Reviewer’s report

Title: Assessment of factors influencing Hygiene Behavior among School Children in Mereb-Leke District, Northern Ethiopia: A cross-sectional study

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Reviewer: Giovanna Raso

Reviewer’s report:

General comment
The authors have conducted a cross-sectional study to assess factors influencing hygiene behaviour among school children. The work done is interesting, however additional language efforts (grammar and style) need to be done throughout the manuscript. Apart from editing issue I have summarized several points below that need attention for a revision.

Major Compulsory Revisions

Introduction:
1. There is clear effort made by the authors to elaborate on the current literature. However, the introduction is too wordy and contains many repetitions. I believe this section could be shorter. It needs also improvement on grammar and style as mentioned above.

2. It would be interesting to introduce the terms that are used in the results section already in the introduction in order to give a clear structure to the manuscript (predisposition, and enabling motivational factors).

Methodology:
3. More effort needs to be done to explain how the questionnaire survey was done and how the observations were done. It is currently not clear in this section (though I realize that some information comes later in the results section). Did all 500+ children answer the questionnaire and then household visits with a checklist were done on the 200+ children? This should be mentioned here.

4. More effort should be made to explain what kind of information was collected. No access to the questionnaire and checklist was given. This would have helped to understand and assess better the methodology section.

5. Please explain what was checked for in the households. Provide the checklist as annex if possible.

6. Why did you choose this particular cut-off of 9 questions to decide what is a positive hygiene behaviour? What was the maximum score possible?

7. It would be important to work with the same terms (predisposition, and enabling motivational factors) used in the results section and if possible to have them introduced in the introduction or the latest in the methodology section (see above and below comments)
8. Data analysis: There is mention of a Chi2 test, however none of these results are presented. I believe this is a typo and it should be replaced by logistic regression; this would match better with the relationship analysis mentioned in the sentence. In general, I believe that the analysis section needs to be reformulated, it can be much shorter given that only logistic regression was utilised. For example.....Binominal regression models were utilised to assess the relationship between predisposing factors (knowledge or awareness) and hygiene behaviour (positive or negative). The models were also adjusted for sex and ????. Model results were presented as crude and adjusted odds ratios with corresponding 95% confidence intervals. In addition bivariate logistic regression models were used to assess a relationship between observed behaviour and hygiene enabling (i.e. ......) or motivational factors (i.e. ......). Model results were presented as crude odds ratios with corresponding 95% confidence intervals.

9. I also realize that in the results and discussion there is mention of multivariate models (are these the adjusted logistic regressions?).... this should of course also be introduced that way in the statistical analyses section to make it clear....

Results:

10. Give p-value of the difference between female and male group frequencies.

11. Give standard deviation of the mean age.

12. It is not always clear how terms are used. In the results section new terms, i.e. predisposing, enabling and supportive factors are introduced. I believe the authors should introduce terms in the introduction or methods section and then stick to the same terms in the results and discussion section. This will help with readability of the manuscript.

13. Table 1: Please add a footnote to explain what variables were included in the adjusted model.

14. After Table 1: It is not clear to me what was done to develop the models given that these are bivariate models... The authors are referring to multivariate logistic regression do they refer to the adjusted model results in Table 1?

15. Section on hygiene enabling factors: these explanations on how the sampling was done should be made clear already in the methods section (see comment above) and thus would not be necessary in this section. This will help with readability of the manuscript.

16. It would be important to have statistical analysis via logistic regression assessing relationship between these factors and hygiene behaviour, this will make the results section sound and contribute towards completeness of analyses. Results of the regressions could be added in Table 2.

17. Analysis Table 3: I suggest to add results of the logistic regressions in Table 3 as it was done for Table 1.

Discussion:

18. More effort should be done by authors to discuss the results. This mainly repeats or summarizes the results instead.
19. Results from statistical analysis i.e. p-values, etc should not be repeated in the discussion.

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

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

No competing interests.