Reviewer's report

Title: Does the organisation of health service delivery determine delay in tuberculosis treatment in Tajikistan?

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Reviewer: Jianming Wang

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This study interviewed 204 TB patients from 12 districts in Tajikistan and found that the median patient delay, health system delay and total delay to TB treatment were 21.5, 16 and 52 days, respectively. The type of facility, where patients made their first contact with the health system, was the main determinant of health system delay. It also showed that patients who had fallen ill and first presented to health care facilities in Russia had the longest delays.

Major Compulsory Revisions

Methods

1. In the part of METHODS, please give the definitions of onset of symptoms, first health care seeking, patient delay, health system delay and formal health care provider, which were important in estimating delays.

2. How did the author define patient’s SES? Was it estimated based on the wealth index constructed from the principal component analysis? Social economic status is an economic and sociological combined total measure of a person’s work experience, economic and social position relative to others. It is estimated not only by on income, but also by education and occupation.

Results

3. Are there any significant difference in the distribution of key characteristics between 78 dropped patients and 204 involved patients? Please describe it in the first part of RESULTS.

4. Page 7.Line 14-16. “The first formal health care facility approached was a Rural Health Centre for 36 patients (18%), a central district hospital for 39 patients (19%) and the district TB facility for 41 (20%) patients (Table 5)”. However, in table 5, only 15(7.4%) visited the district TB facility rather than 41 (20%) as the author mentioned in the text.

5. Page 8. The author mentioned that 36 TB patients were excluded from the analysis of patient delay. These excluded patients might have longer delay because a large part of them were unable to assign the date of onset.

6. Page 8. Line 18. “Visiting first a Medical House, Rural Health Centre, Polyclinic or a facility in Russia was associated with longer system delays”. How can the author draw this conclusion? From table 6, we can find that Hazard Ratios for Medical House, Rural Health Centre, Polyclinic and facilities in Russia were 1.00, 1.29, 1.26 and 0.651, respectively.
7. The author built two models to explore the determinants of delay. Unfortunately, table 6 only listed two factors associated with system delay, without providing the readers with valuable information. Point estimate without confidence interval plays a less important role in Epidemiology. Thus, I strongly recommend the author to list all variables in these two models. In each group, please describe the number of patients, delay time, HR, 95% CI, etc (both univariate and multivariate analysis).

8. Several continuous variables were categorized. For example, the age was categorized into 15-24, 25-34, 34-44 and >45. Why the author chose such a cutoff point? It sounds more rational to set the cutoff point based on the distribution (median, tertile or quartile...).

9. Table 6. The variables are divided into too many categories. Considering the limited sample size, the statistical power would be very low and the 95% CI for HR would be very wide. These variables could be grouped based on their characteristics.

10. Table 6. Why the author chose Danghara and Medical House as the reference group?

Conclusion

11. Page 12. Conclusions. Last sentence. “For this to happen, prioritisation of sputum smear examination has to be better enforced and sputum specimens should be collected at primary care facilities”.

It seems not appropriate to draw this conclusion from the current study.

Minor Essential Revisions

Table

12. Page 20. Table 4. Remove ‘%’ out of the brackets and put it behind women/men/total as ‘n (%)’. Delete total numbers in each stratum.

Reference

13. Please notice the format of reference. For example: in ref.7 and 25, you don’t need to add ‘doi number’.

Discretionary Revisions

14. Table 2 and table 3 can be deleted and described in the text.

15. Health system delay can also be divided into diagnosis delay and treatment delay. As mentioned by the author, those patients falling ill in Russian had to travel back to Tajikistan to start treatment, which led to the longer health system delay. It seemed that migration to Russia was only related to treatment delay rather than diagnosis delay. It might be interesting to discuss these two types of delay in the manuscript.

**Level of interest:** An article whose findings are important to those with closely related research interests
Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

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