Reviewer's report

Title: Food insecurity, school absenteeism and educational attainment of adolescents in southwest Ethiopia: a longitudinal study

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Reviewer: Sharon Kirkpatrick

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This is an interesting paper; however, further attention to the development of the rationale, the description of the methods, and the presentation and interpretation of the results could increase its potential contribution to the literature.

Major Compulsory Revisions

1. Given that food insecurity is the focus of the article, some brief details on the instrument used to assess it at the level of the household and adolescents, who it was administered to at each level, how the variables were coded, etc., are essential for the interpretation of the manuscript as a standalone piece of research (rather than simply referring to a prior publication).

2. What was the time frame for the food security measure? Does it match the follow up period of one year? Do most participants in the study experience chronic food insecurity punctuated by acute periods of hunger? What is being assessed by the scale and how might this affect the results?

3. In the background and discussion sections, please identify the context for the literature that is being cited. Most, if not all, of the papers used to make the case that food insecurity has negative implications for development and academic achievement are from the U.S. – it would be helpful to indicate that studies in developed/higher-income countries suggest this relationship whereas this issue has not been explored in developing countries or at least not in this study area (any data from lower-income countries on this issue that could help make the case?). It would also be helpful to distinguish between cross-sectional studies and longitudinal studies that support a causal relationship in describing the literature from the U.S. and other developed countries.

4. Still on the issue of context, the authors mention food stamps and breakfast programs in the discussion as being positively associated with academic achievement, again citing U.S. literature. What is the relevance of these programs to the Ethiopian context? Are there any similar programs? What specific recommendations would the authors make in terms of program or policy implications based on their findings?

5. The last few sentences in the first paragraph of the background (suggesting that the mechanisms by which food insecurity affects development is through reduced intake of nutrients) are overly strong and not supported by the available
literature. A number of studies have shown that children’s intakes are less affected than are adults in food-insecure households. Further, there are other mechanisms by which food insecurity could affect development, such as stress. This is an area that needs much more research given that how children experience food insecurity is a relatively new area of inquiry.

6. A very broad definition of food insecurity is given – it seems unlikely that the food security scale used measures all of the aspects included in the FAO definition. Please provide a more precise definition that better corresponds to the scale, or provide examples of the questions included in the scale to convey what was actually assessed. If a definition of food insecurity is included, it would be helpful to include it earlier in the paper.

7. Please explain the rationale for the inclusion of both bivariate and multivariate results. The presentation of the bivariate and multivariate findings is somewhat confusing because the two sets of findings are not clearly distinguished and how they should be interpreted is not made clear. For example, the first paragraph on page 6 makes the point that gender is a factor in absenteeism; however, this effect did not persist in the multivariate model, suggesting that some other factor (working rather than attending school?) accounts for this association. Clarifying which results are from which model could help the reader to interpret the findings and also lead to a more thorough discussion of the results, e.g., why this gender effect was seen in the bivariate but not the multivariate model.

8. The discussion needs more thorough referencing and is somewhat repetitive. It would be useful if the authors discussed potential mechanisms by which food insecurity affects development, hypotheses regarding differential gender effects (perhaps citing other literature that suggests similar findings – e.g., Cook & Frank, Ann NY Acad Sci 2008 + literature from lower-income countries?), and specific recommendations for action to improve food security as noted above.

Minor Essential Revisions

9. It would be helpful to describe MDG2 when first noted in the background.

10. In the hypothesis, the authors note that they are looking at frequency of school absenteeism – but isn’t the variable in the regression model actually never vs. ever rather than a frequency measure?

11. The manuscript would be helped by some statistics about the extent of food insecurity in Ethiopia beyond indicating that it is a common problem. How do the rates of food insecurity observed in this sample compare to other available statistics? A reference for rainy/hunger season would also be helpful.

12. What is the rationale for the covariates included in the multivariate models? How/when were the covariates measured?

13. What are the implications of including both adolescent and household food insecurity in the models? Does the household measure not assess any experiences of food insecurity at the level of children in the household? Are
experiences of food insecurity at these different levels hypothesized to affect child development in different ways or to differing degrees?

14. Unclear why the sample characteristics are given by school absenteeism rather than by food insecurity, which is the explanatory variable of interest in the paper.

15. Any other limitations besides use of only one measure of educational attainment? E.g., self-reported measures, misclassification of food security status, etc.?

16. Please note typo in label in Figure 1.

Discretionary Revisions

17. It would help with interpretation to explain how the values for highest grade completed should be interpreted. Does 6.2 among non-absentees mean 6 years of schooling on average? What is the average for the population?

18. Unclear how illegitimate absences were captured in contrast to ‘legitimate’ absences.

Level of interest: An article whose findings are important to those with closely related research interests

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.

Declaration of competing interests:

I declare that I have no competing interests