Reviewer’s report

Title: One size does not fit all: HIV prevalence and correlates of risk for men who have sex with men, transgender women in multiple cities in Papua New Guinea

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Reviewer: Pande Putu Januraga

Reviewer's report:

This is a well-written manuscript with good quality in term of methodology and how the findings were discussed. However, I have some inputs for every chapter in this study, as follows:

1. Introduction
- Focusing on MSM and TG in this study needs more justifications. It is not only about the unavailability data on HIV prevalence of MSM and TG who did not work as sex workers, but also add the urgency of this situation. Please add the data on the trend of HIV mode of transmissions in PNG. For example, is there any changing pattern from heterosexual to homosexual transmission?
- This study did not explain why survey was conducted in only three cities in PNG. Authors only stated "In conjunction with the PNG National Department of Health and National AIDS Council Secretariat, we conducted a respondent-driven sampling (RDS) biobehavioural surveys (BBS) of MSM and TG in Port Moresby to fill this information gap" (page 3 line 106-108) without anly explanation "why" MSM and TG were recruited in three cities as mentioned in method part. Is there any consideration to select these three cities?

2. Methods
- It is not clear the reason for selecting "a very low criterion of p-value <0.01" as threshold (page 7, line 172). Authors also did not mention what the aims of multivariate model whether it aims to predict or control potential confounding variables. In many studies, some authors preferred to use "enter model" - a multivariate model developed by incorporating all independent variables into a model, in order to investigate the adjusted effect by controlling other existing independent variables. Please elaborate more on this issue.
- Is there any multi-collinearity testing performed prior to multivariate analysis?

3. Results
- For the outcome variable, such as HIV prevalence in this study, the 95% CI can be mentioned when the proportion is interpreted.
- It is important to show readers the result of bivariate analysis for all independent variables which included OR, 95%CI OR, and p-value. Even though not all bivariate results showed a p-value <0.1 as threshold for inclusion in multivariate analysis, readers want to be informed about the magnitude of association for each pair of independent and dependent variables. Therefore, please add bivariate
results for other independent variables in Table 4 and 5, or please add in supplements for the benefit of the readers

4. Discussion
- Authors did a good job for discussion part. Moreover, I suggest putting the current situation related to HIV prevention program in three cities and compare what have been done possibly by stakeholders and NGO and what should be done according to findings in this study in order to justify the title of this manuscript "One size does not fit all".
- With low cases of HIV-positive in Mt. Hagen leads to the multivariate model cannot be produced. However, it does not mean that the discussion related to the findings in Mt.Hagen is neglected. I noticed interesting findings from descriptive statistics that even though interventional factors such as the proportion of HIV testing, having contact with peer outreach, given free condoms were found at low level among samples recruited in Mt. Hagen, but interestingly, HIV prevalence was the lowest and the protected sex (i.e., condom use) with a men or TG was the highest compared to the findings in two other cities. Please discuss this interesting finding.

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

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If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.
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