Reviewer’s report

Title: Association of caries experience and dental plaque with sociodemographic characteristics in elementary school-aged children: a cross-sectional study

Version: 0 Date: 03 Jun 2017

Reviewer: Alexandre Baumgarten

Reviewer's report:

After reviewing the article "Association of dental caries and dental plaque with socio demographic characteristics in elementary school-aged children: a cross-sectional study" I observed that there are several areas in this paper that needs substantial improvement. Although the subject is relevant for the country, the methodology, the results presentation and discussion have shortcomings that cast doubts on their conclusions. The paper needs to be extensively amended; the paper cannot be adequately evaluated unless the authors can review these aspects.

Title

The title of this manuscript refers to 'dental caries'. However, the authors used the DMF index, which is well established as a measure of caries experience in dental epidemiology.

Abstract

Background: The objective needs to be clearly stated and defined. It is unclear how the authors will "help plan for oral health promotion and oral disease prevention."

Results: The presentation of this section needs to be standardized.

Conclusion: The conclusion does not essentially correspond to the objective of this manuscript.

Key words: Justify the choice for 'dental health'.
Background

It is necessary to revise and improve the background section, including the objective, in order to create conditions to sustain the exploration of the factors investigated. The section presents subjective aspects, which are not covered at the paper.

About the sentence: 'Meanwhile, children aged 6-12 years old represent a top priority in oral health programs'. Not clear to me. I suggest further develop this paragraph, explaining in which oral health programs. Is it for Iranian public health or a specific program?

In the third paragraph the authors already describe known factors for the increase of the dental caries in Iranian children. Why were they not presented and evaluated concomitantly in the statistical model? The presentation of such data could justify paragraphs in the discussion and background.

Page 4 - First paragraph

This paragraph is confused. If the prevalence of dental caries is 81.83% and 86.89%; why a small number of children need treatment? I suggest further develop and clarify.

Page 4 - Second paragraph

The study does not support this paragraph. It still presents review errors and requires references. The first part of the paragraph is confused and has no connection with this study. There are descriptions of access barriers, however this paper did not investigate them. The authors do not mention whether they are barriers of public or private system. The objective needs to be clearly stated and defined.

Methods

Seems to be appropriate for this study, but some extra information is required. The sample size calculation was performed? Without the description of the variables, it is impossible to evaluate specific questions in results section. So, for each variable, give sources of data and details. Clearly define the outcomes and describe any efforts to address potential sources of bias. It is not clear how missing data were addressed.
If the authors performed a "cluster multistage sampling", why "seven schools were selected from
district 1 and nine schools from district 2 by convenience sampling"? All had an equal chance of
being selected?

Figure 1: The title is inappropriate. The figure presents formatting errors and missing data. The
lower text boxes are confusing and difficult to understand.

Page 5 - Lines 36-41

More details are needed about the questionnaire applied.

Dental examinations section: It was not clear whether one or several students conducted the exams. Was calibration performed? Reference 14 shows an error.

O'Leary index was performed (as indicated in abstract), but it is not presented in this section.

Results

No information about participants was presented. Report the numbers of potentially eligible
students, missing data, refusals and motives. A division of the DMF index in this section would
qualify the study.

Table 1: The title is inappropriate. The table needs to be standardized and formatted. The same
age is in two categories (Example: 7-8; 8-9 years). Present values with the same number of
decimal places in all its cells (standardization). What means >0 in the cell >0(%)?

Table 2: The title is inappropriate. The regression was adjusted for which variables? Table 2 was
not cited in the second paragraph of page 7.

Table 3: The regression was adjusted for which variables?
Discussion

The discussion presents, in several occasions, restatement of results, which is not necessary. There are numerous comparisons with other studies, but without theoretical depth. The authors discuss topics and make statements on items not investigated by this research. Although the authors indicate an increase in dental caries, which cannot be confirmed with this cross-sectional study, no new associated factor, in addition to those already discussed deeply in the literature has been presented.

Page 7 - Fourth paragraph

This part can be discussed in limitation paragraph: "To the best of our knowledge, the current study is first to provide […] be considered the strengths of the present study". The second part of this paragraph is reaffirmation of results and can be suppressed. I suggest that the authors present key results with reference to study objectives.

Page 8 - First paragraph

There is no reference for "A national oral health survey in Iran was conducted in 2012-2013 that demonstrated the mean dmft of children aged 7-8 years was 4.94 nationally and 5.64 in Hamdan."

There is lack of information in references 16 and 17

Page 8 - Lines 31-36

The results that the authors exposed were not presented in the results section.

Page 9 - First paragraph

The authors make statements that cannot be answered with this research.

Page 9 - Second paragraph

Again the authors make statements that cannot be answered with this research.

Page 9 - Third paragraph
Reference 35 does not apply to the paragraph. Again the authors make statements that cannot be answered with this research.

Page 10 - Second paragraph

The statement 'Meanwhile, schools may be the best place to deliver training on oral health to children, because about one billion children worldwide spend greatest and effective part of their day in schools...' is not depth discussed.

Page 10 - Third paragraph

Dental plaque was only associated with age, however it is discussed that 'the present study demonstrated that age, gender, and dental pain in the past year were derived predictors'. A paragraph discussing the difference between the results for dental plaque and caries would qualify the study, as well the following sentence: 'In addition, being female was found to increase the chance of DMFT and dmft by 1.703 times and 0.475 times, respectively.'

Page 11 - Second paragraph

The paragraph contradicts the results, since education is not associated for your study. I suggest to suppress.

Page 11 - Third paragraph

Indicating only the design of the study as limitation, evidence the poor development of this paragraph.

Conclusion:

The conclusions should clearly answer the objectives.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.
No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.
No

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.
No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.
I am able to assess the statistics

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