Reviewer’s report

Title: New types of drug use and risks of drug use among men who have sex with men: A cross-sectional study in Hangzhou, China

Version: 0 Date: 02 Jan 2018

Reviewer: Yu Liu

Reviewer’s report:

This manuscript addresses a primary risk factor (drug use) research among Chinese men who have sex with men that drives the HIV spread and epidemics. My specific comments are below.

Abstract

1. Authors need to define "MSM" before using the acronym.

2. Authors need to provide some examples of the new drugs upfront being researched in the paper.

3. The 2nd part of the Methods reads a bit awkward—I think it should be if previous HIV tests were negative or unknown then they need to have an HIV test upon study entry to confirm their serostatus. Besides, the Methods should be expanded with more details.

4. The 2nd sentence of Findings has grammatical error.

5. The 2nd sentence of Conclusion has grammatical error.

Background

1. Authors need to fix reference #2

2. Authors fail to provide references for several statements in the Background. Line 55 (several studies, but just list one reference); Line 63 (Previous studies, but no reference);Line 65 (independent risk factors of HIV, no reference), line 67 (the LA study; no reference),m

3. The 2nd paragraph starting from line 63, seems to recklessly itemize previous studies of some drugs among global MSM to prove these drugs are risk factors of HIV and UAI. However, much information described here are not well organized; some are also redundant. Perhaps authors need to re-arrange global evidence, make them informative yet concise.

4. Please consolidate evidence from Line 84-94 and provide a brief evidence-based reason why this may occurred at a high prevalence among Chinese MSM.
The last paragraph - It seems recreational drug use research among Chinese MSM has been studied in many ways. The only "lack of such studies among Hangzhou MSM" may not be sufficient enough to justify the significance of the current study. Perhaps authors need to more clearly define the rationale and identify gaps that leads to the current study. Please also list the objectives of the study. It is also not clearly this current study aims to research this among HIV-positive or HIV-negative MSM.

Methods

1. Sampling methods: (1) It looks like it was just a multiple convenience sampling. If it is literally a snowball sampling, please describe more details. (2) What are the inclusion criteria? (3) Sentence is too long with grammatical errors, Line 117-120. (4) Sample size formula and rationale need to be explained in more details.

2. Did participants need to be local residents or live in the city for a certain length of time?

3. Authors need to clearly and specifically define and list the "new types of drugs" being researched in this study. The measurement of outcome and exposure variables need to be clearly defined as well.

4. Fisher's exact test should be used for those with sparse cell (n<5). Authors need to check table 1 distribution and then use the correct statistical test.

5. Statistical analysis: Authors do not explain the modeling building strategy. Was there any backward selection procedure to retain the minimal sufficient set of covariates? Were collinearity assessed? Any effect modification pre-defined and assessed?

6. It is not clear the authors are building a predictive or explanatory model. If an explanatory model was attempted, then the "table 2 fallacy" was committed in such a multivariable modeling strategy. Please justify.

Results

1. One of the primary weaknesses of the current study was lumping all types of new drugs into one category. This may increase analytical sample size, but scientifically, it masks important information. Rush Poppers deserves special attention. This should be discussed in the limitation.

2. Authors need to describe total sample size in the title of each table (1-5)

3. What does it mean by "high-risk behaviors in the past 3 months"? How was it defined?

4. It is uncertain how authors choose covariates to be evaluated for table 4 and 5. Is there any supplemental table to show the significance from any univariate analysis?
5. Table 5 is of concern because of "overfitting" issue. The N for "case" (HIV+ and drug user) might be too small.

Discussion

The Discussion section need to be significantly improved by discussing linkage between findings from the current study, evidence from other Chinese studies as well as international studies.

In addition, the entire manuscript needs to heavily proofread and enhanced in terms of language and scientific writing.

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.

Unable to assess

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:

Not suitable for publication unless extensively edited

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