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Peer Review

Review of: "The Influence of Glycemic Status and Sociodemographic Factors on Patients' Dental Caries Risk and Experience in Lagos, Nigeria"

Carlo Eduardo Medina-Solís[1]

1. Odontología, Universidad Autónoma del Estado de Hidalgo, Mexico

Article Evaluation: The Influence of Glycemic Status and Sociodemographic Factors on Patients' Dental Caries Risk and Experience in Lagos, Nigeria

Strengths of the Study:

1. Relevance to the Topic: The study addresses an important gap in the literature by exploring the relationship between diabetes, sociodemographic factors, and dental caries in a Nigerian population, where the burden of diabetes and oral health disparities is significant.

2. Methodological Design: The use of a cross-sectional design with comparative groups (diabetics vs. non-diabetics) and the inclusion of multivariate analysis (logistic regression) strengthen internal validity.

3. Variables Analyzed: The inclusion of sociodemographic factors (education, income, ethnicity) along with glycemic status enriches the analysis.

4. Clinical Application: The findings underscore the need for specific preventive interventions for diabetic populations, which is useful for public health policies.

Questions and Recommendations for the Authors:

- Add studies that used the classification employed by the authors.
- Change the name of the study title from "controlled cross-sectional investigation" to "cross-sectional study."
- How was randomization ensured in participant recruitment, given that diabetics came from a specialty clinic and controls from family medicine? Was age/gender matching performed to reduce

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bias? Discuss potential limitations due to differences in baseline characteristics (e.g., older age in diabetics) and how this could have affected the results.

- How was "caries risk" defined and measured (low/moderate/high)? The article mentions factors such as oral hygiene and diet but does not detail the cutoff points used. Are there any previous references where the same methods are used/validated? The authors could include a table or appendix with the specific criteria for classifying caries risk.
- In the multivariate analysis, were variables such as diet, brushing frequency, fluoride use, or access to dental services considered? These factors could influence caries independently of diabetes. Could the authors explain how these confounders were handled in the statistical models?
- The association between diabetes and caries was not statistically significant in the adjusted model (OR: 1.386, p=0.530). How do they interpret this lack of significance compared to the initial hypothesis? The authors could discuss possible reasons (e.g., insufficient sample size, heterogeneity in glycemic control among diabetics).
- Although diabetics had a higher descriptive risk of caries, caries progression (new cavities) was similar between groups. Could this be due to differences in symptom perception or access to treatment? Please explore this discrepancy in the discussion.
- The sample comes from a single hospital in Lagos. How might the results vary in rural areas or areas with less access to healthcare?
- The authors state: “Patients were categorized into low, moderate, or high risk based on caries history, dietary habits, fluoride exposure, oral hygiene status, and systemic conditions.” What systemic conditions are they referring to? Did they include diabetes? There would be a problem of mathematical coupling if this were the case, since the dependent variable is included in the independent variable.
- Detail the dental examiner calibration process and the reproducibility of measurements (e.g., kappa calculation for agreement).
- Add a graph (e.g., bar chart) to visualize differences in caries risk by group.
- Table 1 mentions Mean ± SD; I believe they refer to age; add the word.
- Compare the findings more explicitly with previous studies in other populations (e.g., Do they agree with results in high-income countries?).
- Review the citation of the included references. They do not follow a standardized format.

The study is valuable for its focus on an underresearched population and its multifactorial approach. However, it requires greater methodological clarity and a discussion of limitations to strengthen its

conclusions. With the suggested revisions, the article would have a significant impact on the dental and public health literature, especially in resource-limited settings.

Declarations

Potential competing interests: No potential competing interests to declare.