**Author's response to reviews**

**Title:** Prevalence of tuberculosis and treatment outcome among university students in Northwest Ethiopia: A retrospective study

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Response to reviewers  
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Article title: Prevalence of tuberculosis and treatment outcome among university students in Northwest Ethiopia: A retrospective study  
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**Point by point Response to Reviewer 1 (Juliet Sekandi)**

1. Major compulsory revision
   a. Abstract:
      i. Methods: Define what the primary outcome was, i.e. All TB cases diagnosed by smear, culture or Chest X-ray.
      Response (R): corrected as suggested
      ii. Result section: state the total population of over the study period so that the reader can have an idea of what the denominator when measuring prevalence will be study sample i.e. 189 before providing the proportions.
      R: corrected as suggested
      iii. It is not clear what the state higher prevalence of TB 1830 vs 735.6 and 993.9 vs 659 per 100000, in the humanities than medical campus means, need to specify what the above numbers are comparing.
      R: Corrected as 'the prevalence of TB in the Social Sciences and Humanities
Faculty was higher than the one observed in the Medical College.’

iv. Conclusion needs to be put in context: Higher prevalence of TB….. relative to??? What was the basis to judge magnitude of poor outcomes, in this study its only about 7%, is it much lower at the national level or in other universities?

R: The phrase ‘with a relatively poor treatment outcome’ is removed from the conclusion section of the abstract as it isn’t the appropriate deduction.

b. Discussion:

i. Pg 11 Cut paragraph into two to make it easy for the readers, supporting literature is needed on Pg 11 to back low level of knowledge and attitude, poor infection control and occupation exposure as the possible explanations for the high prevalence in CMHS.

R: Corrected as suggested

ii. The discussion is too narrow in scope; authors should provide a broader context by drawing comparison with what has been found in other university or similar congregate settings.

R: Discussion is modified and changes are highlighted in blue

iii. Pg 12, 2nd paragraph most of what is presented are results not discussion so it could be cut out.

R: The stated paragraph is cut out

iv. The strengths and limitations of the study should be clearly stated.

R: included as suggested

v. General comment: in the discussion, the paper should take on a broad public health context if it is to be published in this journal by contrasting what the study found and what is already known about such populations like University students.

R: Comment accepted and changes are made as mentioned above

vi. Discussing in more detail about what the specific role of contact investigation and testing new students as well as periodic test for Latent TB infection would be in order to prevent further spread of TB in setting like a university would certainly enrich the paper and make it align with the common goal of TB control.

R: Comment accepted and changes are made in the text

2. Minor Essential Revisions

a. Include recommendations that point to prevention of TB disease

R: Included as suggested

3. Discretionary Revisions:

a. Information in Table 1 and 3 could be merged and TB prevalence on each campus calculated using the actual totals of students enrolled.

R: We kept table 1 and 3 as they are because we think they are better this way

b. Table 2 and 4 could also be merged or information could be presented in a figure such as a bar graph.
R: We kept table 2 and 4 as they are because we think they are better this way.

c. Table 5 can be sized down to have less columns, merge TC and C since the numbers are really small and new column be named as treatment completion and cure or labeled treatment success.

R: Table 5 is modified as suggested.

Point by point Response to Reviewer 2 (Amenu Wosen Denegetu)

a. Major Compulsory revisions

i. Title

1. It is clear that the finding revealed high prevalence of TB among the study group. However, I am not comfortable very well with the title, as it seems the researches already knew the finding before data collection.

2. Hence, I suggest modifying the title; like for example, ‘Five year trend analysis of TB prevalence and treatment outcome among….’ Or ‘Retrospective trend analysis of TB case finding and treatment outcome among…’ Or ‘Five-year TB case notification among…. 2007-2011’ or other modification which avoids the word ‘high’ so that the reader will be more interested to go through the finding.

R: Title is modified as “Prevalence of tuberculosis and treatment outcome among university students in Northwest Ethiopia: A retrospective study”

ii. Methods

1. The authors need to explain the ‘design’, a little bite in details of ‘data collection procedures’, at least include what has been stated in the abstract section, ‘…..among students at UoG from January 2007 to December 2011’, who collected the data?. Was there any inclusion or exclusion criteria? Any discarded data, because of incomplete chart or any other reason? Again, how was the data grouped by year? Were the data grouped based on their date of diagnosis or date of treatment completed? For example, a patient may need at least 8 months to complete the treatment, but the patient might be diagnosed in 2007 or 2008 but might have completed treatment in the following years, so how did you group these kinds of data?

2. In general, I suggest to enrich the ‘Methods’ section so that the reader will have better understanding of the data collection procedure.

R: The following is added in the ‘data collection procedures’ section of the manuscript: “All TB cases diagnosed with smear, culture, and/or radiography were included in the study. All students of University of Gondar who were diagnosed and initiated on TB treatment at the Hospital DOTS clinic between January 2007 and December 2011 were considered except those with incomplete information. Those cases that were under ongoing TB treatment were also excluded. Data was collected by the physician investigators and nurses working in the DOTS clinic.” And “Data was grouped based on the year of diagnosis” is added to the ‘data analysis’ section.

b. Minor revisions

i. Abstract
1. Result section: revise/rewrite the sentence ‘Higher prevalence of TB, 1830.1 vs 735.6 and 993.9 vs 659.6 per 100,000 populations, was observed in social sciences and humanities faculty than the medical college campus’, it is not very clear.
R: Corrected as suggested
2. Better to put ‘TSR’ here, as it is put in your result section.
R: Corrected as suggested

ii. Result
1. I suggest to put two subsections under the ‘Result’ section after the socio-demographic paragraph, something like:
a. a. Prevalence and category of Tuberculosis
b. b. Treatment Outcome, so that readers will be able to trace key findings easily.
R: corrected as suggested
2. Paragraph 1= I suggest to rewrite the sentence ‘The most frequent (166, 91.7%) age group was between 19 and 23 years of age.’ As for example, ‘Majority (166, 91.7%) of the cases were in their ages of 19 to 23 years’.
R: corrected as suggested
3. I wish if you could categorize participants by year of study, like 1st yr, 2nd yr, 3rd yr and 4th + as seniors. I think you did not collect the data by that, but if you have data at hand by that category, that may be more interesting than the age, because everybody knows the age groups of university students. Besides, the reader will have better understanding of who are most at risk for developing TB disease among the students.
R: As you said that data on their year of study wasn’t recorded. However, we mentioned it as a limitation of the study so that it will be considered in future studies.
4. Paragraph 2= you cannot present the national figure in your Result section. The authors need to take the sentence: ‘The prevalence in 2011 was 1.5 time higher than the national TB prevalence in the same year’ to the Discussion section with appropriate references. Besides, the sentence ‘The prevalence of TB in the University was consistently high in all the five years’, needs to be put in the ‘Discussion’ section.
R: Corrected as suggested
5. Paragraph 3= the authors need to explain the category of the remaining nearly 20% (35 patients) of the patients, especially if there were ‘chronic cases’, which are concerns for TB control program due to emergence of MDR-TB?
R: Unfortunately we don’t have the information on whether there were chronic cases but “Others”, according to WHO, as you know, includes ‘all cases for whom it is not known whether they have been previously treated; who were previously treated but with unknown outcome of that previous treatment; and/or who have returned to treatment with smear-negative PTB or bacteriologically
negative EPTB.

6. Paragraph 5: the sentence: ‘The highest rate of treatment failure was 3.1% in 2008’ seems misleading. Rather, I suggest to put in the previous sentence together, like: ‘Each of one treatment failure case was reported in three of the five years, 2007, 2008 and 2010’..

R: corrected as suggested

7. Last paragraph: the figure 82.9% in 2011, needs to be corrected to 82.6% based on your table 5.

R: Corrected as suggested

iii. Discussion

1. Paragraph 1: 1st sentence seems repeated; you have stated at your introduction section and also not acknowledged here.

R: Corrected as suggested

2. Paragraph 2, sentence 2: rewrite the sentence; it is a bite complex sentence.

R: Corrected as suggested

3. Paragraph 4: the sentence ‘Accordingly, in the current study, there were two treatment failure, two relapse, and two default cases from the 2007 and 2008 cohorts, the 2009 and 2010 cohorts, and the 2008 and 2011 cohorts, respectively’ can be rewritten as for example: …each of two cases of treatment failure, relapse and defaults among cohorts of 2007 and 2008, 2009 and 2010, 2008 and 2011; respectively. But this is what has been stated on the result section, here it need to be discussed what it means and can be even compared with previous reports of national data or elsewhere.

R: This paragraph is removed as it is mainly repetition of the result. It is discussed in the other part of the discussion.

4. Paragraph 4: the information ‘In other words, there were six (3.3%) students who were started on a retreatment regimen during the five years period. Out of this, one of the treatment failure cases was diagnosed to have multidrug resistant (MDR) TB and was started with second line regimen at St. Peter’s Specialized TB Hospital in Addis Ababa.’ Is not mentioned in the result section; hence, try to mention there adequately. Whatever to be discussed should be what has been discussed in the result section.

R: Corrected as suggested

5. It is advisable for authors to discuss their opinions why the smear negative and extra-pulmonary TB cases proportions are high. In addition, which sites of EP cases were identified common?

R: This could mainly be due to the low sensitivity of the AFB staining. The commonest EP cases are lymph nodes.

6. In general for Discussion section, I suggest discussing the whole UoG cases together rather than discussing by campus, that may not give much meaning as absolute figures are very low by campus.
R: That is true but we consider the implication of their risk factors and potential exposures in different campuses could be crucial especially for future intervention.

7. The authors are advised to include some regional TB data (Amhara regional health bureau TBL control), if possible.
R: Cited in the discussion

8. Conclusion
a. Were there any limitations and strengths of the study??
R included as per comments

R: Corrected as suggested

9. Generally, the authors need to re-visit the reference section.

10. Table 3: I see ANRS at the bottom of the table, but you have not used?
R: ANRS is due to an editorial error. It is removed now. It is not used because of the lack of complete data.