Author’s response to reviews

Title: Prevalence and associated factors of anemia among adolescent girls attending high schools in Dembia District, Northwest Ethiopia, 2017

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Author’s response to reviews:

Second Review

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With regards!

From: Kedir Abdela Gonete
Corresponding author

Author's response to editor and reviewers:

To: Archives of public health, Editorial Office
Subject: submitting the revised manuscript

Object: Manuscript ID= AOPH-D-18-00073

Point by point responses
We would like to thank the editor and reviewers for sharing their view and experience. The comments are very important which will improve quality of our manuscript. The responses for the given comment and the revised manuscript are provided in the attached documents.

Reviewers and editor Comments:

Comments from Reviewer #2

Thank you to the authors for addressing the comments. I have no further comments.

Response

We are also thanks for reviewer who are thoroughly review my manuscript.

Comments from Reviewer #3

Background: the previous comment about nutritional and non-nutritional causes of anemia was partially addressed. The background is still very iron centric in focus. Suggest looking at the Namaste and Suchdev papers in Journal of Nutrition if this is not clear.

Response

Thank you very much for this interested comment. Dear reviewer, as you have described in the comment the background parts were more focused in iron causes of anemia but there are different causes of anemia. Therefore we are assesses the nutritional and non-nutritional causes of anemia in the background parts of the revised manuscript. Furtherly you can cross check from the attached track changes and the original manuscript.

Comments from editor

Response

Do not add your reply to the reviewers and editor as supplementary material. Supplementary files are not visible in the "open peer reviews reports" on the website. You have to bring them in the box during the resubmission process.

As the reply to the first submission are given in a supplementary file, please bring them in the same box, after the text to the current reply, and indicating that this is the first reply.

Thank you very much and we had submitted point by point responses on box.

Thank you and the first and the second responses are submitted in the free box with order of current reply first and the first reply with second order.

First Review

Kedir Abdela Gonete (KAG): kedirabdela33@gmail.com

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Point by point responses

We would like to thank the editor and reviewers for sharing their view and experience. The comments are very important which will improve quality of our manuscript. The responses for the given comment and the revised manuscript are provided in the attached documents.

Reviewers and editor Comments:

Comments from Reviewer #1

Comments 1: Abstract: the introduction must highlights both sex prevalence rate then specifically why adolescent girls are more vulnerable to the anemia in Ethiopia, and why Dembia district was chosen?

Response

Dear reviewer, thank you very much for this interested comment and we are included the causes and the response of why the research is focuses on female adolescents in the revised manuscript.

2. In conclusion: The Author did not highlight the integration of program and policy to overcome inadequate dietary diversification?

Response

Thank you a lot and we have tried to integrate the dietary diversity with the programs and policy in the revised manuscript.

3. On the page 3 background: The Author should provide more details on how mental development can reduce iron to the adolescent girls?

Response

Dear reviewer, thank you very much for this comment and we have included how the level of iron is affected the mental development in this revised manuscript.

4. On page 4 same page: the author mentionned the determinants, what about

Response

Thank you and one of the factors that affects our level of anemia are related to blood loses because of
the prevalence of unwanted pregnancies among adolescent girls at district level as well as national level.

menstruation, abortion (unwanted pregnancy) and others. In this study, the pregnant adolescent girls were not part of inclusion criteria because of the physiological changes but unwanted pregnancy were assessed during data collection especially those who were made abortion. However, the adolescent girls were not practice abortion before the data collection.

5. On the data collection procedures page 5: the families were interviewed about socio demographic and economic char characteristics how confidence does author have to validate about house hold food security?

Thank you very much for this attractive questions and the Food security questionnaire were adopted from standardized food security questionnaire from FANTA 2007 with 9 main and 9 frequency questions used to collect data. The tool were raised the question for the past one months and were summed out of 27. Therefore, to avoid the validation problem we were used the standardized tool.

6. In results section page 9: the author mentioned 8.2 adolescent were in menstruation, if I checked very well is therean evidence shows the adolescent girls who presented an anemia without other conditions like parasitic infectious?

Thank you very much for this careful sight and Anemia is the long time effect of different factors like blood lose (menstruation, injury), parasitic infection (hook worm), in adequate dietary diversity(less iron rich foods), food insecurity etc and we were included in the tool with self interviewed questionnaire for the adolescent girls but no one had a history of intestinal parasite in the past two weeks during the data collection time. But in this study Dietary diversity, food security, living status were significantly associated to anemia but chronic disease, infections (malaria) and intestinal parasite were not associated.

7. The author classified adolescent girls in two types, the second one between 17-19 years old are in full growing up is there an argument that can increase use of iron than others even opposite sex?

Thank you very much and as you have mentioned, different literatures discussed in different assumptions, but in our studies, we are stands based on WHO growth curves and says adolescents are the second most fastest growth next to infancy. And from 10 to 14 years, the growth curves had a slight incensement but from 15 to 19 years there is fastest growth and development and they needs special nutrients. Therefore, from 17 to 19 years in both sexes they need high amount of energy and different micronutrients. In the other view, in this age, majority of the adolescent girls are beginning the menstruation (because of this, the level of iron/hemoglobin will decreased) and the ongoing pregnancy. So the physiological changes need some
extra amount energy and micronutrient (especially the iron one).

Comments from Reviewer #2

Response

It is very well described, especially methodology and sampling. However, the language is broken and there are a lot of spelling as well as grammatical mistakes which at some places, makes sentences difficult to understand. Needs a thorough language check.

Thank you very much reviewer. Dear reviewer, We have made language edition throughout the manuscript by two English experts for the revised manuscript.

-For study participants and sampling procedure p. 5: Have you considered making a flow diagram of the sampling and exact numbers of excluded/included participants (e.g. at the end of this section, the sentence "Adolescents who were pregnant and on treatment for anemia were excluded.", how many are those?

Thank you very much and yes we are used appropriate sampling methods and unfortunately, we are not found the pregnant adolescent girls in the schools and pregnant mothers are not a source population for us. But as criteria we are putted in the section of study participants and sampling procedure as exclusion criteria.

And do you have data on some baseline characteristics of those not included in the study to compare whether or not they were different than those who responded and are included in the study?

Thank you very much and our research is a type of cross-sectional study and we are only collected one times data because of feasibility issue. And also our data were included the schools who are almost similar socio-economic, similar jobs like students and all schools are the government schools. But in our country including the study setting has no any archives data for comparing those not included in the study. Therefore, it is difficult to comparing the respondents with not include the study.

And have you considered presenting these baseline characteristics (tables 2-5) per exposure group? Those with anemia and those without, and possibly then those with different severity stages of anemia.

Thank you very much and we are doing exposed and non exposed groups for some covariates which are fulfills the bivarietes and presented in table 6 but from table2 to 5 we are only focuses the descriptive variables that shows frequency and percentage because of our aim was to assess the prevalence and associated factors of anemia.

-On choice of characteristics and information on

Thank you very much for this interested
the sample population, was it possible to collect smoking status of these girls? Might be relevant in relation to Hb levels just as menstruation is.

On p.6 at the start of the section "Description of variables": Very well described variables and clear what each means. When anemia was defined under 12 g/dl, please state the reference, is it according to WHO definition? The same applies on p.10 under "Prevalence of anemia": what are the cut-off values you based your categorization of severity stages on?

Lastly, I would encourage you to look into the issues surrounding using ORs as estimates in a cross sectional study, caution needs to be taken in the way it is interpreted, where language that states "risk" in any way should be avoided, since in cross sectional studies, both exposure and outcome are measured at the same time. Alternatively, prevalence ratio (PR) is suitable, however the 2 are often confused between, and ORs might give and over or under-estimation of the true associations depending on the prevalence of the outcome (25% here). I refer to this article: Martinez BAF, Leotti VB, Silva GS, Nunes LN, Machado G and Corbellini LG (2017) Odds Ratio or Prevalence Ratio? An Overview of Reported Statistical Methods and Appropriateness of Interpretations in Cross-sectional Studies with Dichotomous Outcomes in Veterinary Medicine. Front. Vet. Sci. 4:193. doi: 10.3389/fvets.2017.00193

Comments from Reviewer #3
Page 3 Line 18 - There are nutritional and non-nutritional causes of anemia

Thank you very much for this constructive comments and as you have described in the comments, there are nutritional and non-nutritional causes of anemia and we are try to included some causes of anemia in the background part and we are more focuses based on our tools that must be addressed. Thank you.

Page 3 Line 40 - suggest adding kassebaum 2016 reference

Thank you very much for this interested publication and we have added global burden of anemia with Kassabum 2016 in the revised manuscript.

Page 4 Line 4-6 - sentence is not complete

Thank you very much and the sentence is corrected and writes completely in the revised manuscript. Dear reviewer, We have made language edition throughout the manuscript by two English experts for the revised manuscript.

Seasonality can influence anemia prevalence. Suggest including this in the discussion

Thank you and we have revised the concept of seasonality difference anemia in the discussion part.

External validity of findings for other contexts in Ethiopia. What can be said based on the geography, SES, etc relative to other settings in country?

Thank you and as you know the cause anemia are nutritional and non-nutritional factors. In our country anemia more cause with lack of iron rich foods, environmental factors like hook worm and altitudes has one of the factor for increasing the hemoglobin and Hb adjustment must do. In the other view socio economic status are the other factor for developing anemia because as you observe from the finding middle and poor tertile wealth are more affects for anemia because of lack of the diversified foods and food insecurity. And according to the study conducted in title: Seasonal variation in nutritional status and anemia among lactating mothers in two agro-ecological zones of rural Ethiopia: A longitudinal study the finding showed The prevalence of anemia increased from postharvest (21.8%) to preharvest seasons (40.9%). Increases were from 8.6% to 34.4% in midland and from 34.2% to 46.3% in...
lowland agro ecological zones. Of the mothers, 15% were anemic during both seasons.

Editorial comments

Abbreviations tables should be written first in full text (see WASH, Fanta, BAZ)

Table 2 to 5 should be presented as supplementary information, but presented by anemia status and crude OR

Text should be revised for language and form

Consider the remark of reviewer#2 regarding the prevalence rate ratio’s which may be more appropriate given the high prevalence of anemia

Response

Thank you very much the editor. Dear editor, the comments are accepted totally and we have made a correction in the revised manuscript.

Dear editors thank you and from table 2 to 5 we are described the frequency and percentages of some determinant factors of anemia and as this time crude OR with anemia status is not important. But in regression table 6 we are putted AOR and COR with anemia status.

Thank you very much editor. We have made language edition throughout the manuscript by two English experts in the revised manuscript.

Thank you editor. Prevalence ratio are more appropriate in some conditions. As you know cross-sectional are dilemma and we couldn’t decide which comes first whether the outcome or the exposed one. During prevalence ration the exposed must be comes before the outcome and the sample size slightly increases during prevalence ratio. That is why we are focuses to estimate with odd ratio.