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Sleeping Pattern and Academic Performance Among Hostel Students: A Descriptive Correlational Study

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ABSTRACT

Background: Sleep is essential for physical health, emotional well-being, learning and memory. Hostel students may experience irregular sleep schedules and sleep disturbances because of shared accommodation, noise, academic demands and late-night activities. These factors may influence concentration, alertness and study habits.

Aim: The study aimed to assess sleeping patterns and academic performance among hostel students, examine the association between sleeping patterns and academic performance, and identify the association between sleeping patterns and selected demographic variables.

Methods: A quantitative approach with a descriptive correlational design was adopted. A sample of 100 female B.Sc. Nursing students residing in the hostel of P.P.G. College of Nursing, Coimbatore, was selected using nonprobability convenience sampling. Data were collected using a demographic questionnaire, a modified 15-item Pittsburgh Sleep Quality Index (PSQI) format, and a 15-item academic performance rating scale. Descriptive statistics and chi-square tests were used.

Results: Mild sleep disturbance was reported by 71% of students, moderate sleep disturbance by 20%, and good sleep quality by 9%; none were classified in the poor sleep quality category using the study's stated score bands. Academic performance was good in 55%, average in 24%, excellent in 19%, and poor in 2%. The association between sleeping pattern and academic performance was not statistically significant ($\chi^2 = 8.30$, df = 9, p = 0.505). Duration of hostel stay was significantly associated with sleeping pattern ($\chi^2 = 16.96$, df = 6, p = 0.009).

Conclusion: Sleep disturbances were common, while most participants demonstrated good or excellent academic performance. The study did not find a statistically significant association between the categorized sleeping pattern and academic performance. Sleep hygiene education and supportive hostile environments may help students maintain healthier sleep routines.

Keywords: sleeping pattern; sleep quality; academic performance; hostel students; B.Sc. Nursing; sleep hygiene descriptive correlational study

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INTRODUCTION

Sleep is a basic biological need that supports physical health, cognitive functioning and emotional stability. During sleep, the brain carries out processes involved in learning, memory consolidation and restoration. For students, adequate sleep is important because academic activities require sustained attention, concentration, information processing, recall and decision-making.

Sleeping pattern refers to habitual sleep behaviour, including the duration, timing, regularity and quality of sleep. A healthy pattern generally involves sufficient sleep, a reasonably consistent bedtime and waking time, and minimal interruptions. Irregular sleep schedules, difficulty falling asleep, frequent awakenings and daytime sleepiness may interfere with daily functioning.

College students may experience changes in sleep because of academic workload, examinations, social activities, electronic device use and inconsistent daily routines. Students living in hostels may face additional environmental influences such as noise from rooms and corridors, shared sleeping spaces, roommate activities, room temperature and limited control over the residential environment.

These factors are relevant to nursing students, who must balance classroom learning, assignments, examinations, skill-laboratory practice and clinical postings. Inadequate rest may contribute to tiredness and reduced alertness during classes or clinical learning. Sleep is therefore an important component of student health and educational functioning.

Curcio, Ferrara and De Gennaro (2006) discussed the relationship between sleep loss, learning capacity and academic performance. Hershner and Chervin (2014) described causes and consequences of sleepiness among college students, including effects on daytime functioning. Lund et al. (2010) examined sleep patterns and predictors of disturbed sleep in a large college-student population. These works provide a rationale for examining sleep in residential student settings.

The present study focused on hostel-residing B.Sc. Nursing students at P.P.G. College of Nursing, Coimbatore. It assessed sleep patterns and academic performance and examined whether the observed categories were statistically associated. The findings may help identify sleep-related concerns and support practical health education within hostel settings.

NEED FOR THE STUDY

Hostel life provides students with accommodation and opportunities for peer interaction, but it may also make sleep routines more difficult to maintain. Noise, shared rooms, late-night conversations, mobile phone use, academic pressure and irregular schedules can interrupt sleep or delay bedtime. Students may consequently experience daytime sleepiness, reduced energy or difficulty remaining attentive during lectures.

Sleep has an important role in learning and memory. Students who are tired may find it more difficult to concentrate, retain information, participate in classroom activities and revise lessons consistently. Nursing students require adequate attention not only for academic achievement but also for learning clinical procedures and applying theoretical knowledge safely.

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The study's background literature identifies sleep disturbance as a concern among college and hostel students. The references included in the original project describe associations between sleep quality, sleep duration and academic outcomes. However, the strength of such relationships may vary across settings and populations. Local assessment is useful because hostel conditions and student routines differ between institutions.

In the selected college, the study was undertaken to describe the sleep patterns of hostel students and their academic performance. It also examined whether sleep categories were associated with academic performance and whether selected demographic factors were associated with sleeping pattern. Such findings can guide sleep-hygiene awareness, student counselling and hostel-level measures such as quiet hours and improved sleep environments.

STATEMENT OF THE PROBLEM

"A study to assess the sleeping pattern and their effect on academic performance among hostel students."

OBJECTIVES

1. To assess the sleeping pattern of hostel students, including duration, quality and timing of sleep.

2. To assess academic performance among hostel students.

3. To determine the association between sleeping pattern and academic performance among hostel students.

4. To determine the association between sleeping pattern and selected demographic variables among hostel students.

HYPOTHESES

H1: There will be a significant association between sleeping pattern and academic performance among hostel students.

H2: There will be a significant association between sleeping pattern and selected demographic variables among hostel students.

MATERIALS AND METHODS

Research approach and design

A quantitative research approach was used. A descriptive correlational research design was adopted to describe sleeping patterns and academic performance and to examine the association between these variables without manipulating the study conditions.

Setting and duration

The study was conducted at P.P.G. College of Nursing, Coimbatore, Tamil Nadu, among B.Sc. Nursing students residing in the college hostel. The original project records the study duration as approximately one week to one month.

Population and sample

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The target population consisted of B.Sc. Nursing students residing in hostels. The accessible population comprised eligible B.Sc. Nursing students available in the P.P.G. College of Nursing hostel during the data-collection period. The sample consisted of 100 hostel-residing B.Sc. Nursing students.

Sampling technique

A non-probability convenience sampling technique was used. Participants who were accessible, available and willing to participate were selected according to the inclusion criteria.

Inclusion criteria

• B.Sc. Nursing students.

• Students residing in the college hostel.

• Students willing to participate in the study.

Exclusion criteria

• Students not residing in the college hostel.

• Students absent during data collection.

•Students with diagnosed sleep disorders or serious health conditions affecting sleep, as specified in the project.

DATA COLLECTION TOOL AND PROCEDURE

Description of the tool

Data were collected using a structured questionnaire with three sections. Section I included selected demographic variables such as age, gender, year of study, type of family, place of residence before hostel, duration of hostel stays, number of roommates and average study hours per day.

Section II contained 15 items adapted from the Pittsburgh Sleep Quality Index (PSQI) and presented in a five-point Likert format. The items covered sleep duration, sleep timing, sleep latency, sleep disturbances, environmental factors and daytime sleepiness. Section III contained 15 items in an academic performance rating scale covering concentration, alertness, assignment completion, classroom participation, understanding, memory, motivation, examination performance, revision and time management.

Scoring

The project describes a five-point response scale: Never = 1, Rarely = 2, Sometimes = 3, Often = 4 and Always = 5. The total score for each 15-item section ranged from 15 to 75. The project's stated interpretation bands were: 15–29, good sleep quality; 30–44, mild sleep disturbance; 45–59, moderate sleep disturbance; and 60–75, poor sleep quality. For academic performance, the bands were 15–29, poor; 30–44, average; 45–59, good; and 60–75, excellent.

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Validity and reliability

The original project states that content validity was assessed by experts in nursing, psychiatry and research methodology. A pilot study was conducted among students similar to the study population. Internal consistency was assessed using Cronbach's alpha, and the reported reliability coefficient was above 0.7.

Data collection and ethics

Permission was obtained from the concerned college authorities and hostel administration. Participants were informed about the purpose of the study and informed consent was obtained. Participation was voluntary, confidentiality and anonymity were maintained, and participants were informed of their right to withdraw. The questionnaire was completed in three sections and reportedly required approximately 20–30 minutes.

Data analysis

Frequency and percentage distributions were used for demographic variables and outcome categories. The project reports the use of chi-square tests to examine associations between sleeping pattern, academic performance and selected demographic variables. A p-value below 0.05 was considered statistically significant.

RESULTS

A total of 100 female B.Sc. Nursing students residing in the hostel participated in the study. The findings are presented according to the study objectives. Frequencies and percentages are reported as provided in the original project.

Table1.Selected demographiccharacteristics (N=100)

S.no	Demographic Variables	f	%
1.	**Age (in years):**		
	a)17 – 18	3	3%
	b)19 – 20	73	73%
	c)21 – 22	24	24%
	d)Above 22	0	0
2.	**Gender:**		
	a) Male	0	0
	b) Female	100	100%

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3.	**Year of study:**		
	a) 1st year	0	0
	b) 2nd year	64	64%
	c) 3rd year	32	32%
	d) 4th year	4	4%
4.	**Type of family:**		
	a) Nuclear	78	78%
	b) Joint	22	22%
	c) Extended	0	0
5.	**Place of residence (before hostel):**		
	a) Rural	71	71%
	b) Urban	29	29%
6.	**Duration of stay in hostel:**		
	a) Less than 6 months	2	2%
	b) 6 months - 1 year	7	7%
	c) 1 – 2 years	39	39%
	d) More than 2 years	52	52%
7.	**Number of roommates:**		
	a) Single	0	0
	b) 1 roommate	0	0
	c) 2 – 3 roommates	5	5%
	d) More than 3	95	95%

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8.	**Average study hours per day:**		
	a) Less than 2 hours	42	42%
	b) 2 – 4 hours	56	56%
	c) 4 – 6 hours	2	2%
	d) More than 6 hours	0	0

Most participants were aged 19–20 years (73%). All participants were female B.Sc. Nursing students. Nearly two-thirds were in the second year (64%). Most belonged to nuclear families (78%) and had lived in rural areas before entering the hostel (71%). More than half had stayed in the hostel for over two years (52%), and 95% shared accommodation with more than three roommates. More than half studied for 2–4 hours per day (56%).

SLEEPING PATTERN FINDINGS

Table 2. Overall sleep quality categories (N=100)

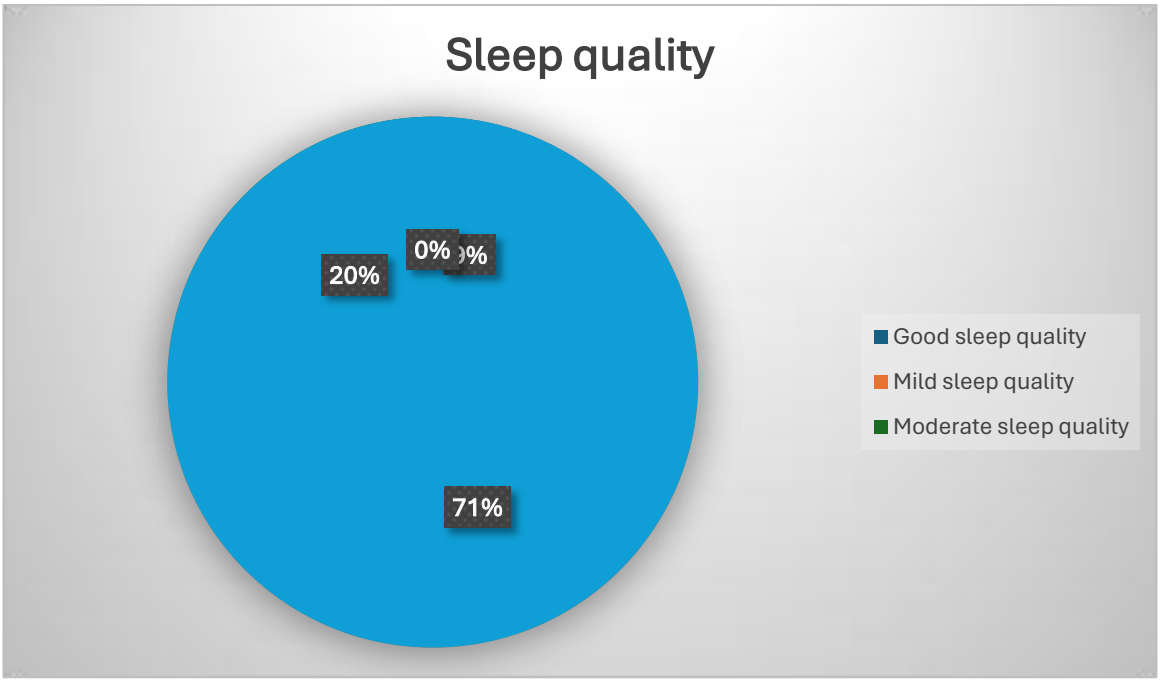
Sleep-Pattern Category	Score band stated in project	n (%)
Good sleep quality	15-29	9(9%)
Mild sleep disturbance	30-44	71(71%)
Moderatesleep disturbance	45-59	20(20%)
Poor sleep quality	60-75	0

Most of students, 71 (71%), were classified as having mild sleep disturbance. A further 20 (20%) had moderate sleep disturbance, while 9 (9%) were classified as having good sleep quality. No participant was classified in the poor sleep-quality category. Thus, 91% were placed in the mild or moderate sleep-disturbance categories according to the scoring interpretation reported in the project.

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Figure 1. Pie chart showing overall sleep-quality categories

Distribution of overall sleep quality categories(N=100)



Interpretation: The pie chart shows that most participants (71%) were classified as having mild sleep disturbance. Moderate sleep disturbance was reported by 20%, while 9% were classified as having good sleep quality. No participant was placed in the poor sleep-quality category in the reported results.

Selected sleep-related observations

• Only 7% always went to bed at the same time every night, while 20% never maintained the same bedtime, Only 13% always woke up at the same time.

• Eleven percent consistently reported obtaining 7–8 hours of sleep. Seven percent always took more than 30 minutes to fall asleep.

• Room or corridor noise always disturbed sleep for 24% of students. Roommate-related disturbance was reported as always occurring by 18%.

• Forty-six percent sometimes experienced discomfort from room temperature while sleeping.

• Daytime sleepiness was reported sometimes by 48%, often by 20% and always by 14%. Eleven percent always had difficulty staying awake during classes.

• Mobile-phone use before sleep was reported sometimes by 34%, often by 16% and always by 5%. Seventy-one percent never consumed tea or coffee before bedtime.

These item-level findings suggest irregular sleep timing, environmental interruptions and daytime sleepiness among a proportion of the participants.

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ACADEMIC PERFORMANCE FINDINGS

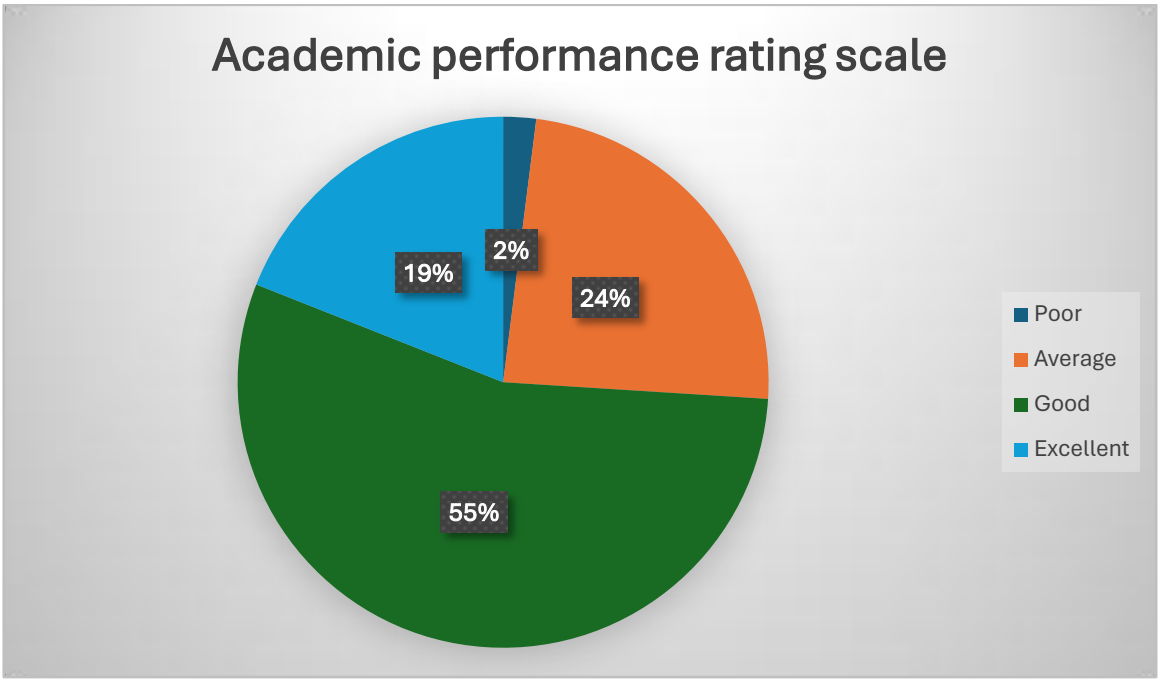
Table 3. Academic performance categories(N=100)

Academic performance	Score band	n (%)
Poor	15-29	2(2%)
Average	30-44	24(24%)
Good	45-59	55(55%)
Excellent	60-75	19(19%)

Good academic performance was the most common category, reported by 55 (55%) students. Twenty-four (24%) had average performance, 19 (19%) had excellent performance and 2 (2%) had poor performance. Overall, 74% were classified as having good or excellent academic performance.

Figure 2. Pie chart showing academic-performance categories

Distribution of academic performance categories(N=100)



Interpretation: The largest proportion of students (55%) had good academic performance. A further 19% had excellent performance, 24% had average performance and 2% had poor performance. Thus, 74% of participants were in the good or excellent categories.

Selected academic-performance observations

• Seventy-one percent always completed assignments on time, indicating a strong pattern of assignment completion.

• Only 16% always reported good concentration during classes, and 16% always felt alert and attentive during lectures.

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• Forty-seven percent sometimes reported being able to concentrate well during classes. Forty-two percent sometimes felt alert during lectures.

• Regular revision was less consistent: 17% never revised lessons regularly, 28% rarely did so, and only 6% always revised regularly.

• Forty-seven percent sometimes felt motivated to study regularly, while 13% always felt motivated.

• Half of the participants (50%) sometimes felt that adequate sleep helped them perform well academically.

The findings indicate that although most students were placed in the good academic-performance category, concentration, alertness, motivation and regular revision were not consistently reported by all participants.

ASSOCIATION BETWEEN SLEEPING PATTERN AND ACADEMIC PERFORMANCE

The association between sleeping pattern and academic performance was examined using the chi-square test. The cross-tabulation below is reproduced from the original project.

Table 4. Association between sleep pattern and academic performance (N=100)

Sleep pattern	Poor	Average	Good	Excellent	Total
Good sleep quality	1	2	3	3	9
Mild sleep quality	0	18	40	13	71
Moderate sleep quality	1	4	12	3	20
Poor sleep quality	0	0	0	0	0
Total	2	24	55	19	100

The chi-square result reported in the project was $\chi^2 = 8.30$ with 9 degrees of freedom and $p = 0.505$. Since p was greater than 0.05, the association was not statistically significant. Therefore, the study did not demonstrate a statistically significant association between the categorized sleeping pattern and academic performance in this sample.

Although 40 of the 71 students in the mild sleep-disturbance category had good academic performance, this distribution alone does not establish a significant relationship. The null hypothesis for the association between sleeping pattern and academic performance was therefore retained according to the reported test result.

Association with selected demographic variables

The project reports that duration of hostel stay was significantly associated with sleeping pattern ($\chi^2 = 16.96$, df = 6, $p = 0.009$). Age ($p = 0.695$), year of study ($p = 0.260$), type of family ($p = 0.121$), place of residence ($p = 0.103$), number of roommates ($p = 0.785$) and average study hours per day ($p = 0.052$) were not statistically significant at the 0.05 level.

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DISCUSSION

The present study assessed sleeping patterns and academic performance among 100 female B.Sc. Nursing students residing in a hostel. The findings showed that mild sleep disturbance was the most frequently reported category (71%), followed by moderate sleep disturbance (20%). Only 9% were classified as having good sleep quality. This indicates that sleep-related difficulties were common in the study group, although none were placed in the poor sleep-quality category under the project's stated classification.

Irregular bedtime and waking routines were evident. Only a small proportion consistently followed the same bedtime or waking time. Environmental factors were also reported: room or corridor noise, roommate disturbance and room temperature discomfort affected some students. Daytime sleepiness was frequently reported, and a proportion experienced difficulty staying awake during classes. These findings highlight the importance of considering the hostel environment and daily routine when addressing student sleep.

Academic performance was generally favourable in the sample. More than half of the students (55%) were in the good category and 19% were in the excellent category. Assignment completion was a relative strength, with 71% reporting that they always completed assignments on time. However, concentration, alertness, motivation and revision were less consistent. These findings suggest that academic performance is multidimensional and cannot be understood through one study-habit indicator alone.

The main inferential finding was that sleeping pattern was not significantly associated with academic performance ($\chi^2 = 8.30$, $p = 0.505$). This means that the study did not find sufficient statistical evidence of an association in this sample. It does not prove that sleep has no influence on learning or academic functioning. The sample size, the categorization of scores, self-reported measures and other unmeasured influences may affect the ability to detect an association.

Duration of hostel stay was significantly associated with sleeping pattern ($p = 0.009$), whereas the other selected demographic variables were not statistically significant. This suggests that length of residence may be relevant to students' sleep experiences in this setting. The cross-sectional descriptive correlational design, however, cannot establish why this association occurred or demonstrate a cause-and-effect relationship.

The overall findings support the need for practical sleep-hygiene education and a hostile environment that encourages regular and uninterrupted sleep. They should be interpreted within the limits of the single-college sample and the scoring approach used in the original project.

CONCLUSION

The study assessed sleeping patterns and academic performance among 100 hostel-residing B.Sc. Nursing students at P.P.G. College of Nursing, Coimbatore. Mild sleep disturbance was the most common sleep category (71%), and 20% experienced moderate sleep disturbance.

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Only 9% were classified as having good sleep quality. Irregular sleep schedules, environmental disturbances and daytime sleepiness were reported by a proportion of students.

Academic performance was good in 55% of students and excellent in 19%, while 24% had average and 2% had poor academic performance. The chi-square analysis did not show a statistically significant association between sleeping pattern and academic performance ($p = 0.505$). Duration of hostel stay was the only selected demographic variable reported to have a statistically significant association with sleeping pattern ($p = 0.009$).

The findings emphasize the importance of healthy sleep routines and supportive hostel environments. Because the study was correlational, it cannot establish that sleep disturbance caused changes in academic performance. Further studies using larger samples, validated scoring procedures and objective sleep measures are recommended.

NURSING IMPLICATIONS

Nursing education

• Nurse educators can include sleep hygiene education in student orientation and health-education sessions.

• Students can be taught about regular bedtimes, adequate sleep duration, reduced screen use before bed and the importance of rest for learning and clinical alertness.

Nursing practice

• Nurses working in student health services can identify students reporting persistent sleep difficulties or daytime fatigue and guide them toward appropriate assessment.

• Health education can include relaxation strategies, healthy routines and avoidance of late-night stimulants.

Nursing administration

• College and hostel administrators can consider quiet hours, appropriate lighting and ventilation, and procedures to reduce avoidable nighttime noise.

• Student-support services can provide counselling and referral pathways when sleep problems are persistent.

Nursing research

• Further research can evaluate sleep-hygiene programmes and their effects on sleep quality, alertness and student well-being.

RECOMMENDATIONS

1. Conduct similar studies with a larger sample from multiple nursing colleges to improve the generalizability of findings.

2. Use random sampling where feasible to reduce selection bias.

3. Consider sleep diaries, actigraphy or validated sleep-measurement tools alongside self-reported questionnaires.

4. Assess students during both examination and non-examination periods to understand changes in sleep routines.

5. Develop and evaluate structured sleep-hygiene education programmes for hostel students.

6. Explore additional factors such as academic workload, stress, screen time, caffeine intake and hostel environmental conditions.

LIMITATIONS

• The study was conducted in one college hostel and included only 100 students, limiting generalizability.

• The information on sleep and academic performance was self-reported and may be affected by recall or response bias.

• The design examined associations and cannot establish cause and effect.

• Students with diagnosed sleep disorders or serious health conditions affecting sleep were excluded, as stated in the project.

IMPORTANT SCORING NOTE FOR FINAL SUBMISSION

The original project describes higher total sleep scores as indicating better sleep in one section, but its score-band table classifies higher ranges as greater sleep disturbance. The response anchors (Never = 1 to Always = 5) may also require checking against the direction of each item. The article above reproduces the sleep categories and frequencies exactly as reported, without changing the results. Before academic submission, verify the scoring key, reverse-scoring of positively or negatively worded items, and the name/format of the modified PSQI with the research supervisor.

A minor discrepancy also appears in the original project for the number-of-roommates p-value (reported as 0.785 in the detailed results and 0.788 in one summary section). This article uses 0.785 from the detailed results. Confirm the value against the original statistical output.

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