Author’s response to reviews

Title: Tuberculosis Treatment Outcome and Predictors in Northern Ethiopian Prisons: a five year retrospective analysis

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Response to reviewers

Title: Tuberculosis Treatment Outcome and Predictors in Northern Ethiopian Prisons: a five-year retrospective analysis

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Dr Giorgia Sulis,

Academic Editor

BMC Pulmonary Medicine

Subject: Revised manuscript (PULM-D-17-00307R1)


Dear Dr Giorgia Sulis,

Thank you very much for your email dated on November 10, 2017. Here, we have carefully considered and tried to address the points raised the reviewer. We hope that it would now be suitable for publication in BMC Pulmonary Medicine
Christopher Kuaban (Reviewer 3):

1. In a study of this nature concerning the outcome of patients after an intervention, it is not enough for the authors to tell a reader that "information regarding the TB diagnostics and treatment services in these settings have been described elsewhere. Briefly there was no sputum microscopy service in the clinics of the prisons and the TB diagnostics relied merely on a referral of prisoners to health facilities outside prisons. The diagnosis was carried out of the referral sites using the direct microscopy and/or chest X-ray following the national guidelines. Pathological evidence was also used to support the diagnosis" (lines 78-85). As seen from the above it is not known how the authors ascertained that the patients they studied had tuberculosis. On what criteria was smear positive pulmonary tuberculosis, smear negative pulmonary tuberculosis and extra-pulmonary tuberculosis based? Without knowledge of these, how can we be sure that the patients were suffering from tuberculosis?

Revision: This section has been revised now.

2. The authors do not also inform the reader on the treatment regimens that were used to treat these patients. Did they for example use the same regimen for treating new cases and retreatment cases? Is the duration of treatment same for new and retreatment cases? Is bacteriological follow up same for these two groups of patients? Etc

Revision: Revised.

3. It is not clearly understood where the affected prisoners were treated. Were they treated at "directly observed treatment short-course clinics or in the prison by the prison health personnel or the both? (lines 85-89).

Revision: Revised.

4. In the data analysis section it is not understood why the authors mention specifically that "death was also considered as an additional outcome variable" (line13) when in line 108 they included this among the elements constituting unsuccessful treatment outcomes.

Revision: We have tried to justify why we wanted to consider it specifically.

5. On what bases do the authors affirm in lines 145-146 that "All the prisoners transferred out to other prisons or released during their treatment were lost to follow up?" in normal TB
programme jargon, "transfer out" refers to the transfer of a patient to another health facility where they continue their treatment. The facility transferring out the patient to another health facility will therefore not know the outcome of the patient. For patients released from prison with or without linkage to a health facility (the authors have not made this clear), the authors cannot also be sure that all of them were lost to follow up.

Revision: Thank you for the critical comments. We have now tried to make this issue clearer. Moreover, after consulting the recent updated WHO case definition, where the term default is suggested to be replaced by "lost to follow-up", we have considered using this term instead of default in our manuscript.

6. In the results concerning outcomes, the authors have lumped up cohorts of patients who do not constitute a homogenous population. New smear positive pulmonary tuberculosis patients are not similar to retreatment cases even though they all have tuberculosis. New cases are treated for six months with a regimen of four drugs while retreatment cases are treated for eight months with a regimen of five drugs. It is therefore not surprising that retreatment should be a predictive factor for unsuccessful treatment outcomes as found by the authors. Similarly smear negative tuberculosis cohorts as well as cohorts of extra-pulmonary tuberculosis cases are never mixed up with smear positive cases on cohort analysis because for one we are not sure of the diagnosis and for two, their follow up is simply for the most part clinical. It is therefore not surprising that the treatment success rate should be quite high since more than three quarters of the study population were made of smear negative pulmonary tuberculosis and extra-pulmonary tuberculosis cases for whom bacteriological confirmation of cure could not be ascertained.

Response: Even though we share the concern of the reviewer, we think that it is justifiable to do such analysis. Despite assessing the treatment outcome of the most infectious cases (smear-positive patients) remains important, we believe that getting the whole picture of the situation could also be of paramount importance in order to design best-fitted interventions. We think that assessing the situation across all TB types would not create a problem in our case because of that we have done sub-group analysis and tried to show the variability. For example, we have assessed whether the unsuccessful outcome significantly differs across the smear-positive, smear-negative and extra-pulmonary TB cases though we did not find any difference. Studies also suggest that smear-negative patients could considerably end up with unsuccessful outcome; as such patients would often have HIV co-infection, which is a risk factor for unsuccessful outcome. Moreover, we used the WHO standard definitions to define the TB and treatment stratus of such groups.

7. Table 2 is quite difficult to read through and make sense out of it. I suggest that the authors transform this table into a frequency polygon if they think it is important.
Revision: Corrected as suggested. The trend in the TSR is shown in frequency polygon (Figure 3), but the detail outcomes were described only in a text.

8. It is not understood why the authors have decided to include the text in lines 182-197 describing the living conditions of the prisoners here. This does not tie with or explain what precedes. I suggest it should be omitted.

Revision: Corrected as suggested.

9. The conclusion does not seem to respond or give answers to questions the authors set in their objectives especially the one concerning predictors of unsuccessful treatment outcomes. As said above, "transfer out" cannot be considered as unsuccessful treatment outcomes.

Revision: We have revised our conclusion accordingly.

Thanks in advance!