Reviewer’s report

Title: Predictors of undernutrition among the elderly in Sodo zuriya district Wolaita zone, Ethiopia

Version: 1 Date: 06 Aug 2019

Reviewer: Reviewer 2

Reviewer's report:

PEER REVIEWER ASSESSMENTS:

OBJECTIVE - Full research articles: is there a clear objective that addresses one or several testable research questions? (Brief or other article types: is there a clear objective?)
Yes - there is a clear objective

DESIGN - Is the current approach (including controls and analysis protocols) appropriate for the objective?
No - there are minor issues

EXECUTION - Are the experiments and analyses performed with sufficient technical rigor to allow confidence in the results?
No - there are minor issues

STATISTICS - Is the use of statistics in the manuscript appropriate?
Yes - appropriate statistical analyses have been used in the study

INTERPRETATION - Is the current interpretation/discussion of the results reasonable and not overstated?
No - there are minor issues

OVERALL MANUSCRIPT POTENTIAL - Has the author addressed your concerns sufficiently for you to now recommend the work as a technically sound contribution? If not, can further revisions be made to make the work technically sound?
Maybe - with major revisions
GENERAL COMMENTS: Thank you to the authors for responding to the majority of my comments. However, the authors seem to have made very few changes to the manuscript to reflect these comments. Also, the following comments were not responded to:

Did the authors take time of year in which the data were collected into account, or whether participants owned land and grew their own crops?

Is there a reference for the Dietary Diversity Score? Has it previously been validated?

The results section of the Abstract has been changed and no longer reads well:
"On multivariate logistic regression, education (AOR=2.09), marital status (AOR=2.02), history of decline in food intake (AOR=2.1), smoking (AOR=4.9) and monthly income (AOR=7.5) were found to be significantly positively associated with undernutrition at p-value less than 0.05.

I suggest the authors specify that being unable to read and write, not being married, and monthly income < $20 are the factors positively associated with undernutrition. Please can the authors also ensure this is the case throughout the manuscript, including the Results and Discussion section. Currently the direction of association of education, martial status and income with undernutrition is unclear.

REQUESTED REVISIONS:

In addition to my comments above, the authors should also address the following comments I have made about their responses:

Reviewer: How representative is the sample of Ethiopia as a whole?
Response: Although it is not national level survey, we can say that the sample can represent the southern region of Ethiopia.
Reviewer: What evidence is there that it is representative of the Southern region? Please can authors update the manuscript accordingly to comment on representativeness of the sample?

Reviewer: How many people were excluded from the study?
Response: 5
Reviewer: Please update the manuscript to include this information.

Reviewer: What about oral and dental problems as predictors of under nutrition?
Response: The study was focusing untouched risk factors. It would have been good if we were considered it.
Reviewer: I do not understand the response given here. Please can the authors elaborate and mention in the Discussion that not examining oral and dental factors was a limitation.

Methods section
Reviewer: How they arrived the sample size needed is not clear.
Response: The sample size was calculated using a single population proportion formula. The assumptions were, estimated prevalence for undernutrition of elderly, 21.9% from study done in Gonder town, margin of error 5.0%, design effect of 2 and 10.0% nonresponse rate. Accordingly, the final sample size became 578. A multi stage simple random sampling technique were applied to select ten kebeles out of 36 kebeles. In the selected 10 kebeles there were 207 sub-Kebeles. Then we considered a proportional allocation to the sample size to allocate participant for each sub-Kebele, finally systematic sampling technique was used to select households included in the study. The sampling interval was calculated by dividing the total households in the selected sub-Kebeles of the Kebele by the final sample size, which gave every third household. Then after, the first household was selected from each sub-Kebeles, by spinning a pen, where the tip of the pen was pointed taken to be the first household. Then the sampling interval was added on to the first household to identify the consecutive households.

Reviewer: Please update the manuscript to include this information.

Reviewer: The exclusion included "seriously ill" people. How was this defined and measured? Would people with major illness causing weight loss e.g. cancer, heart failure etc. excluded?
Response: Those who were unable to communicate due to sickness were considered as seriously sick. Moreover, this study involved height measurement that requires being on barefoot, legs straight; shoulders relaxed and maintain an erect position. Those who were unable to do so were excluded.

Reviewer: So the authors did not have information about specific illnesses of participants? Please update the manuscript to include how 'seriously ill' was defined in relation to exclusions.

Reviewer: It is unclear how dietary data were collected. Was this a 24 hour food diary?
Response: Yes, it was a 24 hour food diary.

Reviewer: Please can authors add this information to the manuscript.

Result section
Reviewer: How was mild, moderate and severe under nutrition defined?

Response: We classified malnutrition using subjective global assessment form (SGA). Which is validated tool to classify malnutrition clinically. Accordingly Mild under nutrition: no decrease in food/nutrient intake; <5% weight loss; no/minimal symptoms affecting food intake; no deficit in function; Moderately malnourished: definite decrease in food/nutrient intake; 5% - 10% weight loss without stabilization or gain; mild/some symptoms affecting food intake; Severely malnourished: severe deficit in food/nutrient intake; >10% weight loss which is ongoing; significant symptoms affecting food/ nutrient intake; severe functional deficit.

Reviewer: Please can authors add this information to the manuscript with appropriate references.

Discussion section
Reviewer: The authors mentioned that sample size was smaller than needed. Therefore, what was the power of the study?
Response: We were trying to explain that the sample size was lower than the calculated due to non-response, we had 96% response rate. To avoid confusion we have deleted the single sentence. The power of the study was 80%.

Reviewer: Please can authors add detailed information on study power to the manuscript.

Figure 1

Reviewer: List any acronyms used in the footnote.

Response: Comment accepted and changes made.

Reviewer: If Figure 1 is not being used in the publication then I am satisfied with the reviews responses for the this Figure.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

No

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

No

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable
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Please complete a declaration of competing interests, considering the following questions:

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If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

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