



P-ISSN: 2664-3685
E-ISSN: 2664-3693
www.paediatricjournal.com
IJPG 2025; 8(2): 09-14
Received: 08-06-2025
Accepted: 11-07-2025

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A Descriptive Study to Assess the Knowledge of Sleep Hygiene Among First-Year B.Sc. Nursing Students in a Selected Nursing College in Eluru, A.P., with a View to Developing an Information Pamphlet

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DOI: <https://doi.org/10.33545/26643685.2025.v8.i2a.263>

Abstract

Objectives: This study was conducted to assess the knowledge regarding sleep hygiene among first-year B.Sc. Nursing students at a selected nursing college in Eluru, Andhra Pradesh. The objectives included evaluating students' existing knowledge, identifying any association between knowledge and demographic variables, and developing an informative pamphlet to improve awareness.

Methods: A descriptive survey design was adopted using a non-experimental approach. The study was conducted among 60 first-year B.Sc. Nursing students selected through purposive sampling. A structured questionnaire with demographic details and knowledge-based questions on sleep hygiene was used as the data collection tool. Descriptive statistics (mean, percentage, standard deviation) and inferential statistics (chi-square test) were used to analyze the data.

Results: The findings revealed that 87% of the students had inadequate knowledge, 13% had moderately adequate knowledge, and none had adequate knowledge regarding sleep hygiene. The mean knowledge score was 5.17 with a standard deviation of 1.95. There was no significant association found between knowledge scores and demographic variables such as gender, religion, bedtime, wake-up time, or type of family ($p > 0.05$).

Conclusion: The study concluded that first-year nursing students had poor knowledge regarding sleep hygiene. Considering the importance of sleep in maintaining physical and mental health, especially in high-pressure academic environments like nursing, there is a pressing need to educate students on proper sleep practices. An information pamphlet was developed and distributed to enhance student awareness and encourage healthy sleep behaviors. The study recommends integrating sleep hygiene education into the nursing curriculum to support students' well-being and academic performance.

Keywords: Sleep hygiene, Nursing students, Knowledge assessment, Health education, Descriptive study, Sleep quality, Awareness, Pamphlet, Sleep habits, Nursing education

Introduction

Sleep is a fundamental biological process essential for the maintenance of physical, emotional, and mental well-being. It is closely tied to vital functions such as cognitive performance, memory consolidation, mood regulation, immune function, and metabolic balance. Despite its critical role, healthy sleep patterns are often overlooked, especially among young adults and students, who are increasingly exposed to academic stress, irregular daily schedules, and excessive screen time. These lifestyle patterns frequently result in poor sleep hygiene, which is defined as a set of behavioral and environmental practices conducive to quality sleep and optimal daytime alertness.

Poor sleep hygiene contributes to a range of sleep-related disorders, including insomnia, delayed sleep phase disorder, and excessive daytime sleepiness. Such disturbances can significantly impair attention, learning, decision-making abilities, and academic performance. Multiple studies have established that inadequate sleep not only affects individual well-being but is also linked to chronic health issues such as obesity, diabetes, depression, and cardiovascular disease. Alarming, poor sleep is also associated with diminished emotional intelligence and compromised moral decision-making, which are crucial for healthcare professionals.

Nursing students are particularly vulnerable to the negative effects of poor sleep hygiene due to demanding schedules, stressful academic and clinical workloads, night shifts, and

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extended study hours. These challenges often lead to irregular sleep patterns, reduced sleep duration, and poor sleep quality. Given the crucial role nurses play in patient care, it is important that they are well-informed about the impact of sleep and adopt healthy sleep practices themselves.

Promoting sleep hygiene through structured education can be a preventive approach to enhance both academic performance and personal health. Evidence suggests that awareness campaigns and educational materials, such as pamphlets and workshops, can significantly improve sleep-related behaviors among students. However, despite the rising concern, limited attention has been given to systematically assessing knowledge about sleep hygiene among nursing students in many educational institutions.

The present study was undertaken to assess the knowledge regarding sleep hygiene among first-year B.Sc. Nursing students in a selected nursing college in Eluru, Andhra Pradesh. The primary objectives of this study were to evaluate students' knowledge levels, examine the association between knowledge and selected demographic variables, and develop an informative pamphlet to enhance awareness.

By identifying knowledge gaps and promoting awareness through tailored educational materials, the study seeks to empower nursing students to adopt better sleep practices. This not only supports their own physical and mental well-being but also prepares them to serve as role models in educating patients about healthy sleep habits in their future professional practice. With nursing students being the future caregivers, instilling foundational knowledge on sleep hygiene becomes an integral part of nursing education and overall healthcare delivery.

Need for the study

In recent years, sleep hygiene education has gained significant attention as a key strategy for promoting health and preventing various health issues. Nursing students, who are often exposed to demanding academic and clinical environments, are particularly vulnerable to poor sleep patterns. These stressors can negatively impact their sleep quality, which, in turn, can affect their overall well-being and academic performance. Studies have highlighted the prevalence of poor sleep quality among healthcare students, with research showing that inadequate sleep can lead to irritability, burnout, decreased concentration, and even physical illness.

The National Sleep Foundation recommends that adults sleep for at least 7-9 hours per night to maintain optimal health and function. However, nursing students often face significant challenges that can disrupt their sleep patterns, including academic pressure, clinical responsibilities, and the adjustment to new living environments.

Research by the American Academy of Sleep Medicine revealed that approximately 60% of college students report experiencing poor sleep quality. Many of these students admitted to irregular sleep patterns and insufficient sleep, which negatively impacted their academic and daily functioning. In India, a study found that more than 70% of nursing students demonstrated inadequate knowledge regarding sleep hygiene, coupled with poor sleep practices. This is particularly concerning, given that sleep deprivation in healthcare students can have far-reaching consequences, including impaired decision-making, communication

difficulties, and a decrease in professional conduct. The ability to function effectively and efficiently in a healthcare setting is directly influenced by the quality of sleep a student receives.

Given the critical nature of these issues, it is crucial to assess the knowledge of first-year B.Sc. Nursing students regarding sleep hygiene and to provide them with essential educational materials. Introducing an information pamphlet that focuses on sleep hygiene practices can serve as an effective tool for raising awareness and encouraging behavior change. Educating nursing students about proper sleep hygiene not only enhances their own health but also equips them to provide better care for their future patients. Thus, this study aims to evaluate and enhance the sleep hygiene knowledge of nursing students, contributing to their personal well-being and professional competence.

Problem Statement

"A descriptive study to assess the knowledge regarding sleep hygiene among first-year B.Sc. Nursing students in a selected nursing college in Eluru, A.P., with a view to developing an information pamphlet."

Objectives

1. To assess the knowledge of B.Sc. Nursing students regarding sleep hygiene.
2. To associate the knowledge scores with demographic variables.
3. To develop and distribute an information pamphlet on sleep hygiene.

Operational Definitions

- **Knowledge:** In this study, knowledge refers to the correct responses given by B.Sc. Nursing students to the questionnaire regarding sleep hygiene.
- **B.Sc. Nursing Students:** In this study, B.Sc. Nursing students refer to the students who are enrolled in the first year of the B.Sc. Nursing program at ASRAM College of Nursing.
- **Sleep Hygiene:** Sleep hygiene is defined as a set of behavioral and environmental recommendations intended to promote healthy sleep.
- **Selected College of Nursing:** The selected college for this study is ASRAM College of Nursing in Eluru.
- **Information Pamphlet:** An information pamphlet refers to a single sheet of paper printed on both sides and folded in half, containing information about sleep hygiene.

Variables

- **Research Variables:** The level of knowledge regarding sleep hygiene among B.Sc. Nursing students.
- **Demographic Variables:** The demographic variables include gender, education level of the father and mother, sleeping habits, and type of family.

Hypothesis

H1: There is a significant association between knowledge and demographic variables.

Assumptions

- The students may have minimal knowledge regarding sleep hygiene.

- An information pamphlet can enhance the knowledge regarding sleep hygiene.
- Increasing the knowledge of students regarding sleep hygiene will have a positive impact on preventing sleep-related problems.

Delimitations

- The study is limited to first-year B.Sc. Nursing students studying at Asram College of Nursing.
- The study is limited to a sample of 60 students.
- The findings of the study cannot be generalized.

Review of literature

Mr. Sandip Saha in 2024 a descriptive study conducted by in Bangalore, the aim was to assess the sleep habits, knowledge of sleep hygiene, and their effects on the sleep quality of nursing students. A total of 60 first-year nursing students were selected using purposive sampling. The research utilized a self-administered knowledge questionnaire, the Sleep Hygiene Index (SHI), and a demographic questionnaire for data collection. The findings revealed that 55% of the students were aged between 18 and 20, 70% lived in rental housing, and 93.33% were living away from their families. A significant percentage of students reported sleep disturbances, with 22.4% experiencing nightmares, 22.4% having sleep apnea, 10.5% suffering from hypersomnia, and 27.4% affected by insomnia. Poor sleep hygiene, including inadequate sleep duration and irregular sleep schedules, was common. The study concluded that inadequate sleep quality among nursing students was largely due to academic pressure, environmental changes, and the absence of a reliable support network. The research suggests that addressing these issues could improve students' overall well-being and academic performance, emphasizing the need for targeted interventions to enhance sleep hygiene practices within this population.

Chaowang, Sridhar Rama Krishnan et al., 2019: A study was conducted to examine the electroencephalogram (EEG) spectral power and investigate abnormalities in regional brain activity during sleep in individuals with post-traumatic stress disorder (PTSD). Among 78 participants, the results showed that individuals with PTSD exhibited reduced delta power in the centroparietal region during non-rapid eye movement (NREM) sleep.

Tienno, Allyson M. Kats, Lisa Langsetmo et al., 2019: A study was conducted to determine the association between sleep-disordered breathing and subsequent healthcare utilization. Among 1,316 men, the results indicated that 529 men had at least one hospitalization during a three-year period. Compared to those without sleep apnea, men with moderate to severe sleep apnea had a higher odds ratio for all-cause hospitalization.

Apurva Mishra, Ramesh Kumar Pandey et al., 2017: A cross-sectional study was conducted to determine the pre-sleep habits, sleep duration, and sleep patterns among 1,050 schoolchildren attending government schools in Lucknow, and to investigate the association between their sleep schedules and habits. The study was completed with the input of the children's parents. The results showed that wake-up times were significantly delayed on weekends across all age groups, and total sleep time increased significantly during weekends. Practices such as co-sleeping and sharing a bed with parents were found to significantly

improve the duration and quality of sleep. The study concluded that children's sleep duration was lower than the recommended sleep duration.

Jinwen Zhang, Zhiwei Xu et al., 2017: A cross-sectional study was conducted to examine the overall associations of sleep behaviors, including sleep habits, duration, and patterns, among 4,823 adolescents aged 11 to 20 years in Shanghai, China. A questionnaire was administered to assess sleep disturbances and sleep behaviors. The results showed that sleep variables were associated with adolescents' later bedtimes during weekdays and the maintenance of sleep difficulties, including disorders of arousal.

The conceptual framework

The conceptual framework of this study is based on the General System Theory, introduced by Ludwig Von Bertalanffy in 1968. It consists of four components: input, throughput, output, and feedback. The study aims to assess the knowledge of first-year B.Sc Nursing students regarding sleep hygiene. Input includes factors such as gender, religion, bedtime, wake-up time, and sleep-related issues. Throughput involves developing and administering a validated tool to assess students' knowledge. Output reflects students' knowledge levels: adequate, moderate, or inadequate. Feedback refers to revisiting input and throughput if knowledge is inadequate, although this was not included in the current study.

Research Methodology

- **Research Approach:** The study adopted a "Non-experimental survey" approach, suitable for educational research and its practical applicability in real-life situations.
- **Research Design:** A "Descriptive design" was used to achieve the study objectives, including a pre-test administered through a questionnaire on the knowledge of sleep hygiene.
- **Variables:** The primary research variable was knowledge regarding the importance of sleep hygiene. Demographic variables included religion, type of family, awareness of sleep hygiene., source of information, and knowledge about early sleep hygiene.
- **Setting:** The study was conducted at ASRAM School of Nursing, Eluru.
- **Target Population:** The target population consisted of 3rd-year GNM nursing students at ASRAM College of Nursing, Eluru.
- **Sampling Technique:** Convenient sampling was used to select participants based on availability and inclusion criteria.
- **Sample:** The sample included 60 3rd-year GNM nursing students who met the inclusion criteria.
- **Sample Size:** The sample size consisted of 60 students who met the inclusion criteria.

Criteria for Sample Selection:

- **Inclusive Criteria:** Students willing to participate, with low knowledge on sleep hygiene., fluent in Telugu/English, and cooperative.
- **Exclusive Criteria:** Students unwilling to participate.

Tool Development: The data collection tool was developed

based on literature review, expert consultations, and statistical planning. It consisted of two sections:

- **Section A:** Demographic data (religion, family type, awareness of sleep hygiene., source of information, knowledge about early sleep hygiene.).
- **Section B:** A questionnaire assessing knowledge regarding sleep hygiene.

Score Interpretation

- Inadequate knowledge: 0-35% (0-7 marks)
- Moderately adequate knowledge: 36-70% (8-14 marks)
- Adequate knowledge: 71-100% (15-20 marks)
- **Preparation of Information Pamphlet:** The final pamphlet, developed after expert suggestions, included information on sleep hygiene., early sleep hygiene., sleep hygiene. age, aims, principles, food, and preparation stages.
- **Content Validity:** The tool was reviewed by the guide and modified based on feedback to ensure validity.
- **Data Collection Procedure:** Formal permission was obtained from the principal of ASRAM College of Nursing. The investigator established rapport, explained the study's purpose, and obtained consent while maintaining confidentiality. Data collection was completed in one day using a structured questionnaire.

Data Analysis Plan

- **Descriptive Statistics:** Percentage, mean, median, mode, and standard deviation were calculated to assess knowledge of sleep hygiene.
- **Inferential Statistics:** Chi-square test was used to determine the association between demographic variables and knowledge regarding sleep hygiene.

Data Analysis and Interpretation

This chapter presents the analysis and interpretation of data collected from 60 students in a selected school at Eluru to assess knowledge regarding the importance of sleep hygiene. Descriptive and inferential statistics were applied for the data analysis. The data has been organized and presented based on the study's objectives as follows:

Objectives

1. To assess knowledge regarding the importance of sleep hygiene.
2. To associate knowledge scores with demographic variables.
3. To develop an information pamphlet.

Organization and presentation of data: The raw data was collected, entered into a master sheet, and organized as follows:

- Demographic data of students
- Level of mean, standard deviation of knowledge scores
- Mean, median, mode, and standard deviation of

knowledge scores

- Association of knowledge scores with demographic variables

TABLE 2: FREQUENCY AND PERCENTAGE DISTRIBUTION OF SAMPLE ACCORDING TO DEMOGRAPHIC VARIABLES (n=60)

1. With regard to student's 56(93%) members were females 4(7%) are belongs to males With regard to student's religion, 52(86%) members were Hindu, 4(7%) members were Christians, 4(7%) were Muslims and 0(0%) members were other religions.
2. With regard to type of family, 34(56%) members were living in Nuclear family, 26(44%) members were living in joint family and 0(0%) members were live in extended family.
3. With regard to the student's bed time, 8 students (13%) were going to bed before 9pm, 12 students (20%) were going to bed between 9:01pm – 10:00pm, 22 students (37%) were going to bed between 10:01pm – 11:00pm, and 18 students (60%) were going to bed after 11pm.
4. With regard to idea regarding sleep hygiene. 56(93%) members were having idea and 4(7%) are not having idea regarding sleep hygiene.
5. With regard to source of information regarding sleep hygiene. 40(66%) members said books and magazines, 12(20%) members said family members and 18(14%) members said health care workers.
6. With regard to previous knowledge regarding early sleep hygiene. 44(73%) members said yes and 16(27%) members said no.

FIGURES 3-9: Frequency and percentage distribution according to gender, religion, bed time, wake-up time, time taken to fall asleep, and trouble in getting sleep.

Table 3: Frequency and percentage distribution of sample according to level of knowledge (n=60)

Category	Score	Frequency	Percentage
Inadequate Knowledge	0-6	52	87%
Moderately Adequate Knowledge	7-14	08	13%
Adequate Knowledge	15-20	00	0%

Data Interpretation

87% of students had inadequate knowledge, 13% had moderately adequate knowledge, and none had adequate knowledge regarding sleep hygiene.

Table 4: Mean and standard deviation of knowledge scores of students regarding sleep hygiene

Description	Knowledge
Mean	5.17
Standard Deviation	1.95

Table 5: Association of knowledge with demographic variables (n=60)

	Demographic Variable	Knowledge			chi square χ^2			Inference
		Inadequate	Moderately adequate	Adequate	cv	tv	df	
1	Gender a) Male	16	04	00				

	b) Female	34	06	00	0.04	5.99	2	NS
2	Religion							
	a) Christians	20	02	00				
	b) Hindu	32	04	00	1.61	12.59	6	NS
	c) Muslim	02	00	00				
	d) Others	00	00	00				
3	What time do you usually go to bed?							
	a) Before 9 pm	06	02	00				
	b) 9:01 pm – 10 pm	12	00	00	2.87	12.59	6	NS
	c) 10:01 pm – 11 pm	18	04	00				
	d) After 11 pm	16	02	00				
4	What time do you usually get up on week days?							
	a) 3 am – 4 am	00	02	00				
	b) 4:01 am – 5 am	04	00	00	10.37	12.59	6	NS
	c) 5:01 am – 6 am	24	04	00				
	d) After 6 am	26	00	00				
5	How long does it take you, to fall asleep?							
	a) 15 – 60 Min	30	08	00				
	b) 31 – 45 Min	06	00	00	6.15	12.59	6	NS
	c) 46 – 50 Min	10	00	00				
	d) Above 60 Min	06	00	00				
6	Trouble in getting sleep							
	a) Not at all	22	02	00				
	b) A little	26	02	00	4.60	9.49	4	NS
	c) Very much	04	04	00				
7	Type of family							
	a) Nuclear Family	32	06	00				
	b) Joint family	18	02	00	0.88	9.49	4	NS
	c) Extended Family	02	00	00				

Chi-square tests were performed to assess associations between demographic variables and knowledge. No significant associations were found, thus H1 (there is a significant association between knowledge and demographic variables) was not accepted.

Summary

Sleep hygiene involves practices that ensure good sleep quality and daytime alertness, crucial for physical and mental well-being. The study aimed to:

1. Assess the knowledge of B.Sc nursing students regarding sleep hygiene.
2. Associate knowledge scores with demographic variables.
3. Develop and distribute an information pamphlet.

The hypothesis tested was:

H1: There is no significant association between knowledge and demographic variables.

The study followed a structured methodology with a questionnaire, and data were analyzed using descriptive statistics (mean, standard deviation, percentage) and inferential statistics (chi-square).

Major Findings

- The first objective revealed that 52 (87%) students had inadequate knowledge, 8 (13%) had moderate knowledge, and no student had adequate knowledge, indicating a low level of awareness.
- The mean knowledge score was 5.17, with a standard deviation of 1.95.
- The second objective showed no significant association

between knowledge scores and demographic variables.

- The third objective was achieved by developing an information pamphlet based on expert suggestions.

Conclusion

The study highlights that nursing students have inadequate knowledge regarding the importance of sleep hygiene. Developing and distributing an information pamphlet can significantly raise awareness among students.

Study Implications

Nursing Education

- The questionnaire can serve as a baseline tool to assess students' knowledge about sleep hygiene.
- The study's findings can guide the planning of future research, seminars, and health education programs on sleep hygiene.

Nursing Administration

- Health education programs should be implemented to enhance students' knowledge about sleep hygiene.
- Students should be encouraged to participate in health education activities to improve their understanding.

Nursing Research

- Future research should focus on the knowledge of sleep hygiene among nursing students.
- Experimental studies can explore the effectiveness of different interventions on improving sleep hygiene knowledge.

Recommendations

- The study could be expanded to a larger group in similar settings.
- A longitudinal study should evaluate knowledge retention over time (e.g., one month, six months, and one year).
- Future studies could introduce self-instructional materials on sleep hygiene for students.
- Comparative studies in rural and urban settings could provide more insights into sleep hygiene knowledge.
- Experimental studies with control and experimental groups can be conducted to assess the effectiveness of interventions.
- Replicating this study in rural areas could strengthen the findings.

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