Reviewer’s report

Title: Prevalence and associated factors of goiter among rural children age 6-12 years old, Northwest Ethiopia, Community Based Cross Sectional Study

Version: 2 Date: 20 December 2013

Reviewer: Afework Mulugeta

Reviewer’s report:

Comments
A. Overall
First review
1. Overall comments This study presents data on the prevalence of goiter and its associated factors in 6 – 12 years old children from Lay Armachiho district, Northwest Ethiopia. Although the data set is a reasonable size and the study contains useful information on the severity of chronic iodine deficiency, it falls short of providing evidence of current iodine deficiency in the study communities. The authors need to provide strong justification of their deviation from using all the recommended quantifiable indicators for assessment of IDD, as recommended by the joint WHO/UNICEF/ICCIDD consultation.

Re-review:
Not addressed. Would suggest just a statement as to why they opted for goiter and rapid test kit but not UIE.

B. Major Compulsory

2. Sample size
First review:
Given the wide variation in the sample size between this study and other similar IDD studies, I would favor of including strong justification if the results will guarantee a good precision around the estimate of chronic iodine deficiency prevalence in the study communities.

Re-review: Addressed

3. Systematic random sampling:
First review:
The authors indicated that they have used systematic random sampling to select the households. But, they failed to mention or calculate the sampling interval and indicate the sampling frame used. At the same time, they mentioned that they have used the EPI method to select the households. The EPI method is used when random or systematic random sampling is not possible to select the households (e.g. if there is no list of households). This confusion needs to be
addressed in their paper.
Re-review:
Not addressed. Would suggest the sorting out of the confusion.

4. EPI Method:
First review:
Though not clearly mentioned in their paper, the authors have used EPI Method to select the households. Although, this method is simple and rapid (the time taken to select the sample and move from house to house is far less), it results in a somewhat biased sample, as households closer to the center of the village (in this case, the kebelle administration office) are most likely to be selected. The way the households were selected is not clearly articulated even in the EPI method. For example, after spinning the pencil on a book, the data collectors will decide on the direction to proceed towards the households. But, how the first household and subsequent households were selected is not clearly articulated in the paper.
Re-review: Addressed

5. Originality:
First review:
How does this study differ from other studies - i.e. what were its strengths and limitations compared to other studies from similar setting? What are their recommendations regarding the high prevalence of chronic iodine deficiency in the study communities?
Re-review:
Not addressed. Would still suggest the inclusion of limitations and strengths of the study.

C. Minor Essential Revisions
6. Background in the Abstract
First review: I don’t think that chronic iodine deficiency is a major public health problem of populations throughout the world. May be, it is good to qualify this statement.
Re-review: Addressed

7. Objective in the Abstract
First review:
Separate the background and objective sections of the abstract. There must be a standalone section for objective in the abstract.

Re-review: The aim of the study was to assess the prevalence and associated factors of goiter among rural children aged 6-12 years, Northwest Ethiopia.
8. Conclusion in the Abstract
First review:
The last statement can be rewritten as it is a mere duplication of the result section and would be good to include recommendation of the study as well.
Re-review:
This part can be rewritten as (optional): Chronic iodine deficiency was a severe public health problem in the study communities. Ensuring the use or consumption of iodized salt and promotion of fish intake at the household level are highly recommended.

9. Background
First review:
The stated objective of the study is to assess the prevalence and associated factors of goiter among rural 6-12 years children. So, it would be better if the background focused on goiter, its predictors and public health implications.
Re-review: Addressed

10. Abbreviations
First review:
These should be given in full when first mentioned in the text and the list of Abbreviations should be omitted.
Re-review
Addressed

11. Sampling technique
First review: Multistage sampling involves a number of stages. For example, two stage sampling starts with the first stage where a number of clusters (collections of individuals or households) are randomly selected. The second stage is when individuals or households are randomly selected within each cluster. But, the authors failed to mention the actual number of staging that they have used in their study.
Re-review: Not addressed. Would suggest the mentioning of the actual number of staging.

12. Study subjects
First review:
The authors failed to mention how children were selected when more than one 6 – 12 years old child was found in a given household.
Re-review
Addressed.
13. Pages 3, 6:
First review: Make sure that reference ranges are used for the same information. Better to report as “it was 22.3% in southern Blue Nile area of Sudan (12), 11.4 % in Jodhpur district of Rajasthan (13) and 20.5% in India (14)” than “it was 22.3% in Southern Blue Nile area of Sudan, 11.4 % in Jodhpur district of Rajasthan and 20.5% in India (12-14)”.
Re-review: Addressed but not all.

14. Page 6
First review:
It was not clear how the authors know that their results were similar with studies from Ethiopia 39.9% (95%CI: 38.6%, 41.2%) and Sudan(38.8%), higher than those from South Africa (25.5%), Southern Blue Nile area of Sudan (22.3%), India (20.5%), Rajasthan (11.4%), Amhara region (29.1%) but lower than study reports from Islamabad (71.6%) and Ethiopia (53.3%)? Only point estimates but not confidence intervals were given for each of the papers cited.
Re-review: Addressed.

15. Page 7
First review
The first justification for the higher prevalence of goiter in females than males needs a serious scrutiny. The justification given by the authors implies that female children from the study communities are differentially treated towards iodized salt.
Re-review: Addressed

16. Page 7
First review
The second justification for the higher prevalence of goiter in females is the pubertal age. First and foremost, the children were 6 – 12 years of age. Secondly, no data was collected on age of puberty. Third, the authors cited no reference to support their claims.
Re-review
Addressed

17. Reference number 15
First review: YB is Yemane Berhane.
Re-review:
Not addressed

18. References
First review:
The authors are advised to use up-to-date references in the field.

Re-review: Addressed

19. References A consistent style is required. Adressed

Level of interest:
First review
An article of importance in its field
Re-review: An article of importance in its field

Quality of written English
First review
Not suitable for publication unless extensively edited
Re-review: Needs some language corrections before being published

Statistical review
First review: Yes, and I have assessed the statistics in my report.
Re-review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests
First review: I declare that I have no competing interests
Re-review: I declare that I have no competing interests

What next? Accept after minor essential revisions (which the authors can be trusted to make).

**Level of interest:** An article of importance in its field

**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.