Reviewer’s report

Title: Syphilis and HIV prevalence and associated factors to their co-infection, hepatitis B and hepatitis C viruses prevalence among female sex workers in Rwanda

Version: 0 Date: 22 Feb 2017

Reviewer: Birgit H. B. van Benthem

Reviewer's report:

The manuscript is clearly written and has important results. It is a national study among CSW in Rwanda and study participants are selected in different venues country-wide. It is important to know that the Rwandese government sponsored this study.

Major comments:

Introduction and discussion

The manuscript refers to many comparable papers among CSW of several continents/countries. I would summarise the most important studies, mainly the ones in neighboring countries, since it is now too much an enumeration of papers both in the discussion and introduction (can be shorter).

Methodology

* I'm not confident on the used tests for HIV and syphilis serology. More details on sensitivity and specificity of the rapid tests would be useful.

* Since the prevalence of most infections is very high (>20%, OR may mislead. It would be better to use prevalence ratios instead, at least for HIV and syphilis.

Minor comments

Results (page 9, line 20): it would be of interest to know how many women refused to participate in the study.
Could the authors elaborate on how representative the study participants are for the whole group of CSW in Rwanda?

In the introduction or discussion it is important to describe what kind of facilities are available for CSW and how the infections found are treated and what would be the follow-up of these women and the preventions measures that need to be taken based on the outcomes of the study.

**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.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable
Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

No competing interests to declare.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal.