**Reviewer's report**

**Title:** Nutritional Status and Associated Factors Among High School Adolescents in Debre Tabor Town, South Gondar Zone, Northcentral Ethiopia

**Version:** 0  **Date:** 15 Apr 2019

**Reviewer:** Rachel Krause

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The authors have done well in identifying the need for further research into a vulnerable time of development, adolescence, which tends to be overshadowed by work in fetal and young child development; however, current research identifies adolescence as a potentially significant period for catch-up growth, and therefore I find value in the authors' efforts in this study.

That said, there are revisions that need to be made in order for the value of this work to be fully realized.

Throughout, the writing needs to be significantly edited to improve clarity for the reader.

The abstract is far too long, and does not include key information about the variables tested. For example, giving adjusted odds ratios for sex does not indicate whether specifically being female (or male) is associated with greater odds of negative nutritional status.

There are discrepancies throughout about whether or not previous studies on nutritional status in Ethiopia exists, in adolescents or other populations - e.g. lines 81, 96-97, 244, 247-250268, etc. A clearer discussion of the existing literature is needed.

The purpose of the study needs to be better identified in the introduction of the paper (lines 100-102) - presumably there are lessons from this study that can be applied elsewhere regarding the types of factors that put adolescents at particular risk of undernutrition, and these should be identified for the reader.

Different types of malnutrition need to be better defined (e.g. lines 90-91). In particular, the authors have not discussed the differences between long-term, chronic undernutrition (typically resulting in stunting) versus shorter-term, more acute undernutrition (typically resulting in underweight), even though they have chosen to include both measures. These different measurements point to different types of risks for undernutrition and should be discussed, in both the introduction (in justifying their use) and discussion (in understanding the results from the logistic regression models).

Recruitment procedures and informed consent are discussed in the accompanying information about the manuscript (lines 316-328); this may be a preference of the journal, however it would be preferable from the perspective of the reader to have these directly in the text, in the methods section of the manuscript.
The methods section of the paper should state more explicitly what was asked in the questionnaires (lines 138-139). The authors only say that "relevant information" was collected on a variety of topics, but not what was considered "relevant." This would help the readers to understand what later was determined to not be associated with stunting and underweight, as well as to clarify what was actually collected (for example, "dietary conditions" is a meaningless term to the reader on its own). The specific measurements taken for anthropometry should also be explicitly stated, rather than "required anthropometry."

The statistical analysis described in the methods should explicitly state which variables were initially entered into the models. Some of this information is given in the results section (lines 215-219, 228-232) - this should be moved into the methods section of the manuscript. There also needs to be further explanation of the use of the Hosmer-Lemeshow goodness of fit test, including why this particular test was chosen and how results from this test were interpreted (lines 179-180).

The results reporting basic descriptive data about height and weight of participants should be reported by sex (line 195).

Figures 1 and 2 are unnecessary.

The interpretation of adjusted odds ratios is incorrect. For example, a variable with an AOR of 2.4 cannot be simply interpreted as leading to a 2 times greater likelihood of a given outcome. The authors need to rethink how they are discussing these results in the text (e.g. lines 219, 221, 223, 233, 236).

The discussion section needs to be further developed, taking into account the different processes that result in growth stunting versus low BMI, and incorporating further references to back up some of their explanations. There also needs to be a discussion of potential shortcomings or weaknesses of the study design, particularly with regards to the directions of different relationships.

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

Yes

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

Yes

**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:

Not suitable for publication unless extensively edited

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