Author's response to reviews

Title: Assessment of water, sanitation, and hygiene practice and associated factors in a Buruli ulcer-endemic district in Benin (West Africa)

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Author's response to reviews: see over
Dear Editors,

We would like to submit the revised version of the manuscript entitled “Assessment of water, sanitation, and hygiene practices and associated factors in a Buruli ulcer-endemic district in Benin (West Africa),” for consideration for publication in BMC Public Health.

We would like to thank the reviewers for comments made to improve the quality of the manuscript. Below the point by point answers to questions raised by the reviewers.

Thank you for considering this revised version.

Sincerely

Dr Roch Christian JOHNSON
Reviewer 1

Comments: Abstract:

The background of the abstract did not clearly define the problem for which the study was done. The authors indicated the growing importance of the use of WASH in controlling NTDs but failed to link this statement with the baseline study. A clear link between the two will ensure coherence and manuscript easily comprehensible. Check line 44, 45 and 46. The linkage is missing here

Answers

The background of the abstract is completed with a sentence (in red) according to the remarks of the reviewers.

Comments

Background

The authors clearly defined WASH, NTDs and their importance from line 71 through to 86. They went on further to talk about Buruli ulcer from line 87 to 96. The authors failed to link the evaluation of WASH indicator performance and BU. This missing link makes it difficult to follow the argument since the authors discussed the relationship between WASH indicators and BU in line 224 to 227. A clear link will improve on the work and will clearly state the problem for the baseline study as has been done for soil transmitted helminthiasis, trachoma, LF, Guinea worm and schistosomiasis (check line 78 to 83).

Answer

We thank the reviewer for this comment. We added a new paragraph (in red) to the background to address the comments made by the reviewer

Comment

The method used was appropriate, data used for analysis was sound and the figures had no evidence of manipulation.

Answer

We thank the reviewer for this comment

Comment

The use of the word “triangulation” under study site was inappropriate. Triangulation is part of the analysis hence should be put in the analysis section of the methods. I suggest the authors delete it from line 107 and put it under data processing and analysis possibly after line 138.

Answers: The word triangulation is removed under the study site and replace under data processing and analysis in the method section
Comment
It is unclear how the 600 participants were selected; the authors should detail how the sample size was calculated and the sampling done. This was missing under the sampling section.

Answers
The sampling method is described according to the comments of the reviewer (see sentences in red)

Comment
The statement “Univariate analysis was conducted. Multivariate analysis was carried out using multiple logistic regression, with odds ratio, and 95% confidence interval (CI), to determine the effect of factors on the outcome variables and to control confounding factors. The analysis was used to determine the relationships between the associated factors and the sanitation and hygiene status”. Line 133 to 137 is too generic, it is important to be specific in terms of the outcome variable at least. The statement need to be written well by a statistician

Answers
The paragraph is rephrased according to the comments of the reviewer

Comment
Good discussion but it should start with the primary work, use STROBE checklist for guidance. Kindly rephrase line 300 to 304, the link between recommendation for WASH and BU is not clear.

Answer
We are grateful to the reviewer for these comments. The discussion was rephrased accordingly

Comment
The method section and the results needs to be improved- Use the STROBE checklist for cross-sectional study to improve on the sections The section subtitle Variables should come before data analysis .The write up of the results should be improved upon using STROBE Checklist for cross-sectional study. It is important to start the results section with the demographic characteristics of the respondents. This will help the reader appreciate the findings being reported. Record review of BU cases may be reported last since that is not the main work but was done to show the burden of BU in the district. Some of the findings from the key informant interview were mixed with discussion. The authors should report their findings or what was said by the key informant under this section and take the possible explanations to the discussion section. Eg “We have always drunk water like that” or “We do not have disinfectants”. Generally, people had experience of using disinfection techniques such as chlorination, but did not implement them, for various reasons, probably the extra work or additional costs required. The bold portion is an explanation from the authors and should be under discussion.

Answer
We are very grateful to the reviewer for these valuable comments. The method section as well as the qualitative results was re-organized according to the reviewer suggestions.

**Comments**

Table 2 should rather be table 1 to show the demographic characteristics of the respondents. The title may be improved upon since it contained the WASH indicators assessed Table 3 and there was repetition of analysis on Sanitation status and Hygiene status. The authors should just keep it in one of the tables and delete from the other.

**Answer**

We thank the reviewer for his comments. The tables were re-organised to make the manuscript more understandable.

**Comment**

Level of interest: An article of importance in its field
Quality of written English: Acceptable
Statistical review: Yes, and I have assessed the statistics in my report.

**Answer**

Thanks for these positive remarks

Reviewer 2

**Comment**

Abstract
Methods “to access WASH practices” should be rephrased to “to assess WASH practices”

**Answer**

Corrected as recommended

**Comment**

Background
The importance of WASH for Buruli ulcer is not clearly indicated in this part of the study. There should be critical appraisal of the link between WASH and BU. It is also to review the important literature on the link between BU and WASH. It would have been important to do a systematic search of the literature to indicate the link between BU and WASH.

**Answer**

We thank for this comment similar to that of the first reviewer. The background section was corrected and completed accordingly.
**Comment**

**Methods**
The order of the methods section can be improved by first start with Methods section then subheading, study setting, study design, sampling, variables or measurements, operational definitions, Data analysis, Ethical considerations.

**Answers**
The section method has been reorganized and modified based on feedback of the reviewer.

**Comment**

Some of the variables measured are not related to the study for example episodes of diarrhea among children in the previous 7 days. How will this be related with a study assessing WASH indicators in BU endemic area?

**Answer**

This is a good point and this variable was removed from the table.

**Comment**

Under the Ethical consideration the statement “The questions from the questionnaire were proven not to affect the morale or personality of study subjects” should be rephrased. You could say “The questions were culturally sensitive”. Was the consent written or verbal this should be stated.

**Answer**

The section has been corrected as recommended

**Comment**

**Results**

It is indicted that there is high detection rate of BU, without knowing the population in the area it would not be appropriate to say so. The factors associated with the improved sanitation and good hygiene practice should be described well.

**Answer**

The table is completed with informations related to the detection rate. The operational definitions of “improved sanitation and good hygiene “are defined and the reference was cited
Comment

The results of the qualitative study are poorly presented. The authors should describe the major thematic areas in each subtitle and make quotes, and should give the person should also be described.

Some of the statements in the qualitative findings should be quantified by the quantitative study. For example the statement “Open defecation is most frequently used” should have proportion of individuals who practice open defecation.

Answer

The section is corrected accordingly

Comment

Generally the discussion lacks focus, I would recommend discussing important areas of WASH which are related to BU disease. First, availability of water and good hygiene practices. Most of the discussion part is not related to the study. There are many studies which clearly showed the link between NTDs and WASH and the authors should make reference to them. I would recommend the discussion should start with summarizing the main findings, comparing with others studies, discussing the limitation of the study, indicating the need for future studies such as systematic review to assess the link between BU and WASH etc. Finally the implication of the findings for BU control.

Answer

As indicated for the answer to the first reviewer, the discussion was completed according to the comments of reviewer