International Journal of Innovative Research in Health Science
Published: January 05, 2026
Volume 2, Issue 1, Pages 2-6

Research Article
DOI: https://doi.org/10.63349/ijirhs.202602

A Correlational Study to Assess the Knowledge of Sleep Hygiene Practices and Level of Sleep Quality Among B.Sc. Nursing Students at Selected College

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Abstract:

Introduction: Good sleep leads to restoration, normal reflexes and good interpersonal relationships, but poor sleep leads to fatigue, being on edge, not functioning during the day, slow responses and the need for more stimulants. **Aim of the study:** The study aimed to evaluate the effectiveness of a structured teaching program in improving knowledge regarding suicide prevention among adolescents. **Methodology:** The study adopted a quantitative correlational research design. The sample size was 110 and was selected by systematic sampling with stratification and ensuring proportional representation (80 B.Sc. Nursing students: 20 of each academic year; and 30 GNM students: 10 of each academic year). Students who gave informed consent were included in the study while those who did not consent were excluded. **Results:** The results indicated that the majority of the students were knowledgeable about the practices of sleep hygiene (Mean = 7.3 ± 1.89), 66.36% of the students were knowledgeable and 10% of the students were knowledgeable well. On the issue of sleep quality, the mean PSQI measure was 4.93-2.62, which means that most of the students experienced good or moderately good sleep quality. Moderate negative relationship was observed between the knowledge of sleep hygienic practices and level of sleep quality (r = -0.34328), meaning that the greater the knowledge, the better is the sleep quality. **Conclusion:** The study concludes that enhancing awareness of sleep hygiene practices can positively influence sleep quality among nursing students. Educational interventions focusing on healthy sleep habits are recommended to promote better sleep and overall well-being in this population.

Keywords: Knowledge, Sleep Hygiene, Sleep quality

INTRODUCTION

Health is a state of complete physical, mental, and social well-being and not merely the absence of disease (WHO, 1948). Sleep is a necessary biological process that consists of rapid eye movement (REM) and non-rapid eye movement (NREM) phases that alternate cyclically throughout the night that contribute uniquely to cognitive, emotional, and physiological functioning (Schwab, 2020). Sleep quality is the perception of an individual's satisfaction with their experience of sleeping and includes such attributes as sleep efficiency, sleep latency, sleep duration and wake after sleep onset. It is affected by physiological, psychological, environmental, and social factors (Nelson, 2022).

Good sleep leads to restoration, normal reflexes and good interpersonal relationships, but poor sleep leads to fatigue, being on edge, not functioning during the day, slow responses and the need for more stimulants. Globally, almost 40% of the population suffers from sleep-related problems, which in many cases, due to lifestyle changes, stress and use of technology, the number of people with insomnia, sleep apnea, restless leg syndrome or narcolepsy is increasing. In India, 10-30% of the population lives with sleep disorders; various studies have reported a high prevalence rate in different regions of the country, including Tamil Nadu and Coimbatore.

Sleep quality is especially important in the nursing profession. Nurses complete complex, high-stakes tasks that require constant attention, good judgment, and emotional control. Long working hours, night-shifts, and shift work disturb the circadian rhythms, which often result in chronic sleep deprivation. It's been shown time and again that insufficient rest leads to poor cognition, attention and decision-making, which raises the risk of errors and puts patients' safety at risk. Poor sleep is also linked to stress, burnout and mental health issues for nurses.

Improving the quality of sleep by learning about sleep hygiene, support from the institutions, and sleep interventions at work can help improve the cognitive performance, emotional stability and physical well-being of nurses. Adequate rest helps to recover from the physical strain and prevents the occurrence of long-term health issues. Sleep prioritization in healthcare organizations promotes a culture of healthcare organizations that prioritize the well-being of their staff, resulting in safer practice environments and better patient outcomes. Optimizing sleep quality therefore has both an individual benefit for nurses as well as an institutional benefit to ensure attentive and healthy and effective providers of care in the healthcare system.

Need for the study:

Optimal sleep quality is essential for nursing students, as it directly influences cognitive function, academic performance, and overall well-being. The demanding nature of nursing education, with intensive coursework and clinical responsibilities, often results in heightened stress and disrupted sleep patterns. Inadequate rest impairs memory, learning, and decision-making, thereby affecting both academic outcomes and patient safety. Research consistently demonstrates a high prevalence of poor sleep among healthcare students. Studies report that over half of medical and nursing students experience poor sleep quality, often linked to irregular sleep schedules, academic stress, and limited knowledge of sleep hygiene. Adolescent studies in India further reveal strong associations between stress, medical conditions, and reduced sleep quality, with a majority of students obtaining insufficient sleep due to academic pressure and lifestyle factors. Among nursing students, poor sleep has been associated with fatigue, headaches, musculoskeletal pain, depression, and diminished academic performance. The long-term consequences extend into professional practice. Evidence shows that nurses, particularly those engaged in night shifts, continue to experience poor sleep quality, even after shift changes, underscoring the need for early education on sleep hygiene.

AIM OF THE STUDY

The study aimed to evaluate the effectiveness of a structured teaching program in improving knowledge regarding suicide prevention among adolescents.

METHODOLOGY

The study adopted a quantitative correlational research design to determine the relationship between knowledge of sleep hygiene practices and the sleep quality among nursing students of selected nursing college, Coimbatore. Sleep hygiene practices knowledge was taken as the independent variable and sleep quality using Pittsburgh Sleep Quality Index (PSQI) as the dependent variable. The study population consisted of B.Sc. Nursing and General Nursing and Midwifery (GNM) students and the sample size was 110 and was selected by systematic sampling with stratification and ensuring proportional representation (80 B.Sc. Nursing students: 20 of each academic year; and 30 GNM students: 10 of each academic year). Every fifth student from the attendance register was included in the sample.

Data collections tool:

Data collection was carried out by a structured tool comprised of demographic variables, a multiple-choice questionnaire with 10 items which assesses knowledge of sleep hygiene, scored from 0 to 10 (low (0-3) to excellent (10)) and the PSQI, which is a standardized 21-item tool with a global score range of 0 to 21 (0-5: good sleep quality, 6-10: moderate disturbance, 11-15: poor sleep quality, and 16-21: very poor sleep quality). Students who gave informed consent were included in the study while those who did not consent were excluded.

The tool was validated by reviewing the tool by experts and required changes were made. The pilot testing of the structured questionnaire and PSQI validated the reliability of the scales, thus giving credibility to determine the knowledge about the sleep hygiene habits and the degree of sleep quality. The study was carried out after getting the consent of the Principal and Vice Principal of Sree Abirami College of Nursing. The participants were given the nature and the aim of the study and oral consent was given before the data were collected so that they would participate in the study voluntarily.

Statistical methods:

Data analysis was carried out using descriptive and inferential statistical methods. Descriptive statistics included mean, standard deviation, frequency, and percentage to summarize demographic variables, sleep hygiene knowledge scores, and sleep quality scores. Inferential statistics involved the use of Pearson’s correlation coefficient (r) to determine the relationship between knowledge of sleep hygiene practices and sleep quality among nursing students.

RESULTS

Demographic variables

The demographic analysis revealed that the majority of the B. Sc. Nursing students had ages 20 (31.82%), 19 (22.73%) and 21 (20.91). Most of them were females (88.18%) and the hostel residents (88.18%). A non-vegetarian diet was the favorite of the majority of students (95.45%). Majority of them used mobile phones prior to sleep (86.36%). Over fifty percent of the study population (58.18) were more willing to study at night. Most of them indicated having fulfilled their academic needs within the stipulated time (78.18%).

Knowledge

The distribution of knowledge on sleep hygiene practices revealed that the majority of students (66.36%) had good knowledge, while 10% demonstrated excellent knowledge. About one-fifth of the students (19.09%) possessed moderate knowledge, and only a small proportion (4.55%) had poor knowledge. This indicates that most B.Sc. Nursing students had an adequate level of awareness regarding sleep hygiene practices

Sleep quality

The distribution of the scores of the sleep quality indicated that most students (60.91) had a good sleep quality. The percentage of moderate sleep disturbance was high and amounted to 37.27 with a small percentage (1.82) reporting poor sleep quality. No students were found to have very poor sleeping quality. It means that the majority of B.Sc. Nursing students had a good sleep quality.

Correlation

The results show that there is an inverse relationship between knowledge of sleep hygiene practices and the level of sleep quality ($r = -0.34328$), showing that the relationship is moderate. This indicates that the more one is informed on sleep hygiene practices, the better the sleep quality as shown by the low PSQI scores. The average knowledge score was 7.3 and standard deviation was 1.89 with the average sleep quality score being 4.93 and standard deviation of 2.62. The above findings suggest that better sleep hygiene behavior is linked to better sleep quality among B.Sc. Nursing students.

Table 1: Demographic Status of the B.Sc. Nursing Students (n = 110)

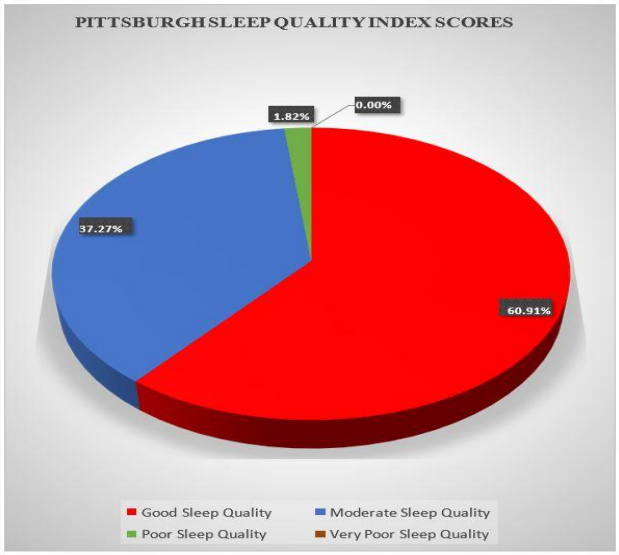
SI No	Demographic Variables	Category	Frequency (f)	Percentage (%)
1	Age	17 years	2	1.82
		18 years	14	12.73
		19 years	25	22.73
		20 years	35	31.82
		21 years	23	20.91
		22 years	5	4.55
		23 years and above	6	5.45
2	Gender	Male	13	11.82
		Female	97	88.18
3	Living Arrangement	Day Scholars	13	11.82
		Hostel	97	88.18
4	Food Preference	Vegetarian	5	4.55
		Non-Vegetarian	105	95.45
5	Mobile Usage Before Sleep	Yes	95	86.36
		No	15	13.64
6	Preferred Study Time	Morning	26	23.64
		Evening	20	18.18
		Night	64	58.18
7	Requirement Completion on Time	Yes	86	78.18
		No	24	21.82

Table 2: Distribution of Sleep Hygiene Knowledge		
Knowledge of Sleep Hygiene Practices	**Frequency**	**Percentage**
0-3 (Poor Knowledge)	5	4.55%
4-6 (Moderate Knowledge)	21	19.09%
7-9 (Good Knowledge)	73	66.36%
10 (Excellent Knowledge)	11	10.00%

Table 3: Distribution of Sleep Quality Scores		
PSQI Score Range	**Frequency**	**Percentage**
0-5 (Good Sleep Quality)	67	60.91%
6-10 (Moderate Sleep Disturbance)	41	37.27%
11-15 (Poor Sleep Quality)	2	1.82%
16-21 (Very Poor Sleep Quality)	0	0%

Table 4: Correlation Between Knowledge of Sleep Hygiene practices and Level of Sleep Quality

Variables	Mean	(SD)	(r)
Knowledge of Sleep Hygiene Practices	7.3	1.89	**- 0.34328**
Level of Sleep Quality	4.93	2.62	



DISCUSSION

This research study analyzed the association between sleep hygiene practices knowledge and the degree of sleep quality in 110 B.Sc. Nursing and GNM students using a correlational study design. Information was gathered by use of a structured questionnaire on sleep hygiene knowledge and Pittsburgh Sleep Quality Index (PSQI) in addition to demographic variables. The majority of the respondents were female (85%), aged between 19 and 22 years (70%), and residents of hostels (62), which might be associated with the knowledge and sleep patterns.

Results revealed that most students were well educated about sleep hygiene (Mean = 7.3 ± 1.89) with 66.34 percent of the students possessing good knowledge and 10 percent of the students having excellent knowledge, 23.64 percent of students showed low to moderate knowledge. The average PSQI was 4.93 and SD 2.62 or the sleep quality was generally good. The proportion of good sleep quality (60.91%), moderate disturbances (37.27%), and poor sleep quality (1.82%), were made.

Knowledge of sleep hygiene practices and level of sleep quality were moderately negatively correlated (r=-0.34328) revealing that the high level of knowledge is linked to high quality of sleep. These findings support the need to advocate sleep hygiene education among nursing students. More effective sleep quality in this group can be achieved by the means of targeted educational and lifestyle interventions related to time management, stress reduction, and healthy sleep habits.

RECOMMENDATION

Future researches ought to use more participants to enhance generalization and focus on how stress, workload, and lifestyle affect the quality of sleep. The effectiveness of educational interventions should also be tested in enhancing sleep hygiene such as the use of video-assisted teaching and workshops. The comparative research designs between various levels of academic and settings are advised to determine the differences in the sleep quality and knowledge among nursing students.

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Cite this article as: Gandhimathi. R (2026). A Correlational Study to Assess the Knowledge of Sleep Hygiene Practices and Level of Sleep Quality Among B.Sc. Nursing Students at Selected College. *International Journal of Innovative Research in Health Science*, 2(1), 2-6.