Author’s response to reviews

Title: Predictors of anemia in pregnant women residing in rural areas of the Oromiya region of Ethiopia

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Version: 1 Date: 10 Apr 2017

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From reviewer #1:

• Page 8, lines 168-170: the scoring system for the MAHFP was a bit unclear to me; is a high score reflective of an abundance of food, or is a high score reflective of the "lean" season which I assume means limited or inadequate food supply because of poor growing conditions. We clarified the definition of MAHFP.

• Page 9, line 209: in this sentence, you note that women in Woliso were mostly Christian; in the methods on page 7, you mention two predominant religions: Muslim and Orthodox. Is Orthodox the same as Christian? Since this was confusing, you might want to consider using uniform terminology when you discuss religion. We clarified that Christian meant Orthodox, Catholic, and Protestant in that sentence.
• Page 12, line 261: if the women consume other green leafy vegetables other than kale, would change i.e. to e.g. We changed i.e. to e.g.

• Page 12, lines 270-272: you make an interesting point about multiple pregnancies and spacing of pregnancies. Would you be able to look at differences among women who space their pregnancies differently? For example, compare anemia prevalence of those with pregnancies spaced < 1 year, 1.5 yrs, 2 yrs etc between pregnancies? If you don't have that data relatively available, might be an interesting study for another project (I realize it may not be feasible to do this analysis, of course). This would be interesting to see, but our data did not allow for this type of comparison.

• Page 12, lines 27-276: I am fascinated about numeracy being associated with decreased odds of anemia - do you have any thoughts on why that might be? I was wondering if those women with higher numeracy scores have higher adherence to oral iron supplementation, or might there be another factor at play? I would love to see more discussion about this, if you think it is worth exploring. We ran a few correlations with our data and did not find any evidence to support this theory.

• Page 13, lines 283-285: Another fascinating point about the frequency of malaria testing, with essentially no prevalence. Should that screening be directed to something else? I know that was just a minor comment, but my thought immediately went to where the resources should be directed instead. It may be beyond the scope of this paper, but it seems that there is an opportunity to make a statement about screening here. This is beyond the scope of this paper, but we did mention that some parts of the study did take place in traditionally malaria endemic areas.

• Page 13 lines 285-294: do you think that fasting also reduces exposure to contaminated foods? Are good handwashers who fast at lower risk of anemia? We did not find any evidence of this in our data.

• Throughout: there were some instances where an abbreviation was used but not defined before the first use so I found myself going back to try to find the abbreviation; would consider carefully reading the manuscript and define all abbreviations before first use. We reviewed the paper for missed definitions.

Reviewer #2:

• Line 30-31: This sentence is confusing; it seems it has a problem with punctuation. Please check. We clarified this sentence.

• Line 31-31: There is "little consistent and conclusive evidence" about what? Please clarify. We clarified this sentence.

• Line 33-35: No need to repeat "pregnant women" in the statement of the objective. We deleted the second use of "pregnant women."
• The abstract is missing a section on methods. We added a methods section to abstract.

• Line 36-39: With an OR of 1.02, which is very close to 1.0, it is confusing to me that authors found this association (between HFIAS and anemia) significant (p=0.01, CI 1.00-1.04). Please clarify. We removed this from the abstract and clarified in the results section that while this was statistically significant, it is not meaningful.

• Line 108-110: Please explain the sample size calculation: eg, was this the sample size for the ENGINE project, or for this particular study? what was it based on, and what were the parameters? We further described the sample size calculation for the study.

• Line 222: The results being referred to as in Table 3, not Table 2. We fixed the table number.

• Discussion: For the first paragraph, I don't see the need for repeating what was said 2 times already (in abstract and introduction/methods). I strongly suggest author remove this first paragraph. In Lines 246-249, were those previous studies conducted in the same area this present stud was conducted? Lines 258-264 should be moved to the results section. We removed the first paragraph to be less redundant and moved lines 258-264 to the results section.

• Tables 2 and 3: What was the purpose of the comparisons between the 3 locations (woredas)? Were the comparisons informed by the sample size calculations, i.e was the sample size calculations based on comparing the 3 sites? Sample sizes were calculated for comparison between woredas. However, the comparisons also reveal some striking differences in the health and demographic characteristics between each woreda.