Reviewer's report

Title: Delayed consultation among pulmonary tuberculosis patients: a cross sectional study of 10 DOTS districts of Ethiopia.

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Reviewer: Alan Altraja

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The manuscript “Delayed consultation among pulmonary tuberculosis patients: a cross sectional study of 10 DOTS districts of Ethiopia.” by Mengiste M Mesfin, James N Newell, John D Walley, Amanuael Gessessew and Richard J Madeley addresses patient delay in pulmonary tuberculosis patients, analyzes its potential risk factors, and patterns of health care seeking behavior in selected DOTS-covered districts in Ethiopia. The study is among the first ones to concentrate on patient delay in tuberculosis in Ethiopia analyses in this study has involved extended amount of covariates and have reached to several significant and interesting findings. However, there are still numerous issues the authors need to address before a decision on publication can be reached. Fortunately, the concerns do not seemingly involve the raw data collected and the manuscript could therefore be improved substantially with re-writing. Apart from the importance for Ethiopia, the authors should emphasize the internationally-valid scientific message from the study, as well as they need to better pick up in the manuscript the novelty of the work they have done.

Major Compulsory Revisions.

1. The authors describe quite extensively the conditions related to public health and tuberculosis diagnostic services in Ethiopia (the 1st paragraph in „Methods”), however, instead they need to clarify better the principle of choosing the study population and standards they used to calculate the sample size.

2. When applying logistic regression analysis to calculate odds ratios and 95% confidence intervals of the risk factors for prolonged patient delay, the authors have clearly performed univariate comparisons first and the variables significantly (p<0.05) related with prolonged delay in univariate analysis were retained in the model. Approach, which is principally analogous to this is widely used, however, making reliable decisions on larger number of predictors of patient delay would have been possible if a p value higher than 0.05 was used (e.g. 0.1-0.2) in the final model to calculate adjusted ORs. Following this, one table, which summarizes the risk factors maintained in the final model, but contains both crude an adjusted ORs, would be sufficient to highlight the important findings. Anyway, the statistical approach discussed here needs to be concentrated into the “statistical analysis” section and removed from other parts as possible.

3. In the text, the authors need to specify, which associations did they find using chi-square test, as the “statistical analysis” section, they report using this test to
measure association between categorical variables and prolonged patient delay.

4. Results, 2nd sentence: what have the authors meant by “…were pulmonary negative”?

5. Results, 3rd sentence: why have the authors provided both median and mean age for the patients, as just median age seems to be sufficient.

6. Results, 1st paragraph: although the original Table 1 is pretty well organized to show patients’ access to health care and health seeking behavior, the authors should consider placing even the rest of the data (demographics etc.) into a table or a figure to facilitate reading the article. Care must be taken to avoid unnecessary repeating of the data found in tables in the text. This applies to the whole manuscript.

7. The authors report “one way walking time from patient’s residence to a public health facility” (Results, page 8, 2nd paragraph, 1st sentence), although in Methods, they have written about “walking distance” (page 7, 1st row). Is this correct?

8. The last sentence in “Results” (on page 10). “Similar risk factors and AORs were identified using a cut off of 21 days rather than 30 days to define prolonged patient delay.”. Is this correct? Please provide data.

9. Discussion, 2nd paragraph, pp. 10-11, the authors extensively discuss the issue of gender balance, although the study did not show a significant association between either sex and prolonged patient delay. Is this reasonable?

10. The authors report on using a pre-tested questionnaire (original page 6, row 11 in “Methods”). Is this questionnaire specified in more detail earlier in other studies? If so, please provide reference.

11. All tables should be self-explanatory, without major reference to the text. Therefore, the titles of all tables should clarify more thoroughly, which study population (incl. country, reference interval of data collection etc.) is under question.

12. The Figure 1 lacks proper figure text. This is clearly needed due to the complexity of that what is depicted. The authors need to reconsider design of the two different types of arrows and arrowheads to make their point clearer.

13. Also, the Figure 1 is referred to first only in Discussion (page 14), although this figure depicts details closer to the materials and methods.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1. The text contains some incorrect use of abbreviations, for example the term “pulmonary tuberculosis” is not abbreviated properly after its first appearance (page 6, 3rd last row), but is abbreviated thereafter.

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Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests.