Reviewer's report

Title: Dental caries among children visiting a mobile dental clinic in South Central Kentucky: a pooled cross-sectional study

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Reviewer: Leonard Crocombe

Reviewer's report:

This is interesting cross-sectional study of dental caries a convenience sample of children who visited a mobile dental clinic in South Central Kentucky.

I have a few suggestions to make which will improve this paper.

Major Compulsory Revisions:
- The Conclusion to both the abstract and the paper itself mentions the importance of dental hygiene education and improving access to dental care, these two factors are not conclusions or findings from this study. These two issues may be important, but if so, they should be mentioned in the discussion section and not in the conclusions or at the start of the discussion section as they currently are.
- The readers need to be informed of what type of clinical examination was undertaken, what instruments were used, whether X-radiographs were regularly always or never used, and whether the two examiners were calibrated.
- In the discussion section, other than mentioning it could be a result of shortcomings in your study, you do not conjecture on why rural children may have more untreated dental caries than metropolitan children, e.g. Water fluoridation is less common in rural areas than capital city areas, differing attitude to health, more likely to be of lower socioeconomic status.
- You have not compared your results with results from other studies, and conjectured on why they may be different, in the discussion section.

Minor Essential Revisions:
- The study uses odds ratios rather than prevalence ratios. The former are less accurate with small sample sizes. Why odds ratios was used should be explained in the limitations to the study.
- The first two paragraphs in the data analysis section are difficult to read. The classification into caries and non-caries groups and then into three caries groups should be handled at the same time.
- The OMB definition of metropolitan and rural status would not be known to many readers and should be explained.

Minor Essential Revisions
- Two sentences in the second paragraph of the background section could be
better phrased. For example, to some people having missing teeth may not be seen as a problem, and rather than a solution to an aching tooth, in the third sentence I would have the phrase “reaching the age of five years (not 5)” after the phrase “early childhood dental decay.

- In the fifth and six paragraphs of the background section, the authors mention lower or no cost when obviously someone has to pay. I suggest it be made clear that it is at lower or no cost to the parent, carer or guardian.

- In the fifth paragraph of the background section, the authors use the word “ideal” to describe the school-based mobile dental program. I suggest that very little in the real world is ideal and that it may be wise to tone down this word.

- In the first paragraph of the methods section, use second and seventh instead of 2nd and 7th.

- Sentences shouldn’t begin with a number. There are a few such sentences in the first paragraph of the results section.

- In second paragraph of the results section, the authors note that the age, insurance status and sex were significant but not for what (dental caries). I suggest also using the terminology of statistically significant.

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

**Quality of written English:** Needs some language corrections before being published

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

**Declaration of competing interests:**

I have no competing interests