hygiene. Addressing these influences through targeted interventions—such as limiting screen time, managing academic workloads, and creating conducive sleeping environments—could foster healthier sleep practices among students.

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Conclusion

Findings of this study highlighted the complex interplay between good sleep hygiene practices and various factors influencing it. Factors such as excessive screen time before bed, irregular sleep schedules, and poor dietary habits before sleep emerged as common barriers to achieving optimal sleep quality. Moreover, the study observed the influence of academic stress and shared living environments on sleep patterns, underscoring the need for comprehensive strategies to address these challenges. Educational interventions that focus on increasing awareness of the negative impacts of electronic device use, promoting stress management techniques, and encouraging healthy lifestyle habits could significantly enhance sleep hygiene among students. In light of these findings, it is imperative for educational institutions to implement targeted programs that foster healthier sleep practices. By prioritizing sleep hygiene education and creating supportive environments, schools can play a crucial role in improving students' overall well-being, academic performance, and quality of life.

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