Reviewer’s report

Title: The characteristics of mixing patterns of sexual dyads and factors correlated with condomless anal intercourse among men who have sex with men in Guangzhou, China

Version: 0 Date: 08 Dec 2018

Reviewer: Bin Yu

Reviewer's report:

Review comments:
This article investigated the pair of demographic characteristics between the respondents and their partners, and estimated the risk of CAI, and investigated the association between social communication types with the CAI. Finding of the study were interesting, and of significance. I have a few comments:

1. The title may need revise since it only covered part of the research findings.

2. Page 3 line 48: Please explain what the HIV infection rate among MSM is.

3. Page 3 line 58: the first sentence of the second paragraph need revise to make it clear.

4. Page 5 line 53: please provide reference for the statement "an estimated xxx in 2008". Is there any updated information for the number of MSM as well as the incidence rate of HIV among MSM?

5. Page 6 first paragraph: exclusion criteria?

6. Page 7 first paragraph: the eco-network is part of the measurement, and suggest to be a subsection of measures.

7. Page 7 second paragraph: the social network should be moved to the data analysis part. More details should be provided for the egocentric network analysis.

8. Page 8 line 6: Did authors rescale the options: 1□2, 5□10? And why authors do this?

9. Page 8 line 20-28: the mixing matrices should be part of statistical analysis.

10. Page 8 line 31: How the CAI measured in the study? Please provide more detail.

11. Some variables in the results were not introduced in the measures part, such as private or public place, internet or non-internet, please revise.

12. Did authors measured the sexual roles and sexual identities among the MSM?
13. Page 9 first paragraph: please provide more information about how the GEE was used to account for the correlation clusters.

14. Table 1: missing something in the first row of the table. Some variable categories could be combined due to the small number of cases. No need to include missing in the table.

15. Table 2: it was difficult to understand Table 2 when just looking the table, and authors may provide some notes under the table to assist the readers to understand.

16. Table 3: it will be helpful if authors add "(ref)" to the place with 1.00 the concordant mixing group.

17. Please go through the whole paper and improve the language.

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

No

**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 recommend additional statistical review

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

Needs some language corrections before being published

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