Reviewer’s report

**Title:** Household, maternal, and child related determinants of hemoglobin levels of Ethiopian children: Hierarchical regression analysis

**Version:** 0 **Date:** 22 Jan 2019

**Reviewer:** Lewis Li-Yen Hsu

**Reviewer's report:**

in the 2016 Ethiopian demographic and health survey (EDHS). It is presented well but would benefit from just a bit more clarification in the areas specified below.

a. Page 6, line 41-42, states “More information about the survey methodology is found elsewhere.” Should state where this information can be found.

b. Page 13, lines 1-20: This statement about iron supplements seems too strong and too provocative “Our findings were in contradiction with existing public health recommendations.” Please consider rephrasing this sentence like “At first glance, our findings might appear to conflict with public health recommendations” Firstly, the authors go on to discuss 4 possible explanations why these data are not contradictory - these 4 nutritional insufficiency scenarios actually remain congruent with public health recommendations. In addition to these scenarios, other interpretations are possible for their finding that Iron supplementation was not associated with Hb level (page 10, line 40). Ongoing blood loss (e.g. from helminths), plumbism, or hemoglobinopathies are other potential etiologies for anemia that could be refractory to iron supplements.

c. Page 14, lines 52-59. Another limitation is that hereditary anemias are not considered in this discussion. The omission of hemoglobinopathies from the study is justified by data that the incidence is low for sickle cell and beta thalassemia in most of Ethiopia. Amare Deribew, Gizachew Assefa Tessema, Kebede Deribe, Yohannes Adama Melaku, Yihunie Lakew, Azmeraw T. Amare, Semaw F. Abera, Mesoud Mohammed, Abiy Hiruye, Efrem Teklay, Awoke Misganaw and Nicholas Kassebaum. Trends, causes, and risk factors of mortality among children under 5 in Ethiopia, 1990-2013: findings from the Global Burden of Disease Study 2013. Population Health Metrics, Advancing innovation in health measurement 201614:42. https://doi.org/10.1186/s12963-016-0112-2

2. Minor critique:
   a. Page 2, lines 8-9, consider changing “under-5 children” to “children under five years old”
   b. Page 2, line 15-16 “infant” should be plural- “infants”
   c. In the abstract on page 2 in the first line of the results section (lines 34-35), households are referred to as “better off.” It would be important to distinguish what factors were used to determine this status.
   d. Page 4, line 11, “children are of particular concern: developing…” The colon (:) should be a comma (,) read: “children are of particular concern, developing…”
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.

Yes

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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

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