Reviewer’s report

Title: HIV epidemiology among female sex workers and their clients in the Middle East and North Africa: Systematic review, meta-analyses, and meta-regressions

Version: 0 Date: 04 Apr 2019

Reviewer: Joseph KB Matovu

Reviewer's report:

In general, I commend the authors for conducting a study that combines a systematic review, meta-analysis, and meta-regressions. Most studies report findings of systematic reviews alone; a few report findings of systematic reviews and meta-analyses; rarely do we find studies that include meta-regressions. Nevertheless, I have a few comments that the authors should address before the paper is considered for publication:

1. I am concerned about the low HIV prevalence reported among sex workers and their clients in the MENA region. I wonder if the authors looked at the possibility that most studies could not have succeeded in enrolling true sex workers or their clients, considering that >85% of HIV prevalence studies used convenience sampling? Otherwise, what else would explain the low HIV prevalence among sex workers and their clients -- population sub-groups that are known for high-risk sex behaviors and corresponding high HIV prevalence levels across the globe?

2. On page 7, the authors write, "... epidemics were classified as concentrated (>=5%); intermediate-intensity (1-5%) and low-level (<1%)". I have 2 issues on this point: a) the cut-offs for the different groups should be distinct from each other. In the current example, this is not the case, since >=5% includes 5% yet the next category is labeled 1-5% (which also includes 5%). This categorization should be revisited; b) besides presenting this information on this page, the authors did not use during the reporting of HIV prevalence results. I expected the results to be stratified by the three levels shown so that a reader can tell which countries fall within each category but this was not done. I recommend that all reporting of HIV prevalence results be done in line with these categories in mind.

3. On page 10, the authors write: "Prevalence >5% was reported in settings in Algeria, Iran, Morocco, Pakistan, Somalia, Sudan and Yemen. High prevalence >35% were reported in studies in Djibouti, Somalia, and South Sudan" I am a bit confused by the two statements. HIV prevalence of >5% should, from a mathematical point of view, include 35% or 40% or even higher - it represents any percentage above 5% which can be any percentage. So, when the authors introduce a second second with >35% (which is implied in >5%), I get lost. This could probably explain why Somalia is listed in either category. The authors should look at the categorization and improve presentation.

4. I expected to see HIV prevalence among clients of sex workers. Did I just miss this?
5. On page 4, in the sentence beginning, 'Despite recent progress ... much data is, at best, published...' (lines 20-22), the word "is" after 'data' should be replaced with 'are'.

6. On page 4, in the sentence beginning, "Though the size ..." (line 37), the word 'though' should be changed to 'although'.

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?
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Not applicable

Are the conclusions drawn adequately supported by the data shown?
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