ISSN(O): 2320-5407 | ISSN(P): 3107-4928

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

www.journalijar.com

ISSN NO. 2320-5407

REVIEWER'S REPORT

Manuscript No.: IJAR-57828

Title: Prevalence and Determinants of Dental Caries Among Two WHO Index Age Groups in Jaipur: A Cross-Sectional Study.

Recommendation:
Accept as it is .....
Accept after minor revision.....
Accept after major revision .....Yes.....
Do not accept (*Reasons below*) .....

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

Reviewer's ID: JPR-Dr. Sireesha Kuruganti

Detailed Reviewer's Report

Detailed Reviewer Report

Overall Assessment

The manuscript addresses an important public health topic by comparing dental caries prevalence among two WHO index age groups (12 years and 65–74 years) in Jaipur. The study is relevant for oral health planning and epidemiological surveillance. However, substantial concerns exist regarding study design reporting, statistical analysis, data presentation, interpretation of findings, methodological rigor, and manuscript formatting. Several tables contain inconsistencies, and the discussion occasionally overinterprets findings not adequately supported by the presented data.

Major Comments

1. Title

Lines 1–2

Comment: The title is appropriate and reflects the study objectives. However, the term "Determinants" implies causal inference, which cannot be established through a cross-sectional design.

Suggestion: Replace "Determinants" with:

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> "Factors Associated with Dental Caries"

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2. Abstract

Lines 13–20

Issue: Sample Size Justification Missing

The abstract reports inclusion of 400 participants but does not explain how the sample size was determined.

Recommendation: Include sample size calculation methodology.

Lines 21–27

Issue: Incomplete Statistical Reporting

The authors report significant differences but fail to provide confidence intervals.

Recommendation: Include:

Odds ratios

95% confidence intervals

Effect sizes

for major associations.

Lines 28–32

Issue: Overstatement

The conclusion states that age, gender, residential location, and oral hygiene practices significantly influenced caries prevalence.

However, oral hygiene variables are not statistically demonstrated in the Results section.

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Recommendation: Limit conclusions to variables actually analyzed statistically.

Introduction

3. Literature Review

Lines 47–50

Comment: The manuscript cites global burden statistics but does not provide the most recent GBD estimates.

Recommendation: Update using latest GBD 2023/2024 oral health data.

Lines 59–65

Issue: Insufficient Indian Context

The introduction discusses national prevalence but lacks information regarding:

Rajasthan

Jaipur

Regional oral health disparities

Recommendation: Include state-level epidemiological evidence.

Lines 71–76

Issue: Research Gap Weakly Established

The authors state that few Indian studies compare adolescents and elderly populations simultaneously.

Recommendation: Provide:

Number of existing studies

Their limitations

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How the current study addresses these gaps

Materials and Methods

4. Study Design

Lines 83–84

Issue: Cross-sectional Design Not Adequately Described

The study is described as "descriptive cross-sectional."

Recommendation: Specify whether it follows:

STROBE guidelines

WHO oral health survey protocols

---

5. Sampling Method

Lines 89–92

Major Concern

Sampling procedures are inadequately described.

Questions unanswered:

How were schools selected?

How many schools participated?

How were elderly participants recruited?

Was consecutive sampling used?

Was randomization performed?

Recommendation: Provide detailed sampling framework.

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6. Selection Bias

Lines 90–92

Major Concern

Children were recruited from schools whereas elderly individuals were recruited from a dental institution.

This creates substantial selection bias.

Elderly patients visiting a dental hospital are more likely to have oral disease than community-dwelling elderly individuals.

Impact: The reported 74% prevalence may be artificially elevated.

Recommendation: Discuss this limitation extensively.

---

7. Inclusion and Exclusion Criteria

Lines 93–98

Issue

Excluding individuals with systemic diseases requiring specialized care may eliminate a significant proportion of elderly participants.

Recommendation: Explain rationale and estimate excluded subjects.

---

8. Examiner Calibration

Lines 99–103

Strength

Calibration statistics are satisfactory:

Kappa = 0.85

ICC = 0.91

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These indicate excellent reliability.

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9. Data Collection

Lines 104–116

Issue

Behavioral variables were recorded but their operational definitions are absent.

Examples:

What constitutes regular brushing?

How was sugary beverage intake categorized?

What defines fluoride toothpaste use?

Recommendation: Provide detailed variable definitions.

---

10. Statistical Analysis

Lines 117–120

Major Concern

Statistical tests appear inappropriate.

The manuscript reports:

ANOVA

t-test

Pearson correlation

However:

DMFT data are typically skewed and count-based.

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Caries prevalence is categorical.

Recommendation: Consider:

Chi-square test

Mann–Whitney U test

Logistic regression

Poisson regression

instead of ANOVA alone.

Results

11. Gender Distribution

Lines 128–133

Concern

The sample contains:

72% males

28% females

This severe imbalance may bias results.

No explanation is provided.

Recommendation: Explain gender imbalance and its implications.

---

12. Table 2 (12-Year Age Group)

Lines 134–135

Observation

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No significant gender difference found.

This result is adequately reported.

However, confidence intervals are missing.

---

13. Table 3 (65–74 Years)

Lines 137–138

Observation

Female elderly participants show significantly higher DMFT.

However:

Mean difference is not reported.

Effect size absent.

Recommendation: Report Cohen's d or confidence intervals.

---

14. Table 4 (Location – 12 Years)

Lines 139–144

Issue

The authors conclude no significant association (p=0.993).

Correct interpretation.

However, reporting:

Urban = 0.34

Semi-urban = 0.34

Rural = 0.36

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indicates almost identical values.

The table contributes limited scientific value.

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15. Table 5 (Location – Elderly)

Lines 146–149

Major Concern

Data appear inconsistent.

The DMFT values are:

Urban = 0.34

Semiurban = 0.34

Rural = 0.38

Yet p = 0.005 is reported.

Such small differences are unlikely to generate highly significant results.

Recommendation: Recheck calculations and table values.

Possible data-entry error.

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16. Missing Behavioral Analysis

Lines 153–155

The manuscript states:

Adolescents brushed once daily

High sugary beverage intake

Low fluoride awareness

However:

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No numerical data are presented.

No statistical tests are shown.

No tables are provided.

Major Revision Needed

Discussion

17. Overinterpretation

Lines 180–185

The discussion attributes female caries prevalence to:

Hormonal fluctuations

Osteoporosis

Salivary changes

These variables were not measured.

Recommendation: Present as hypotheses rather than explanations.

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18. Rural–Urban Interpretation

Lines 186–192

The explanation is reasonable.

However, because Table 5 appears inconsistent, interpretation should be deferred until data verification.

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19. Oral Hygiene Discussion

Lines 198–204

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The authors discuss fluoride exposure as a significant factor.

However, no statistical evidence was presented.

Recommendation: Avoid claiming associations not demonstrated analytically.

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20. Sugary Beverage Consumption

Lines 205–210

The discussion assumes sugary beverages contributed to caries.

Again, statistical associations were not shown.

This weakens scientific validity.

---

21. Limitations

Lines 225–228

Current limitations are insufficient.

The following should be added:

Selection Bias

Hospital-based elderly sample.

Gender Imbalance

72% male participants.

Recall Bias

Self-reported behavior.

Cross-sectional Design

No causal inference.

Lack of Multivariable Analysis

Potential confounding unaddressed.

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Conclusion

Lines 230–236

Issue

The conclusion states:

> Age, gender, residential location, oral hygiene practices, and dietary behaviors were important determinants.

However:

Oral hygiene practices were not statistically tested.

Dietary behaviors were not statistically tested.

Recommendation: Revise conclusion to reflect only demonstrated findings.

Clinical Significance

Lines 238–241

The clinical significance section is appropriate but should be expanded to include practical recommendations such as:

School oral health programs

Community fluoride initiatives

Geriatric oral health screening

Tables and Presentation

Table Issues

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Table Numbering

Two tables are labeled "Table 4" (Lines 139 and 146).

Correction Required

Table Formatting

Several tables lack:

Sample sizes

Confidence intervals

Statistical test names within table legends

Data Consistency

Particular attention needed for:

Table 5 (Lines 146–149)

Reported p-value and means appear inconsistent.

Statistical outputs should be reverified.

Language and Grammar Corrections

Line 138

Current:

> Significance level set a t<0.05

Correct:

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> Significance level set at p<0.05

Lines 143–144

Current:

> no significant association of location on dental caries prevalence

Correct:

> no significant association between residential location and dental caries prevalence

---

Lines 148–149

Current:

> have significant significance

Correct:

> showed a statistically significant association

Throughout Manuscript

Several instances require:

Grammar correction

Consistent tense usage

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Uniform p-value formatting

Professional scientific writing style

Strengths of the Study

1. Public health relevance.

2. Comparison of two WHO index age groups.

3. Adequate sample size (400 participants).

4. Good examiner calibration (Kappa=0.85; ICC=0.91).

5. Use of WHO Oral Health Assessment Form (2013).

6. Addresses an underexplored comparison in Indian populations.

Final Recommendation

Decision: Major Revision

The manuscript has potential for publication after substantial revision. Major concerns include:

1. Possible errors in Table 5 data.

2. Selection bias in elderly recruitment.

3. Lack of multivariable analysis.

4. Missing statistical evidence for behavioral factors.

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5. Overinterpretation of results.

6. Insufficient methodological details.

7. Table numbering and formatting errors.

8. Language and grammatical corrections.

Once these issues are addressed, the manuscript will be considerably strengthened for publication.