Author’s response to reviews

Title: The Interaction between HIV Testing Social Norms and Self-Efficacy on HIV testing among Chinese Men Who Have Sex with Men: Results from an Online Cross-Sectional Study

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Version: 1 Date: 06 Sep 2018

Author’s response to reviews:

Dear Dr. Jeb Jones,

Thank you for your helpful comments on this manuscript. We have taken these comments and used them to make the manuscript stronger. Find below point-by-point responses, a clean version, and a tracked changes version of the manuscript.

Thank you for your consideration.
Response to the comments

Response to Reviewer 1

1. “In terms of the rationale and justification for the study - not enough case is made in your paper. This needs to be addressed. What is new that people will take from your study and what contribution does your paper really make to the existing of literature in the field of psychosocial correlates of uptake of HIV, besides, of course, sharing another set of empirical findings? First, clearly identify the main points you would like to make in the paper. This gets lost in the current draft. Once the analysis plan has been streamlined, a reader can clearly walk through the major points that you are trying to make. In the process, what indeed could be the novel and interesting contribution of the paper doesn't come through. In short, I'd like to see an introduction that leads clearly and directly to the proposed hypotheses. Provide an introduction that focuses on a) what we already know from the literature on the association between social norm/self-efficacy and HIV testing. For instance, in your literature review you did not mention previous research articles that already demonstrated such relationships (e.g. [1]). b) What new concepts this study can address that make a distinct contribution beyond the prior studies on the association between social norm/self-efficacy and HIV testing. c) State the hypotheses of the research. If it is unclear whether self-efficacy and social norms can interact with each other, why you are not providing any theoretical basis for this (why and how these variables should interact?)”

RESPONSE: We are grateful for the reviewer’s valuable suggestion. We agree that further strengthen the introduction, point out the knowledge gap the study aimed to fill and state the hypothesis will strength this manuscript. We have revised the background portion of the manuscript and further illustrated these.

2. “Was a missing data analysis done, and if so, what was the procedure and the results? If not, why? I suggest the authors consider imputation procedures recommended by Graham [2]”
RESPONSE: Thanks for this comment. This is an online survey, and the participants need to fill out every question in order to move to the next question, so there is no missing data issue in our survey.

3. “To investigate the interaction effect, you should calculate simple intercepts, simple slopes, and the region of significance as well as testing and probing the significant interaction following the recommendations of Preacher, Curran, and Bauer [3].”

RESPONSE: Based on the comments from the reviewer, we added simple intercepts and simple slopes. We used logistic regression in this study, not multiple linear regression, so we cannot calculate the region of significance.

4. “It is not clear to me what the theoretical and practical implications of the study are. At present I feel that the discussion focuses mainly upon description of the findings and not enough on the broader theoretical and practical implications of this data. I am left unsure as to what the meaning of the results are.”

RESPONSE: Thank for your suggestion. We have revised this in the article and further mentioned how to translate our findings into practical implementations in the revised manuscript.

Response to Reviewer 2

1. “How is the HIV testing self-efficacy (HTSE) derived, and where is it adapted from? Have the internal and external consistency been tested and what is the Cronbach's alpha value? It is problematic without this important information and the validity of the scale will be questionable. If that is the case, perhaps, a latent class analysis framework would be more appropriate. The same question also applies to the social norms. If there is a reference, please cite to justify the application among Chinese MSM.”

RESPONSE: Thank for your suggestion. We have further defined self-efficacy and social norm, and provided Cronbach's alpha value of these two measures, and have provided references for these two in the revised manuscript.
2. It is surprising that the authors did not describe HIV testing definition and categorization in the Methods. Please supplement this part in details.

RESPONSE: Thank for your suggestion. We have revised the method portion of the paper and describe the HIV testing for three different HIV testing outcomes we measured.

3. HIV testing frequency data should be presented in table 1.

RESPONSE: Thank for your suggestion. We have put this information into the revised table 1.

4. Does the linear assumption hold for both HTSE and social norm with regard to the log odds of the HIV testing? If yes, please state; if not, perhaps cubic spline or categorical assessment would be appropriate.

RESPONSE: The linear assumption holds for both HTSE and social norm with regard to the log odds of the HIV testing. We divide the HTSE and social norm into 10 groups by percentile(P10, P20….P90), respectively. We used trend chi-square test to analyze the relationship between the group and HIV testing. The P value of this testing was less than 0.05, so the linear assumption was ok.

We also analyzed the linear assumption through semiparametric regression map (Semiparametric model fitting function of logit(p) and independent variables), the linear assumption was also ok. We listed this in supplement 1.


5. It is unclear how the multivariable model was built - the selection of confounders and covariate adjustment, and the rationale behind the scene. Please elaborate
RESPONSE: Thank for your suggestion. We have revised the statistical analysis portion of the paper. We mentioned that “We used multivariable logistic regression to analyze the influencing factors of HIV testing. Age, education, marital status, and income were a covariate in the model. These variables were chosen based on our prior knowledge, and a DAG was drawn to assist in this analysis.”

6. “The use of logistic regression with odds ratio to report will inflate the estimate because the prevalence of all HIV testing outcomes were all above 10% cutoff point. Prevalence ratio from a Poisson regression with a log-binomial function would be the best to use. This is a comment. Authors may or may not take this.”

RESPONSE: Thank for your suggestion. After thinking about this question more carefully, we still kept our original plan, as this will make the interaction analysis more reasonable and easier.

7. “Please be consistent with the use of "HIV testing self-efficacy" and "self-efficacy" throughout the paper.”

RESPONSE: Thank for your suggestion. We have revised this in the paper

8. “Please change "rate" to either "prevalence" or "proportion", as cross-sectionals study does not produce "rate".”

RESPONSE: Thank for your suggestion. We have revised this in the article.