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REVIEWER'S REPORT

Manuscript No.: IJAR-57806

Title: SLEEP QUALITY IN MEDICAL STUDENTS ACROSS THE VARIOUS PHASES OF MEDICAL EDUCATION IN CENTRAL TRAVANCORE, KERALA: A CROSS-SECTIONAL STUDY

Recommendation:

Accept as it is

Accept after minor revision.....

Accept after major revisionYES

Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality			√	
Techn. Quality			√	
Clarity		√		
Significance		√		

Reviewer's ID: JPR-094

Detailed Reviewer's Report

Reviewer Report

Overall Assessment

This manuscript addresses an important public health and educational issue by evaluating sleep quality among undergraduate medical students using the Pittsburgh Sleep Quality Index (PSQI). The study demonstrates a high prevalence of poor sleep quality and highlights gender-related differences. While the topic is relevant and the findings are potentially useful for academic institutions, the manuscript requires substantial methodological clarification, statistical strengthening, and improvement in presentation before publication.

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Recommendation: **Major Revision**

Strengths

1. Relevant and Important Topic

*** Sleep quality among medical students is a significant concern affecting academic performance, mental health, and overall well-being.**

*** The study addresses a population at high risk for sleep disturbances.**

2. Adequate Sample Size

*** Inclusion of 343 medical students from five medical colleges provides a reasonably large dataset.**

3. Use of a Validated Instrument

*** The Pittsburgh Sleep Quality Index (PSQI) is a widely accepted and validated tool for assessing sleep quality.**

4. Ethical Compliance

*** Ethical approval and informed consent procedures are appropriately described.**

5. Practical Implications

*** Findings may assist medical colleges in developing sleep hygiene programs and student wellness interventions.**

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Weaknesses

Major Concerns

1. Lack of Novelty

* Numerous studies have already assessed sleep quality among medical students using PSQI.

* The manuscript does not clearly establish what new knowledge is contributed beyond regional data from Central Travancore.

2. Inadequate Statistical Analysis

* Only descriptive statistics are presented.

* No inferential statistical tests (Chi-square, t-test, logistic regression) are reported.

* Statements such as "significantly higher prevalence in females" are unsupported because no p-values or confidence intervals are provided.

3. Study Objective Not Fully Addressed

* The title indicates comparison across various phases of medical education.

* Results do not adequately compare sleep quality between different academic years.

* No phase-wise statistical analysis is presented.

4. Convenience Sampling Bias

* Non-random convenience sampling limits external validity and generalizability.

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5. Missing Sample Size Calculation

* No justification for the sample size is provided.

6. Absence of Multivariate Analysis

* Potential predictors such as:

* gender,

* year of study,

* residence,

* substance use

are not analyzed as determinants of poor sleep quality.

Methodological Issues

1. Incomplete Description of Study Setting

* Names and characteristics of participating colleges should be described.

2. Questionnaire Validation

* No information is provided regarding pilot testing of the electronic questionnaire.

3. Inclusion/Exclusion Criteria

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- * Exclusion criteria are absent.
- * Students with diagnosed sleep disorders or psychiatric illness may influence results.

4. Potential Confounders Not Evaluated

The study ignores:

- * caffeine consumption,
- * screen time,
- * academic stress,
- * depression/anxiety,
- * hostel vs home residence,
- * exercise habits.

Results Section Issues

1. Table Errors

Table 4

The frequency for "16–30 minutes" appears incorrect:

Current:

- * 16–30 minutes = 10 students (30.6%)

This percentage is mathematically impossible.

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Should likely be approximately:

*** 105 students (30.6%)**

Authors should verify all numerical entries.

2. Missing Statistical Tests

The manuscript reports gender differences but lacks:

*** Chi-square test**

*** Independent t-test**

*** p-values**

*** confidence intervals**

3. No Phase-Wise Comparison

Despite the title emphasis, sleep quality across:

*** 1st MBBS,**

*** 2nd MBBS,**

*** 3rd MBBS Part I,**

*** 3rd MBBS Part II**

is not statistically compared.

Discussion Section Issues

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1. Unsupported Comparisons

Several studies are mentioned but not cited:

Examples:

- * 50.9% prevalence study
- * Hong Kong study (58%)
- * Jordan study (25.12 min sleep latency)

References must be added.

2. Overinterpretation

The statement:

> "sleep architecture is likely fragmented"

cannot be concluded from PSQI data alone.

No polysomnography or objective sleep architecture assessment was performed.

3. Limited Critical Analysis

Discussion should include:

- * comparison with Indian studies,
- * explanation of gender differences,

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- * academic year-specific observations,
- * regional implications.

Language and Formatting Issues

1. Typographical Errors

Examples:

- * "Table3" should be "Table 3"
- * "Three or more times a wee k"
- * "Sociodemographic CharacteristicsA total"
- * Inconsistent table formatting

2. Grammar

Several sentences are excessively long and require editing.

3. Reference Formatting

References are inconsistent and not fully compliant with Vancouver style.

Examples:

- * Inconsistent journal abbreviations
- * Capitalization errors
- * Missing DOI information

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Key Findings

1. Poor sleep quality prevalence = 53.4%.
2. Female students exhibited poorer sleep quality than males.
3. Average sleep duration was approximately 5.9 hours.
4. More than half experienced delayed sleep onset.
5. Daytime dysfunction due to sleepiness was common.
6. Sleep medication use was low.

Scientific Significance

Positive Aspects

- * Provides regional data from Central Travancore, Kerala.
- * Highlights the burden of sleep disturbances among medical students.
- * Supports implementation of student wellness initiatives.

Limitations Affecting Significance

- * Limited novelty.
- * Lack of analytical statistics.
- * Failure to analyze phase-wise differences despite title emphasis.
- * Potential sampling bias.

Overall scientific significance is ****moderate****.

Recommendation to Editor

REVIEWER'S REPORT

Criterion	Rating
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Originality	Fair
Technical Quality	Fair
Methodology	Fair
Statistical Analysis	Poor
Clarity of Presentation	Fair
Clinical/Public Health Significance	Good
References	Fair
Overall Recommendation	**Major Revision**

Final Decision****Major Revision Required****

The manuscript addresses an important issue and contains potentially useful regional data. However, substantial revisions are needed, particularly regarding statistical analysis, phase-wise comparisons, correction of data inconsistencies, strengthening of discussion, and improvement of referencing before the manuscript can be considered for publication.

Detailed Justification for Major Revision (Line-by-Line Review)

The manuscript should be classified as **Major Revision** because there are significant methodological, statistical, presentation, and interpretation issues that affect scientific rigor and reliability, although the study has potential value.

ABSTRACT**Lines 12–13**

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Issue:

"This cross-sectional study was conducted between 2 months"

Reason:

Grammatically incorrect. The exact study period should be clearly stated (e.g., November–December 2024).

Revision Required:

Major language correction.

Lines 14–15

Issue:

Convenience sampling used.

Reason:

Convenience sampling introduces selection bias and limits external validity. Authors have not justified why probability sampling was not used.

Revision Required:

Authors should discuss sampling limitations more thoroughly.

Lines 24–25

Issue:

"Gender analysis demonstrated that a significantly higher percentage of females experienced poor sleep quality"

Reason:

No statistical test, p-value, confidence interval, or odds ratio is reported.

A difference cannot be called "significant" without statistical testing.

Revision Required:

Perform Chi-square test and report p-value.

INTRODUCTION

REVIEWER'S REPORT

Lines 50–53

Issue:

Claim of scarcity of regional data.

Reason:

Authors do not provide references supporting the statement that Central Travancore-specific data are scarce.

Revision Required:

Add supporting citations.

Lines 54–55

Issue:

Study objective mentions:

"various progressive phases of medical curriculum"

Reason:

The title emphasizes phase-wise analysis.

However, no phase-wise comparison appears in Results.

Revision Required:

Either:

perform phase-wise analysis, or

modify title/objective.

METHODS

Lines 60–61

Issue:

Five medical colleges included.

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Reason:

Names of participating institutions are not provided.

Revision Required:

Provide participating institutions or explain confidentiality.

Lines 61–62

Issue:

No exclusion criteria.

Reason:

Students with:

diagnosed insomnia

psychiatric illness

sleep apnea

chronic disease

could influence findings.

Revision Required:

Clearly state exclusion criteria.

Lines 68–69

Issue:

Convenience sampling.

Reason:

May attract only students interested in sleep-related issues.

Creates selection bias.

Revision Required:

Expanded limitation discussion.

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Lines 71–72

Issue:

Sample size calculation missing.

Reason:

No explanation of how 343 participants were determined.

Revision Required:

Provide sample size estimation formula.

Lines 83–89

Issue:

Statistical analysis inadequate.

Reason:

Only descriptive statistics reported.

No:

Chi-square test

t-test

logistic regression

confidence intervals

Revision Required:

Major statistical revision required.

RESULTS

Line 92

Issue:

Formatting error.

Current:

Sociodemographic CharacteristicsA total...

REVIEWER'S REPORT**Reason:**

Missing spacing and proofreading.

Lines 95–96**Issue:**

Distribution by MBBS phase reported.

Reason:

No subsequent comparison among phases.

The title promises comparison across phases.

Revision Required:

Perform phase-wise PSQI comparison.

Lines 106–112**Issue:**

Sleep latency discussion lacks statistical analysis.

Reason:

Only descriptive percentages presented.

No subgroup comparison.

TABLE 4**Major Data Error**

Category	n	%
≤15 min	207	60.3
16–30 min	10	30.6

Issue:

Mathematically impossible.

$10/343 = 2.9\%$, not 30.6% .

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Reason:

Either percentage or frequency is incorrect.

Revision Required:

Verify original dataset.

This alone warrants major revision.

TABLES

General Issue

Tables lack:

p-values

test statistics

confidence intervals

Reason:

Readers cannot determine statistical significance.

GENDER ANALYSIS

Lines 166–168

Issue:

"significantly higher rate"

Reason:

No significance testing reported.

Scientific overstatement.

Revision Required:

Perform Chi-square analysis.

DISCUSSION

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Lines 182–184

Issue:

References missing.

Claims:

50.9% prevalence study

Hong Kong study

are not cited.

Reason:

Readers cannot verify findings.

Revision Required:

Add citations.

Lines 187–188

Issue:

"sleep architecture is likely fragmented"

Reason:

PSQI cannot assess sleep architecture.

Sleep architecture requires:

polysomnography

actigraphy

Authors are overinterpreting findings.

Revision Required:

Remove or modify statement.

Lines 194–195

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Issue:

Jordan study cited without reference.

Reason:

Not present in reference list.

Revision Required:

Add citation.

Lines 200–201

Issue:

Authors speculate on hormonal and psychological causes.

Reason:

No data collected regarding:

hormones

anxiety

stress

Unsupported speculation.

Revision Required:

State as hypothesis or remove.

LIMITATIONS

Lines 205–211

Issue:

Limitations section incomplete.

Missing:

Cross-sectional design limitations

Non-response bias

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Female predominance (66.5%)

Self-reporting bias

Lack of objective sleep measures

Revision Required:

Expand limitations.

CONCLUSION

Lines 218–222

Issue:

Strong institutional recommendations.

Reason:

Study only demonstrates association.

No intervention tested.

Recommendations should be more cautious.

REFERENCES

Major Issues

Reference 9

Formatting inconsistent.

Reference 10

Book citation not in Vancouver style.

References 11–14

Inconsistent abbreviations.

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Missing References

Discussion mentions:

Hong Kong study.

Jordan study.

314-student web survey.

These references are absent.

Revision Required:

Add all missing references.

Why Major Revision Instead of Minor Revision?

Major Scientific Problems

Issue	Severity
No inferential statistics	Major
Unsupported significance claims	Major
Title-objective mismatch	Major
Missing phase-wise analysis	Major
Data inconsistency in Table 4	Major
Missing citations in discussion	Major
Sample size calculation absent	Major
Overinterpretation of results	Major
Selection bias from convenience sampling	Major

Overall Editorial Decision

Recommendation: Major Revision

The manuscript addresses an important topic and contains useful regional data, but substantial revisions are required in methodology reporting, statistical analysis, data verification, phase-wise comparison, citation completeness, and interpretation of findings before it can be considered for publication. A minor revision would not be sufficient because several core scientific issues affect the validity and reliability of the conclusions.