



## Relationship Between Sleep Patterns and Academic Performance Among College Students In Selected Colleges of Anjarakandy, Kerala: A Cross-Sectional Study

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### Abstract

**Background:** Sleep is a vital physiological process essential for cognitive functioning, emotional regulation, memory consolidation, and academic success. College students often experience irregular sleep schedules due to academic stress, social activities, extracurricular commitments, and increased use of electronic devices. Sleep deprivation has emerged as a major concern among college students and is associated with poor academic outcomes.

**Objectives:** To assess sleep patterns among college students in selected colleges of Anjarakandy.

To assess academic performance among college students.

To determine the relationship between sleep patterns and academic performance.

**Methods:** A quantitative descriptive correlational study was conducted among 100 college students aged 18–24 years studying at the Institute of Paramedical Sciences, Kannur Medical College, Anjarakandy. Participants were selected using convenient sampling. Data were collected using a structured demographic questionnaire and checklists assessing sleep patterns and academic performance. Data were analyzed using descriptive statistics and Karl Pearson's correlation coefficient.

**Results:** Among the participants, 69% demonstrated poor sleep patterns, whereas only 26% reported good sleep patterns. Regarding academic performance, 74% showed poor academic performance and 22% demonstrated good academic performance. Karl Pearson's correlation coefficient revealed a moderate positive correlation between sleep patterns and academic performance ( $r = 0.52, p < 0.05$ ).

**Conclusion:** The study identified a significant positive relationship between sleep patterns and academic performance. Students with healthier sleep habits demonstrated better academic outcomes. Educational

institutions should prioritize sleep hygiene education and student wellness initiatives to promote academic success.

**Keywords:** Sleep Pattern, Academic Performance, Sleep Quality, College Students, Academic Achievement

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## INTRODUCTION

Sleep is a fundamental biological requirement necessary for maintaining physical health, emotional well-being, cognitive functioning, and academic success. Adequate sleep facilitates learning, memory consolidation, concentration, decision-making, and problem-solving abilities. Conversely, insufficient sleep adversely affects cognitive performance, mood regulation, and overall quality of life.

College students are particularly vulnerable to sleep disturbances due to academic demands, examinations, social commitments, extracurricular activities, and extensive use of digital devices. Studies indicate that approximately 50–70% of college students experience inadequate sleep and excessive daytime sleepiness. Poor sleep quality has been associated with impaired memory, reduced attention span, diminished academic performance, and increased psychological distress.

Recent evidence demonstrates a strong association between sleep quality and academic achievement. A systematic review and meta-analysis by Zhou et al. reported a significant positive relationship between sleep quality and academic performance among students. Similarly, Kalbacher and Randler found that sleep duration and chronotype significantly influence academic success among university students.

Despite growing evidence globally, limited studies have explored this relationship among college students in Kerala, particularly in Anjarakandy. Therefore, the present study was undertaken to assess sleep patterns and determine their relationship with academic performance among college students.

## OBJECTIVES

To assess sleep patterns among college students in selected colleges of Anjarakandy.

To assess academic performance among college students.

To determine the relationship between sleep patterns and academic performance.

## HYPOTHESIS

H<sub>1</sub>: There is a significant relationship between sleep patterns and academic performance among college students.

## MATERIALS AND METHODS

### Research Approach

Quantitative research approach.

### Research Design

Descriptive correlational design.

### **Setting**

Institute of Paramedical Sciences, Kannur Medical College, Anjarakandy, Kerala.

### **Population**

College students studying in selected colleges of Anjarakandy.

### **Sample Size**

100 students.

### **Sampling Technique**

Convenient sampling technique.

### **Inclusion Criteria**

Students aged 18–24 years.

Students willing to participate.

### **Exclusion Criteria**

Students diagnosed with sleep disorders.

Students taking medications affecting sleep.

Students with major health problems.

### **Variables**

**Independent Variable:** Sleep Pattern

**Dependent Variable:** Academic Performance

### **Data Collection Tools**

**Section A:** Structured questionnaire for demographic data.

**Section B:** Checklist assessing sleep patterns.

**Section C:** Checklist assessing academic performance.

### **Validity and Reliability**

Content validity was established through expert review by ten nursing experts. Reliability was assessed using the test-retest method.

Sleep Pattern Checklist:  $r = 0.894$

Academic Performance Checklist:  $r = 0.684$

### **Ethical Considerations**

Ethical approval was obtained from the Institutional Ethics Committee. Written informed consent was obtained from all participants before data collection. Confidentiality and anonymity were maintained throughout the study.

### Statistical Analysis

Data were analyzed using descriptive statistics (frequency and percentage) and inferential statistics (Karl Pearson's correlation coefficient).

### RESULTS

**Table 1. Demographic Characteristics (N = 100)**

Variable	Frequency	Percentage
18-20 Years	50	50%
21-22 Years	47	47%
23-24 Years	03	03%
Female	88	88%
Male	12	12%

**Table 2. Distribution of Sleep Pattern**

Sleep Pattern	Frequency	Percentage
Good	26	26%
Adequate	03	03%
Inadequate	02	02%
Poor	69	69%

**Table 3. Distribution of Academic Performance**

Academic Performance	Frequency	Percentage
Excellent	03	03%
Good	22	22%
Poor	74	74%
Very Poor	01	01%

**Table 4. Correlation between Sleep Pattern and Academic Performance**

Variable	r value	P value
Sleep Pattern vs. Academic Performance	0.52	<0.05

The findings revealed a statistically significant moderate positive correlation between sleep patterns and academic performance.

### DISCUSSION

The present study revealed that the majority of students experienced poor sleep patterns (69%) and poor academic performance (74%). A statistically significant positive correlation was observed between sleep patterns and academic performance ( $r = 0.52$ ).

The findings are consistent with Hershner and Chervin, who reported that sleep deprivation and daytime sleepiness negatively influence learning and academic achievement. Lawson et al. similarly observed that inadequate sleep adversely affects academic performance among university students.

A recent meta-analysis by Zhou et al. involving more than 163,000 participants reported a significant positive association between sleep quality and academic performance. Kalbacher and Randler also demonstrated that sleep duration and chronotype significantly influence educational outcomes among university students.

Adequate sleep facilitates memory consolidation, cognitive processing, attention, and learning, thereby improving academic performance. The findings emphasize the importance of promoting healthy sleep habits among college students.

## **IMPLICATIONS FOR NURSING**

### **Nursing Practice**

Nurses can educate students regarding sleep hygiene practices and healthy lifestyle modifications.

### **Nursing Education**

Sleep health promotion should be incorporated into student wellness programs.

### **Nursing Administration**

Educational institutions should organize awareness campaigns and counseling services related to sleep health.

### **Nursing Research**

Further intervention-based and longitudinal studies are recommended.

## **LIMITATIONS**

Study conducted in a single institution.

Small sample size.

Convenience sampling technique.

Self-reported data may introduce response bias.

## **RECOMMENDATIONS**

Conduct multicenter studies with larger sample sizes.

Explore sleep hygiene intervention programs.

Assess the influence of screen time and technology use on sleep quality.

Undertake longitudinal studies to establish causal relationships.

## **CONCLUSION**

The present study demonstrated a statistically significant positive relationship between sleep patterns and academic performance among college students. Poor sleep quality was highly prevalent and associated with

poorer academic achievement. Educational institutions should implement sleep hygiene education and student wellness initiatives to improve sleep quality, academic performance, and overall well-being among students.

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## CONFLICT OF INTEREST

The authors declare no conflict of interest.

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