Author's response to reviews

Title: Substance use, risky sexual behaviors, and their associations in a Chinese sample of senior high school students

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Version: 3 Date: 30 November 2012

Author's response to reviews: see over
Dear Editor,

We have revised the manuscript ID 1474625571774489 entitled "Substance use, risky sexual behaviors, and their associations in a Chinese sample of senior high school students" in accordance with the reviewers’ suggestion. According to the suggestion, we have responded to each of the points made by the reviewers.

We hope that our revised manuscript is acceptable for publication in the BMC Public Health. We would appreciate any constructive comments for further revisions.

Sincerely yours,
Shenghui Li, MD, PhD
Hong Huang, MD, PhD

Responding to each of the points made by the reviewers:

Reviewer's report
Title: Substance use, risky sexual behaviors, and their associations in a Chinese sample of senior high school students
Version: 2 Date: 19 September 2012
Reviewer: Andrew Springer

Reviewer's report:
This study aimed to “...assess the prevalence of sexual and substance use behaviors among a Chinese sample of senior high school students. And more specifically, the associations of socio-demographic factors and substance use with risky sexual behaviors were examined...” Strengths of the paper include the research question itself, as the authors indicate that few studies have been published on adolescent sexual health risk behavior; a large sample of Chinese high school students from Shanghai; a systematic approach for collecting data-including the application of informed consent procedures as per the authors’ description; a generally well-described analytic plan; and a relatively strong introduction and discussion that provide context to the study and the study findings. I appreciate the authors’
efforts to address my previous critiques, and the authors have substantially improved the manuscript. Nonetheless, there are still specific aspects of the paper that merit further attention:

Major Compulsory Revisions:

1.) Writing/grammar: Recognizing the challenges of translation, the paper nonetheless needs review and editing from a professional editor. In its current form, there are many grammatical errors that detract from the science and findings that are presented. The paper would also benefit from greater proof-reading by the authors.

   **Re:** According to the suggestion, we have invited a professional editor to review and edit the full paper. We hope this revised version is much better in language and grammar than the last one.

2.) Measures

a. The authors state that the AHRBQ included 20 items, and then provide the breakdown of those items by the different risk behavior domains. While a minor issue, the authors then describe multiple demographic questions that were also included. The authors should qualify on p.8 that there were 20 “risk behavior” items, in addition to demographic items.

   **Re:** Thanks for your comments. We have revised the description regarding the AHRBQ items.

b. The authors indicate “the AHRBQ was developed by adding 9 items according to an updated literature review, qualitative interview in pilot study, and reliability assessment.” What was the literature review that informed those 9 items? How did the qualitative interviews in pilot study inform these 9 items- and how were those conducted and with whom? What was the reliability assessment (test-retest?)- and how did that inform the addition of 9 items?

   **Re:** The AHRBQ was derived from our previously established instrument “The Adolescents' Reproductive Health Questionnaire (ARBQ)”. The ARBQ was used to collect
information on adolescents’ knowledge, attitude, and behaviors concerning HIV/STI, which has been described previously [1]. In the ARBQ, there were 11 items regarding HIV/STI risk behaviors [1]. When we began to design the present study, we considered to focus on substance use and risky sexual behaviors among adolescents. During the designing of AHRBQ, we considered if we can directly adopted 11 items related to HIV/STI risk behaviors in the ARBQ. However, we found that some substance use behaviors, such as oral/rhinal drug use, which are HIV/STI risk behaviors, however, were not included in the ARBQ. Therefore, we made a lot of literature [mainly published paper, 2-8] review to supplement the questionnaire.

When the first version of AHRBQ (which included 22 items) was formed, we discussed with professionals in risk behavior research field about the items and responding scales. In pilot study, approximately 50 high school students from two schools were invited to answer the first version of AHRBQ. Based on the results of pilot study, we evaluated the internal reliability of the first version of AHRBQ. Combined the above work, two items (Do you remember your age of the first cigarette smoking? Do you remember the age of your first alcohol drinking?) were deleted.

In addition to demographic items, the final version of the AHRBQ included 20 items and the 20 items were conceptually grouped into 3 dimensions: exposure to sexual behaviors in lifetime (6 items); exposure to sexual behaviors in last three months (10 items); exposure to drug-use behaviors in last three months (4 items).

Reference


c. It would be helpful to indicate to reader that response scales for these items are presented in Table 2.

   **Re1** We have supplemented a table to indicate the response scales for all items presented in Table 2.

d. Internal consistency: It is not clear why the authors ran a Cronbach alpha for the overall questionnaire, especially given the different response options and the fact that the authors are measuring different behaviors/constructs. A rationale/description is needed to understand why an overall Cronbach alpha was run. Secondly, for the specific domains (e.g, “Exposure to sexual behaviors in lifetime (6 items)”), the response options are different. Thus, then, how was a Cronbach alpha run? This question was raised in an earlier review and has not been adequately addressed.

   **Re1** In statistics and research, internal consistency is typically a measure based on the correlations between different items on the same test (or the same subscale on a larger test). It measures whether several items that propose to measure the same general construct produce similar scores. Internal consistency is usually measured with Cronbach's alpha.

   In the AHRBQ, all the items were used to evaluate risk behaviors concerning HIV/STI. Therefore, an overall Cronbach alpha was run.
Cronbach's alpha is calculated from the pairwise correlations between items. It is not necessary that all items have the same response options. Therefore, we can evaluate the internal consistency of overall questionnaire (in addition to demographic items) and the three dimensions.

e. Test-retest reliability: No information is provided on when the test-retest assessment took place. Did this happen in the same day? Over a week period? What was the sample that was used to assess test-retest reliability? While authors provide some of this information in their response, this information is needed for the manuscript.

Re: The test-retest reliability was evaluated over two week period in a subgroup of our sampled students (n=256).

The test-retest reliability was assessed in a subgroup sample of 256 students who responded to a request to complete a second rating of the AHRBQ at a two-week interval.

According to the suggestion, we have supplemented some information related to the test-retest reliability evaluation in the Methods.

Table 1 The test-retest reliability of the AHRBQ

<table>
<thead>
<tr>
<th>Exposures</th>
<th>N</th>
<th>ICCs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure to sexual behaviors in lifetime (6 items)</td>
<td>251</td>
<td>0.69</td>
</tr>
<tr>
<td>Exposure to sexual behaviors in last three months (9 items)</td>
<td>248</td>
<td>0.75</td>
</tr>
<tr>
<td>Exposure to drug-use behaviors in last three months (4 items)</td>
<td>245</td>
<td>0.72</td>
</tr>
<tr>
<td>Total</td>
<td>242</td>
<td>0.85</td>
</tr>
</tbody>
</table>

f. Why is masturbation included in a study of sexual health risk behavior? Masturbation is the safest form of sexual activity. Justification is needed, or this measure should be discarded. In the authors’ response to a previous critique, the authors indicate that they ‘just wanted to know a little about masturbation…” If so, this behavior should not be labeled as a risk behavior.

Re: Just as the reviewer pointed out, masturbation is a safe form of sexual activity, and therefore, we have deleted the item from Table 2. Except for the item with masturbation, the AHRBQ includes 19 behavior items related to HIV/STI.
g. There is a need for consistent construct labels of the measures examined. For example, on p.9, the authors state: “Multiple partner sexual intercourse”, on p.9 “multiple partners in last three months.” On p.9: “ongoing unprotected sexual intercourse (Defined as “sexual intercourse without condom use”)”; on p. 12 the authors use the term “unprotected sexual intercourse in last three months.”

**Re:** According to the suggestion, we have checked the full manuscript to make the labels of the measures consistent.

3.) Analysis

a. What does ’90 females’ mean in paragraph 4 on p.9? Was this a sample size-or a mistakenly placed number? Similarly, on p. 13: “…which may partly account…” Proof-reading is needed.

**Re:** We consider that some mistakes may happen in the transformation of different computer systems. But anyway, we have done more about proof-reading.

b. The authors indicate that all demographic characteristic variables and substance use variables were entered into the models. However, on p.12, we learn that the authors also examined the association of younger age of first sexual intercourse and multiple-partner sexual intercourse. A more detailed description of the analyses conducted is needed in the analysis section.

**Re:** We revised the manuscript a lot of times before the submission. Correspondingly, the analysis was done many times. The description was not clear and accurate in analysis section. We are really sorry for the carelessness.

We have done corrections and supplemented more detailed information regarding data analyses in the analysis section.

c. A description of how the variables were created is needed, given that it appears that new categories were constructed for several of the behaviors (e.g., substance use behaviors) from the response options.
We have supplemented more detailed information regarding the variables in the analysis section.

4.) Results:
a. P.12: The authors state “…after controlling for sociodemographic factors and substance use behaviors, two factors in the final model were significantly associated with increased likelihood of unprotected sexual intercourse…” often/usually cigarette smoke… and ever had illicit drug use…” Authors should clarify: “after controlling for other substance use behaviors…” as the authors are assessing here substance use behaviors not as covariates, but as independent variables.

Re: Thanks for your advice. We have revised the paragraph according to the advice.

5.) Consent/Ethical Oversight of Study: In a previous version of this paper, the authors indicate that approval was obtained from the Ministry of Education of the People’s Republic Of China; in the current version, the Ministry of Education is not cited, but rather the school board. Is the school board the Ministry of Education?

Re: Sorry for the inconsistence. Actually, the study protocol was approved by the Ethics Committee of Shanghai Jiao tong University School of Medicine and Shanghai Municipal Education Commission. When we described the approval and Ethic of the study, we didn’t know how to explain. At the second revision, we discussed the question and revised the description.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Not suitable for publication unless extensively edited

Re: We have invited a professional editor to review and edit the full paper. We hope this revised version is much better than the last version in language and grammar.

Statistical review: Yes, and I have assessed the statistics in my report.
Declaration of competing interests:

I declare that I have no competing interests