Reviewer’s report

Title: Prevalence of Dental Caries and Associated Factors among 12 Years Old Students in Eritrea

Version: 0 Date: 26 Jul 2017

Reviewer: Cristiane Meira Assunção

Reviewer's report:

General comments:

The study put light on a serious dental health problem, in a developing country. The methodology is simple, and although presented small failures, did not take out the value of this epidemiologic data, for this country. The manuscript is well written, although a grammar review could improve it, the references are adequate.

I made the review of this paper, considering this it as a first important step to improve dental health in Eritheia. I hope the comments bellow could help the authors to improve this paper and also the methodology for future studies. A special attention to dietary and hygiene habits, access to fluoride water and dentifrices should be given in future researches.

Specific comments:

Abstract:

- Information about who were the examiners and their training are useful at Abstract too.

- Use at least 3 Mesh Terms as key words to improve the paper search at databases, you could put 'Dental Health Services' or 'Dental Health for Children' instead of 'Dental health utilization'.

Introduction:

- Background was well described, references adequate and recent.

- Please describe briefly the MDGs (write the full organization name) health goals numbers 5, 6 and 7, reported at text.
Materials and Methods:

- Is there any official data of how many students of 12 years old attempt to this region in Eritrea? This information could be useful to evaluate how representative was the sample. On the other hand, the sample size calculation is quite adequate, just 20% of losses (non-response rate) are more used than 5%.

- The proportion between students from rural and urban area was maintained close to reality?

- Data collection procedures: please clarify the training procedures made prior to examination to ensure the two examiners were qualified to perform the clinical examination and other data collection.

- Please describe better which data was collected, about dental appointments, dental pain, dental health services utilization. Was the children who answer these questions? Was used a structured questionnaire with these questions?

- Considering the adoption of masks, gloves and sterilized materials, the anti-infection rules were adopted. Please rewrite the statement, to clarify the sterilization procedure was made prior to clinical examination, and also after.

Results:

- The tables are self-explanatory, there is no need to repeat prevalence data at text. Just add the statistic test used on each analysis on the bottom of each table. All text written before 'Previous experience of dental pain and utilization of dental health facility' could be deleted, the information is already at tables.

- Is there any information about the dentifrice used? Is there any regulation that ensures that most of dentifrices should contain fluoride?

- Please explain better the local chew-stick used for dental hygiene, maybe a picture of it or with a child using could be interesting. Did the children use this chew-stick with any fluoride dentifrice? All participants who reported the use of toothbrush associate fluoride dentifrice?

Discussion:

- "...majority of the participants reported they clean their teeth unassisted which can substantiate the notion that the study participants were not cleaning their teeth effectively". At age of 12 it is expected that children will be able to clean their teeth by themselves. The
poor hygiene could be discussed using the gums problems related, utilization of others devices instead of toothbrush.

- In Brazil, we have some laws about the obligation of fluoride content in water, and also in dentifrices. Is there any parameter that should be followed in Erithea? The access to fluoride could be better discussed.

Conclusions:

- There are some statements in conclusion that fit better at discussion section, as below: "Water source in both locations was below optimum fluoride level for protective effect against dental caries. The suboptimal water fluoride level along with the poor dental service utilization and unhealthy consumption of food items is presenting a big challenge to the children's dental health condition"

- Write the conclusion to fit with objectives, describing the high caries prevalence, low access to dental health care and fluoride.

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.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

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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Please indicate the quality of language in the manuscript:

Needs some language corrections before being published
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