Reviewers report

Title: Poverty, Social Exclusion and Dental Caries of 12-year-old children: A cross-sectional study in Lima, Peru

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Reviewer: Marco Aurélio Peres

Reviewers report:

This paper reports on poverty, social exclusion and dental caries in adolescents in Lima, Peru. The concepts and use of poverty and social exclusion are the most interesting aspects of the paper. My main comment is related to the study’s framework and methods.

Major compulsory revision

Background

On page 1, first paragraph; the paper states that “This socio-economic gradient has also been consistently found in oral health measures across the developed world [5-10]. However, evidence from developing countries is scarce.” I cannot agree with this justification for the study. There is a plethora of evidence from developing countries (Brazil, Mexico, Thailand, South Africa, and China, for example) showing that socioeconomic status is strongly associated with oral health. The authors should provide a detailed explanation about how they conducted the search of scientific literature to support this statement.

Methods:

The sample size calculation needs some additional explanation. The parameters mentioned in the methods section are not enough when a cluster sample is performed. For example, how was calculated the design effect? Why were selected 11 (and not 12, 13...) communities?

I couldn’t understand when the authors mentioned that “Sample was split into 2 groups due to the skewed distribution of the DMFT index”. What does it mean?

Poisson regression, instead ordinary logistic regression, is recommended in cross sectional study with binary outcome of approximately 20% (in this study, 83.3% of children have dental caries experience), so that the odds ratio tends to overestimate the prevalence ratio. Some comments about the possible overestimation of the OR should be addressed in the discussion section.

How were the criteria to enter or remove a variable in the multivariate modelling?

Results

An inclusion of a comprehensive descriptive statistics of the study is highly desirable

Discussion

Some additional discussion about potential bias and how did the authors control
them are recommend (selection bias, examiner blinding, temporal ambiguity, etc).

Since the studied population is relatively socioeconomic homogeneous (the sample was selected from undeserved communities) is not surprise a lack of association between social exclusion and dental caries. Furthermore, the lack of statistic power to test this link may be due the small sample size. These possibilities should be commented.

Interaction between social exclusion and poverty should be done to clarify the relationship between the two main exposures.

The authors wrote that “As we aimed to assess the overall impact of socio-economic position on dental caries of children, we considered inappropriate to adjust for behaviours. Indeed, oral health-related behaviours are considered as merely intermediates of the relationship between socio-economic indicators and oral health”. I strongly agree with this modelling approach.

Minor essential revisions

The authors should include the sample size (n) in the abstract.

Methods:
How many blocks were sampled? How was the sample selection procedure?
Eligibility criteria should be clearly explained
I suggest include response rate in the results section.

Results
The results section should be expanded in order to provide more information to the readers.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests.`s.