Author’s response to reviews

Title: Prevalence of Anemia and Associated Risk Factors among Children in Northwestern Uganda: A Cross Sectional Study

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Author’s response to reviews:

January 29 2017

The Editor,

BMC Hematology,
236 Gray's Inn Road,
London WC1X 8HB,
United Kingdom,

Dear Sir/Madam,

Re: Point – to – point response to the review comments of BHEM-D-16-00024R1 manuscript

We here by submit our response to the review comments. Please note all the changes in the manuscripts are highlighted in yellow.
Editor Comments:

1) Please ensure that you paper is formatted according to the journal guidelines as specified here: http://bmchematol.biomedcentral.com/submission-guidelines/preparing-your-manuscript/research-article

Please note that this is an import aspect of submission to the journal. If the paper is not formatted correctly it will cause delays during the process.

The paper is formatted according to the Authors guidelines

2) Please copyedit your paper to improve clarity and understanding.

All changes are highlighted in yellow following the suggested and required changes.

3) We understand that participants we aged between the ages of 1-14. Please confirm if you obtained written informed consent from the parents/guardian of the children. Please confirm whether the means of consent used was approved by the ethics committee.

We confirm that we obtained written consent from the parents/guardians and the means of consent were approved by the ethics committee and declared in the manuscript.

Reviewer #1: This study examines the prevalence of anemia and the risk factors associated with anemia in a specific geographical area of Uganda. The work is interesting and the results are important to share with the scientific community. However, the work is to be revised before it is considered for publication. Following are the main issues that need attention:

1. The manuscript is not structured very well. The Aim should be part of the Introduction section and should be mentioned in the last paragraph in the Introduction section.

In the author’s instructions, the aim is part of the Methods section. We have, now shifted the aim to part of the background as suggested.

Also, The statistical analysis is not summarized and presented under the Methods section. Some statistical methods were described in the results section (line 172), which is not appropriate.

Variables with P - value less than 0.2 were included for assessment of interaction in the multivariate analysis and confounding was checked at 10%. This part including line 171 – 172 has been removed.
Discussion regarding results should be in the Discussion section, for example line 149-151 discusses the reason behind nutritional deficiency in males and young children.

The discussion point of this finding has been removed.

2. Interpretation of the relationship between anemia and stunting. Is "stunting" a risk factor for anemia or a result of anemia. This should be clarified and addressed carefully.

This point is carefully addressed from line 252 – 254

3. The authors should indicate in the introduction their reasoning behind focusing on the prevalence of anemia in this specific area of Uganda. This should be discussed in the Introduction section and in the Discussion section.

“In a more recent community survey conducted by EMBLEM among children less than 16 years of age in three of its pilot population control villages in Arua, haemoglobin < 11.0 g/dl was observed in nearly half of the children enrolled (unpublished data)”. This part has been included in the background (line 57-59).

4. The authors should discuss the limitations of the study in the Discussion section. The main limitation is related to the study being conducted in a certain geographical area.

“A major limitation of this study is the cross sectional design and, therefore, the findings do not suggest any causality. Second limitation of this study is that ancillary studies of vitamins and serum biomarkers of iron deficiency were not investigated. Given the previous global estimates of anaemia attributable to iron deficiency coupled with our finding that 31.0% of the children had microcytic hypochromic blood picture, the contribution of iron deficiency to the overall anemia prevalence in our study is likely to be great”. This has been included (line 260-264)

Reviewer reports:

Reviewer 2: This paper is interesting and demonstrates that this region of Uganda appears to improving from previous reported on nutritional and helminthic anemia in Uganda. The population studied in the cross-sectional study includes mostly people with moderately good nutrition and good standards of hygiene. None of these critiques are major flaws, but the paper could be improved with some editing and clarification.
The positive correlation between household size and income, implying that large families were of higher socioeconomic status was a surprise to this reviewer who lives in a society where the inverse is true. It does make sense, and is an important observation about the social context. This social context is brought in later in the Discussion (lines 248-253) but should be emphasized earlier during the Discussion of association with mothers of low parity, in lines 234-238. If possible, try to fit it into the abstract.

“It is interesting to report that the risk of anaemia decreased with increasing household size (P = .02) contrary to the previous report.” This has been added to the abstract line 40-41

“It is important to note that this community has a reasonable percentage of Muslims – characterised by large families and the associated socioeconomic status.” This has been added to the discussion line 169-171

Methods, Results, Discussion, Conclusion - The results of the multivariate analysis in Table 5 seem to be overshadowed by the discussion of univariate analysis. Please add a sentence or two to highlight the findings of multivariate analysis, and emphasize in lines 175-178 and lines 261-262 that the Factors independently associated with the risk of anemia were found by multivariate analysis.

Noted

Although the infectious disease and nutritional etiologies of anemia are obviously very important, the authors should mention why they did not explore for possible hemoglobinopathies (sickle cell disease and alpha thalassemia) and possible lead toxicity. Is the prevalence low for these potential causes for anemia in this northern Ugandan population? Were there technical barriers to testing for these causes? Would the children with hemoglobinopathy or lead toxicity be too sick to be included in this study? Are reports from Kampala irrelevant for the population in this study?

These variables were not considered and thus references not included.


* Lubega I1, Ndugwa CM1, Mworosi EA1, Tumwine JK1.


Results Lines 124-125 Change is considered by joining the two sentences as follows: "Most homesteads (98%) had either a latrine or toilet for family use and this level of sanitation above the average reported nationally [21]"

Results Lines 147-148 The double negative is confusing. This has been changed “There were no cases of severe anaemia (Hb < 7.0 g/dL) in the asymptomatic children of the study population”

Results Line 161 Suggest clarification by adding the words "only" and "more"; "Children with only one parent surviving were 1.5 times more likely to be anaemic …"

Changed as suggested

Discussion Line 245 Again suggest clarification by adding the word "more"; "Children with a single parent surviving were 1.5 times more likely to be anaemic …"

Changed as suggested

Typographic error line 279 "drowned" should be "drawn"

Changed as suggested

Typographic error line 295 "corporation" should be "cooperation"

Changed as suggested

Typographic error line 431 "Odd ratio" should be "Odds ratio"
Changed as suggested

Yours faithfully,

BARUGAHARE JOHN BANSON, B.Sc., M.Sc., MPhil

SENIOR LECTURER

Corresponding Author