Reviewer’s report

Title: MDR-TB treatment adherence in migrants: a systematic review and meta-analysis

Version: 0 Date: 22 Oct 2017

Reviewer: Kevin Schwartzman

Reviewer's report:

This is a well-written systematic review and meta-analysis, addressing the question of treatment adherence among persons with multidrug-resistant tuberculosis (MDR-TB). Specifically, the authors review data capturing adherence among migrants vs. non-migrants. They retrieved 15 studies which met their eligibility criteria, reporting 258 migrants and 173 non-migrants from the same treatment settings—primarily in high-income, low TB-incidence countries, and often at specialized referral and treatment centres. The authors conducted a formal meta-analysis, and found that adherence appeared to be similar between migrants and non-migrants.

Major Comments:

1. With respect to the rationale for the study, what is already known about adherence (and non-adherence) to treatment for drug-sensitive TB in migrants? I was surprised not to see any explicit reference to data in this regard, beyond assumptions and policy documents. If no such data exist, this would be a key topic for further investigation, particularly since poor adherence to treatment for drug-sensitive TB fosters the further emergence of MDR strains. However, I believe that some data are available from national surveillance systems (e.g. the US CDC), and these should be cited and discussed—in the introduction and the discussion sections.

2. The methods (e.g. search strategy, statistical analysis) are appropriate and well-described.

3. As mentioned by the authors, treatment failures may not reflect poor adherence, and it is appropriate that they conducted a sensitivity analysis where failures were excluded. However, on line 231 the authors should include the results of this sensitivity analysis for non-migrants as well as migrants, to permit suitable comparison. It is also worth noting that attributing treatment failure to poor adherence may be viewed as stigmatizing or "blaming the victim."

4. In interpreting their results, the authors could also consider the fact that treatment adherence may be viewed by some migrants as necessary to obtain status in the destination country (e.g. permanent residence or citizenship), and conversely they may believe that any perception of poor adherence will jeopardize their prospects in this regard—particularly
since poor adherence may lead to enforced treatment and hospitalization, or even imprisonment (for contempt of court) in some settings.

5. In their interpretation and discussion of their results, the authors should further emphasize the heterogeneity of studies reviewed—e.g. setting, treatment regimen, patient characteristics. Also important is the often small sample sizes—in the individual studies, and (in fact) overall, in the meta-analysis. [As an aside, I was surprised to note that a case report of a single patient (reference 52)] received a quality score of 8/9]. More generally, there is enormous potential for publication and selection bias, given the nature of the observational studies reviewed (primarily case series). This may not entirely invalidate the results of the analysis, but this point deserves a much more forthright discussion as an important limitation of this work—as does the marked heterogeneity of some of the individual study results.

6. There is unnecessary repetition in the discussion section of the manuscript, e.g. repeated statements that the findings contradict earlier assumptions about poorer adherence in migrants, need for better quality evidence.

7. The conclusion is appropriate and well written.

Minor comments:

1. In the abstract, lines 35-36, the authors state: "The estimated rate of adherence to MDR-TB treatment across migrant patients was 71% (95% CI: 0.58-0.84%)," i.e. there is a typographical error in the 95% CI, where the numbers are expressed as proportions rather than percentages. This occurs at other places in the full text manuscript, e.g. line 209. Please correct throughout.

2. Line 54: change to "has become a major focus." More generally, there are scattered minor typographical and syntax errors; please proofread carefully and correct accordingly.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes
Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

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