Author’s response to reviews

Title: Prevalence and factors associated with undernutrition and anaemia among school children in Durbete Town, northwest Ethiopia

Authors:

Tilahun Alelign (tilalewa@gmail.com)
Abraham Degarege (abrahamdegarege@yahoo.com)
Berhanu Erko (berhanu.erko@aau.edu.et)

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Author’s response to reviews: see over
Response to the reviewer comment

We thank the reviewer and editors for the constructive comments you have made towards the improvement of this manuscript. We have taken all of your comments and revised the manuscript accordingly. Point by point response to the reviewers’ concerns is listed below.

Major Compulsory Revisions

Materials and methods

1. It is important to specify the age range the children in your sample.

Corrected as suggested. The age range is specified in the revised manuscript (page 4 line 89).

2. In the “Nutritional Status” paragraph, besides including the reference for the nutritional status classification, it is important to mention that this classification is according to the WHO Growth Standards.

Corrected as suggested. Information that the nutritional status classification is made according to the WHO Growth Standards is included in the revised manuscript. (page 5, line 125 & 126)

3. In the “Haemoglobin level determination” paragraph, I recommend to define anaemia or anaemic status to the readers, based on the cut-off points for age from your reference.

Corrected as suggested. Anaemia is defined to the readers, based on the cut-off points for age in the revised manuscript (page 6; line 135 and 136).

4. In the “Data analysis” paragraph: • Did you estimate the prevalences of undernutrition and anemia? You did not mention that and is your main objective. • Did you stratify the prevalence analyses for age or sex? • Looking at the tables I’m confused about the chi-square test that you conducted. You are presenting the results of a chi-square test in Table 1 and according to the title this table is not related with the association of intestinal helminth infection.

Corrected as suggested. The prevalence of undernutrition and anemia were determined and clearly mentioned in the data analysis section of the revised manuscript (Table 1. The prevalence
is stratified by age and sex and the difference is tested using z-test. The results are presented in table 1 of the revised manuscript (page 6, line 142 & 143).

5. The data analysis segment needs a more detailed description of the statistical analyses that you conducted.

**Corrected as suggested.** Detail description is now provided about the statistical analyses conducted in the revised manuscript.

**Discussion:**

6. In the first paragraph, 5th line: I am confused: You state that “male sex and older age children were at risk of being stunted”. This statement is based on the difference in the prevalence? Or did you estimate an OR specifically for stunting? If so, why didn’t you include it in the tables?

**Corrected as suggested.** We have tested the impact of sex, age, helminth infection and other socioeconomic factors on the risk of being stunted, underweight and undernutrition using three different multivariable regression model. However, we do not included the results for the risk of stunted and underweight in table 2. It will make the table junkier. In addition, except for age and sex most of the factors did not showed association with the risk of being stunted and underweight. Thus, we prefer to mention the result in text. (Page 8; line 168-170 & line 173 - 176)

7. In general, the discussion could be improved including policy and public health implications of the results obtained.

**Corrected as suggested.** The discussion section is improved. Policy and public health implications of the results also indicated (page 11: line 255 to 259)

**Conclusions:**

8. I think that saying that undernutrition and anaemia represent moderate and low public health problems could be misunderstood and could lead to underestimate the problem. How does this study contribute to public health strategies in Ethiopia?

**Corrected as suggested.** The statement which read as ‘undernutrition and anaemia represent moderate and low public health problems’ is revised as ‘Undernutrition and anaemia are public
health problems of school age children in Durbete town’ in the revised manuscript. The public health implication of the current study is included in the revised manuscript (page 11; line 255 to 259).

9. In the background, the authors stated that “information about risk factors is helpful to design integrated, timely and appropriate strategies to control the diseases”; based on your results, what do you recommend to take into account for strategies development?

**Corrected as suggested. Recommendations based on the current results is provided in the revised manuscript** (page 11; line 255 to 259)

- **Minor Essential Revisions.**

**Abstract**

10. In the third line of the first paragraph please correct “were assessed” instead of “was assessed”.

**Corrected as suggested** (‘was assessed’ is replaced with ‘were assessed’, line 39)

11. The methods section should include a sentence describing the statistical analyses conducted.

**Corrected as suggested.** Method describing statistical analysis is included in the revised manuscript, line 45 &46)

12. The results could be clearer for the reader if you interpret the odds ratios.

**Corrected as suggested.** The results of the odds ratio are interpreted in the revised manuscript.

**Background**

13. I suggest to specify the ages of the children (under-five, school age children?) in the evidence that you cited in the background. Specifically in the evidence on undernutrition in developing regions that you included in the third line of the first paragraph of the background and the evidence in underweight, wasting and stunting in Ethiopia in the sixth line from the second paragraph.

**Corrected as suggested.** The ages of the children in the evidence cited in the background is now provided in the revised manuscript. (page 3; line 66 & 67, line 78 &79).
14. In the second paragraph of the background, regarding reference 12, I tried to review the criteria used for this classification but I could not find these facts in the reference cited. Please check if the references are correct.

**Corrected as suggested.** Reference 12 is replaced with a different reference in the revised manuscript.

15. In the tenth line of the second paragraph please correct “multifactorial”.

**Corrected as suggested.** The word multifactorial in the revised manuscript is replaced with ‘heterogeneous’ (page 4, line 82).

16. In the 13th line of the second paragraph please correct “were assessed” instead of “was assessed”.

**Corrected as suggested.** The phrase ‘was assessed’ is replaced with the phrase ‘were assessed’ in the revised manuscript. (page 4; line 85).

Materials and methods

17. I recommend to detail the socio-demographic variables that you adjusted for in your analysis. How did you assess the socio-economic status?

**Corrected as suggested.** Detail of the socio-demographic and socio-economic variables used to adjust for analysis are provided in the revised manuscript (Page 5; Line 106-108).

18. Regarding ethical considerations, did the children and parents sign an informed consent? If so, I suggest mentioning that.

**Corrected as suggested.** The children and parents sign an informed consent and this is mentioned in the revised manuscript. (Page 7; line 153 to 155).

Results

19. A table 1 with the description of the sample of the study could be very informative. We don’t know anything about the SES distribution, the age distribution of the sample nor any of the socio-demographic variables that you included in you logistic regression.
Corrected as suggested. A table 1 describing the characteristics of the study participant is now provided in the revised manuscript.

20. In the first paragraph of “Results”, in the lines 4-5, include the p value when you describe a significant or no-significant difference between groups.

Corrected as suggested. P-value included in result section of the first paragraph. (page 7, line 161 to 165).

21. As I suggested in the abstract, it could be easier to understand if you interpret the OR for the reader and maintain parallelism when presenting the results. Include the estimators (OR) and the 95% CI for all the variables that you are mentioning in the results.

Corrected as suggested. The Odds ratio for the result is presented in the revised manuscript.

Discussion

22. I think you should include a reference after the last sentence of the second paragraph “However, some regions of the country exhibited high prevalence…”

Corrected as suggested. Reference is included in the second paragraph of the revised manuscript (page 9, Line 198& 199; Reference 17 to 20)

23. Fourth paragraph, line 4: STH: What does this acronym refers to? You have not defined it previously.

Corrected as suggested. STH is defined in the revised manuscript as soil transmitted helminth (line 230, 231 and 249)

Conclusions

24. In the third line, correct “stunted” instead of “stunting”.

The word describing stunting and underweight is removed in the conclusion section.

25. As I mentioned before, I think it could be interesting to include a table 1 with the descriptive characteristics of the sample.

Corrected as suggested. A table 1 describing the characteristics of the study participants is provided in the revised manuscript
26. In table 1: • Include “stratified by sex and age” in the title. • Why didn’t you include the overall prevalence of undernutrition and anemia? • I suggest to clarify in a footnote what is the chi-square test proving.

Corrected as suggested. Table 1: we have included in the title the phrase ‘stratified by sex and age’ and the overall prevalence of undernutrition and anemia in table 1. The chi-square is removed in the revised table 1.

27. In table 2: • The title is not clear for the information that you are presenting in the table. The current title suggest that you are presenting the prevalences of intestinal helminth infection, undernutrition and anaemia, but you are presenting the adjusted OR’s. Maybe it could be: Associations of intestinal helminth infection, sex and age with undernutrition and anemia. • It is important to clarify to the reader how are the socioeconomic variables defined. It could be in the methods section or as a footnote to the table. How did you defined the hand washing habit?

Corrected as suggested.

The title for table 2 is revised as ‘Association of intestinal helminth infection, sex and age with undernutrition and anaemia’. Socioeconomic variables are defined in the method (line 106 to 108). Hand washing habit in table 2 is defined as hand washing habit before eating in the revised manuscript.

- Discretionary Revisions Materials and methods

28. What was the response rate of the study?

Corrected as suggested. The response rate of the study is more than 95%. (Result: line 159 & 160)

29. I suggest to include the reference or model of the scale

Level of interest: An article of importance in its field

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

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
I declare that I have no competing interests