Author’s response to reviews

Title: Community knowledge, perceptions and water contact practices associated with transmission of urinary schistosomiasis in an endemic region. A qualitative cross-sectional study

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Author’s responses to reviewer’s comments

Title

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Community knowledge, perceptions and water contact practices associated with transmission of urinary schistosomiasis in an endemic region. A qualitative cross-sectional study

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Author’s responses to reviewer’s comments:

Dear Editor,

We thank the reviewers for their hard work in reviewing our manuscript
Below are our point by point responses to comments raised by reviewers.

Reviewer #1

Reviewer reports:

Andrea Gazzinelli (Reviewer 1): In this manuscript Angelo and colleagues analyze individuals' knowledge, perceptions and water contact practices associated with transmission of urinary schistosomiasis to complement chemotherapy as control strategy. The manuscript focuses on a topic of public health importance, however it presents major weaknesses that led this reviewer to not recommend it for publication.

Comment no 1. Background

More data is needed to specify the prevalence of the disease in the country. The authors say that the "prevalence at national level continues to increase with time despite the commencement and expansion of the control strategies". This statement is not backed up by related data. It is important to include prevalence values for the understanding of the paper and clarification to the readers. In addition, it would be interesting to contextualize the increase in prevalence mentioned in the text. In general, we all know that schistosomiasis is a persistent and difficult disease to eliminate all over the world. Despite this difficulty, it has been observed a worldwide reduction in prevalence due to treatment and other control measures. Therefore, it is important to show the data related to the particular situation of Tanzania.

Response:
We thank the reviewer for this observation, this has been addressed in the introduction section first paragraph highlighted in purple, and the paragraph has been backed with statistical evidence as shown below;

In 2004, when schistosomiasis control interventions were launched in Tanzania with financial support from the Schistosomiasis Control Initiative (SCI) through the Ministry of Health (MoH) the overall prevalence of schistosomiasis in the country was 51.5%. By 2010 the overall prevalence of schistosomiasis in the country was higher at 53.3%[6], and was observed to be increasing with population growth [12].

Comment no 2: Methods

More information about the study site would be quite useful. For instance, the size of the community as well as number of schools, since part of the study population was of students.

Response:

We acknowledge the observation made by the reviewer on this section. Information on the study site and number of schools present in the study area has been provided in the study area and population section as shown below.

This study was implemented among community members (children and parents/guardians) of Ikingwamanoti village, Shinyanga District, Northwestern Tanzania in October, 2016 and March 2017. The village has one school, Ikingwamanoti Primary School, which lies 02°65283’ South of the Equator and 32°64063’ East of Greenwich Meridian. The village is located along the highway to Tabora region, connecting Mwanza and Dar Es Salaam. The population size of Itwangi Ward, based on the current population census of 2012 was 10,037 people with 4,963 males and 5,074 females [22]. The district is predominantly inhabited by Wasukuma ethnic group (a Bantu-speaking people) who are the natives of the Sukumaland located to the west and south of the Lake Victoria. The region receives two phases of rainfall, the short rainy season from November to December and a long rainy season from March through May, with rain almost every day. The areas is endemic to S.haematobium infection with transmission occurring in temporary pools throughout the region[11,23–26].The major income generating activities is largely based on subsistence farming and livestock–keeping. Crops that are cultivated include cassava, millet, yams and paddy farming which constitute their food crops; whereas cotton is the main cash crop. Crop production and livestock-keeping are undertaken within the framework of individual households. More details of the study area have been described in [23].

Comment no 3: Additional information on the study population is also necessary. It is not clear who were the community members stated on the paper. Were the parents of the school children
considered as the community members group or were they included in a separate group? In the results section, the authors only mentioned the data from the school subjects and their parents. This made us wonder, once again, who the community members were. There is also a need to explain how the sample size was chosen for each group that participated in the SSI and FGD.

Response:

We thank the reviewer for the observation on study population

We have defined the community members which comprised of the parents/guardians and school aged children and has been indicated in the first paragraph of the study area and population section in the methodology part.

Selection of sample size has been described in the study design and sampling section in the methodology part as shown below:

Sample size determination was mainly based on salience of ideas and themes for thematic analysis of revealed outcomes, rather than reaching saturated recording of all beliefs within the community; as described by Weller and others[27] only 10 interviews when free answers, and further probing are utilized, are sufficient to capture on average 95% of salient ideas. To capture salient perceptions from individual experiences with urinary schistosomiasis, semi structured interviews were conducted with 29 adult community members and 20 primary school children. Sixteen focused group discussions with adult community members, totaling 168 participants, and ten FGDs, with a total of 103 school children, were administered to enable generation of community ideas on urinary schistosomiasis.

Comment no 4: What was the rationale behind the need to use two different strategies, ie, interviews and focus group discussion to collect data? How the authors select the participants for each data collection strategy, ie, interview and FGD? What were the criteria used for assigning participants for each group? There is a need to include a description of the questions and/or topics of the interview and FGD.

Response: We acknowledge this observation by the reviewer. The importance of using SSI and FGD has been described in the methods of data collection methodology section as shown below:

The rationale of using two different strategies in data collection ie focus group discussion and semi structured interviews was to compare the results generated from the two strategies[6] . Semi structured interviews explore more on individual views and experiences on the urinary schistosomiasis practice and perception, while focus group discussion was intended to complement SSI by providing in-depth exploration about community knowledge, practice, attitude and perception on urinary schistosomiasis in the study area.
However, FGDs are limited in terms of their ability to generalize findings to a whole population, mainly because of the small numbers of people participating and the likelihood that the participants will not be a representative sample. That is why it is advisable to complement data from focus groups with data from another method for data collection (i.e. in our case SSIs). The rationale for using two different strategies is because validity of qualitative methods is greatly improved by using a combination of research methods, a process known as methodological triangulation.

Selection of participants for each strategy (SSI and FGD) was conveniently based selection and has been described in the study design and sampling section.

The FGD and SSI guide question used in the study has been attached as additional information 1 and 2 and has been indicated in the methodology section on methods of data collection.

**Comment no 5: Results**

The results did not show data compatible with 171 individuals that were individually interviewed or participated on the FGD. In the paper the authors showed only data from parents and school children. What about other community members? It would be nicer if the authors showed the differences and similarities of the two groups interviewed: parents and children. A similarity analysis would make the paper significantly more interesting and also could add information obtained in the study.

**Response:** We thank the reviewer for this observation;

We have corrected the statement to define the study community members who comprised of children and parents as described in the study area and population section. We have provided a table for comparison between the two groups of parents and children who were involved in the semi structured interview. Only 49 participants were individually interviewed 20 from children and 29 from parents. The table with SSI responses has been indicated in the results section as Table 3 as shown below:
Table 3: Comparison of SSI responses between children and parents

<table>
<thead>
<tr>
<th>Variable</th>
<th>Children response (%) n=20</th>
<th>Parents/guardians response (%) n=29</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schistosomiasis not perceived to be a major health problem</td>
<td>10 (50%)</td>
<td>22 (75.8%)</td>
</tr>
<tr>
<td>Transmission</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completely wrong (hereditary, diet related)</td>
<td>13 (65%)</td>
<td>8 (27%)</td>
</tr>
<tr>
<td>Mixed up with gut helminth (eg bare foot around toilets)</td>
<td>14 (70%)</td>
<td>14 (48.3%)</td>
</tr>
<tr>
<td>Correct that it involves water contact</td>
<td>15 (75%)</td>
<td>13 (44.8%)</td>
</tr>
<tr>
<td>Knowledge that snails transmit</td>
<td>8 (40)</td>
<td>9 (31%)</td>
</tr>
<tr>
<td>Perception that is man made through excrete disposal</td>
<td>16 (80%)</td>
<td>11 (37.9%)</td>
</tr>
<tr>
<td>Water contact through playing</td>
<td>19 (95%)</td>
<td>13 (44.8%)</td>
</tr>
<tr>
<td>Symptoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abdominal pains</td>
<td>16 (80%)</td>
<td>19 (65.5%)</td>
</tr>
<tr>
<td>Passing of blood</td>
<td>16 (80%)</td>
<td>19 (65.5%)</td>
</tr>
<tr>
<td>Measures to prevent control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoiding random excreta disposal in or near water bodies (environmental hygiene)</td>
<td>6 (30%)</td>
<td>7 (24.1%)</td>
</tr>
<tr>
<td>Avoiding playing/swimming in water</td>
<td>15 (75%)</td>
<td>9 (31%)</td>
</tr>
<tr>
<td>Snail control</td>
<td>1 (5%)</td>
<td>2 (6.8%)</td>
</tr>
<tr>
<td>Health education</td>
<td>5 (25%)</td>
<td>8 (27%)</td>
</tr>
</tbody>
</table>

Comment 6: Discussion: There is a significant need of more discussion related to the data. The discussion section lacks more analysis and comparison with previously published papers and clear description of what the paper contribution really is, what was new and relevant.

Response: We thank the reviewer for this observation; the discussion section has been extensively written based on the study findings in relation to other publications. Details added in the discussion section have been highlighted in purple color.

Comment 7: References: High number of references with 10 years or more.

Response: We thank the reviewer for this observation;

We have included more recent references in the revised version
Comment no 1: REVIEWER COMMENTS FROM REPORT: Urinary schistosomiasis is a neglected tropical disease with a high burden in Tanzania. Despite the implementation of preventive chemotherapy through the use of Praziquantel to treat endemic communities either through school-based or community based in Tanzania, the prevalence of this disease has remained high due to rapid reinfection. This calls for other measures to complement chemotherapy, such as behavioral change intervention and improvement in water, sanitation and hygiene (WASH) resources. Therefore, this study is very important as it provides Schistosomiasis control program managers with information on the knowledge, attitude and practices (KAP) in the studied district necessary for the designing and implementation of behavioral change intervention.

Therefore the objectives, study design, execution and intrepretation of the results are commendable. The use of semi-structured interviews (SSI) and focal group discussion (FGD) from adults and school children for the KAP are standard methodologies in social science studies.

The authors have done well in providing qualitative data on KAP in the study area. However, the non-presenting of quantitative data, collected from SSI, makes it difficult to evaluate if the findings of the study are significant or not. Besides, the study was more FGD dependent, whereas FDG is a tool to compliment SSI

Response: We thank the reviewer for this observation, Quantitative data from SSI has been provided on the results section Table 3 which has been indicated in comment number five response of reviewer 1. However this study was designed to complement quantitative findings of a larger parasitological and malacological study conducted in the same area. SSI methods supplemented with FGD was used to enhance detailed understanding of urinary schistosomiasis transmission in the community social context for better designing of schistosomiasis control strategies in the study area.

Comment no. 2: REQUESTED REVISIONS: The design of the study is faulty, because the authors conducted only 28 and 20 Semi Structured Interview (SSI) with parents and school children. Was there any sample size determination? The small size of the SSI makes is difficult to generalize the research findings as a true representative of the study population with any statistical analysis. This I did not see in the manuscript

Response: We thank this observation by the reviewer
The study design used was accurate as the study objective was mainly to describe and explore individual as well as community group’s knowledge, attitude and water contact practices in relation to urinary schistosomiasis transmission. Therefore the use of qualitative descriptive research design was important. Sample size determination was mainly based on salience of ideas and themes for thematic analysis of revealed outcomes, rather than reaching saturated recording of all beliefs within the community; as described by Weller and others[27] only 10 interviews when free answers, and further probing are utilised, are sufficient to capture on average 95% of salient ideas. To capture salient perceptions from individual experiences with urinary schistosomiasis, semi structured interviews were conducted with 29 adult community members and 20 primary school children. Sixteen focused group discussions with adult community members, totaling 168 participants, and ten FGDs, with a total of 103 school children, were administered to enable generation of community ideas on urinary schistosomiasis. It may also important to note that social science study designs differ from conventional epidemiological study designs in that in social science study designs, sampling methods are mainly based on convenience rather probability as described in epidemiological/statistical text books. The design and sampling methods used in this study are therefore adequate and acceptable.

Comment no 3: The non-quantification of the responses from SSI in the form of tables, and descriptive statistics makes it difficult to appreciate why the authors conducted SSI if the first place. The two tables included in the manuscripts are general information tables and does not include any real results as expected. There are no tables the on KAP responses of participants either in SSI or FGD for comparison among the study groups. Instead, the results section is filled with FGD quotes.

Response: We appreciate the reviewer’s observation on this section,

A comparative quantification table on SSI responses between children and parents has been provided and has been shown in the results section as table 3. quotes has been used to supplement quantitative findings.

Comment 4: ADDITIONAL REQUESTS/SUGGESTIONS:

The authors should provide justification for the small number of SSI. The authors should use tables to compare and analysis the responses from SSI.

Response: We thank the review for this observation;

Justification for the use of small sample size has been addressed in comment number 2 reviewer number two. The table for comparison on SSI responses between children and parents has been provided in the results section and also shown in comment number 5 responses of reviewer 1.
Dear editor,

We thank the editors for considering the review, in the revised manuscript we have considered the reviewers comments and have made improvements to the manuscript. In addition editors’ comments have been addressed.

1. Sufficient information in the methodology section regarding the development of semi-structured interviews (SSIs) and focus group discussions (FGDs) has been provided.

2. Copies of FGD and SSI guides used in data collection have been attached as additional document 1 and 2.

3. Details about consent procedure for participants have been provided in the ethics section.

4. In competing interest it has been indicated that the co-author SMK is a member of the Editorial Board of BMC Public Health.
5. Manuscript background has been supported with statistical evidence

6. More details about the study area have been provided in the study area and population section

7. Information about study population has been provided and we have made clear that community members consisted of children, parents and guardians which has been indicated in the first line of study area and population section.

8. Selection criteria for SSIs and FGDs sample size has been described in the study design and sampling section in the methodology part

9. Rationale for using SSIs and FGDs strategies has been described in the methods of data collection - methodology section

10. Selection of participants in each category (SSIs and FGDs) has been described in study design and sampling section

11. A comparison table of results based on SSI responses between children and parents has been provided and indicated as table 3 in the results section

12. The discussion section has been comprehensively rewritten based on the study findings, additional information has been highlighted in purple color

13. More recent references have been added in the revised manuscript

14. Quantifiable results from SSI responses have been provided in Table 3 shown in the results section

15. Justification of the study design has been addressed as well as sample size determination in study design and sampling section

16. The entire manuscript has been edited based on raised issues and all edits made have been highlighted in purple color.