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:

March 01 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 hereby submit our response to the review comments. Please note that the revised manuscript has track changes highlighted in yellow. Lines where the revisions have been made are indicated as well.
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 in track changes and highlighted in yellow and lines are indicated as well.

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.

Reviewers’ comments

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 removed it from Methods to the Background as suggested. This is now in Lines 77-79

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 has been removed. Lines 184-185

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. The text has been replaced by “All the nutritional deficiencies observed in this study were more common among males”. Lines 158-161

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 269 – 272

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 pilot survey conducted in Arua district (same study area) hemoglobin < 11.0 g/dl was observed in nearly half of the children less than 16 years enrolled (unpublished data).” This part has been included in the Background and Discussion respectively (lines 58 – 60 and 240 - 242).

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.

“We acknowledge that resources limited the scope of this study to one geographical region, and thus recommend similar studies in other geographical regions to confirm our findings about the changing context of nutrition, hygiene, and maternal wealth. Limited laboratory resources precluded examination of factors like hemoglobinopathies or lead intoxication, however, these factors are likely to be more important for a hospital-based study of children with severe anemia than a community-based study." This has been included (line 276-280)

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.

Results Line 167-168 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.

This change has been made lines 253 -259 and 270 -275 respectively. Secondly, this part: “There was a positive correlation between household size and income (Pearson X2 = 22.96; P=.001), implying that large families were of higher socioeconomic status” has been included in the abstract. Line 41 -42

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?

This has been considered as a limitation in lines 285 - 287


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 is above the average reported nationally [21]" The change has been effected: Lines 132- 133

Results Lines 147-148  The double negative is confusing. This has been changed: Lines 156 - 157

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: Line 171

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: Line 267

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

Changed as suggested: Line 310

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

Changed as suggested: Line 326
Typographic error line 431 "Odd ratio" should be "Odds ratio"

Changed as suggested: Line 462

Yours faithfully,

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

SENIOR LECTURER

Corresponding Author