Author's response to reviews

Title: Sexual behavior and awareness of Chinese university students in transition with implied risk of sexually transmitted diseases and HIV infection: A cross-sectional study

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

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Title: Sexual behavior and awareness of Chinese university students in transition with implied risk of sexually transmitted diseases and HIV infection: A cross-sectional study

I would like to sincerely thank you and the third reviewer for giving us critical advice for improving our manuscript.

We have carefully considered all the valuable comments and have modified and simplified the manuscript accordingly.

This covering letter contains a point-by-point list of the changes made, and the revised manuscript is also included for further consideration.

Authors of this manuscript would appreciate your consideration of this re-submission.

Thank you very much, in advance.

Yours sincerely,

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Reviewer's report

Title: Sexual behavior and awareness of Chinese university students in transition with implied risk of sexually transmitted diseases and HIV infection: A cross-sectional study

Reviewer: Andrew Vickers

Numerous aspects of the statistical analyses could be improved. These should all be seen as essential revisions: 1, 2, 5 and 8 are minor, the rest major

1. Use appropriate levels of precision. It is silly reporting mean age to two decimal places: are we really interested in how old students are to the nearest 4 days? Similarly, don't give p values to 3 significant figures.

   - As recommended, mean age and mean number of sexual partners are now changed to have one decimal place (Pages 7 and 10, and Table 1). Similarly, P values have been modified to be simplified with only two significant figures. For those highly significant P values, we have followed the recommendation by the reviewer (comment No. 2).

2. Do not report p values of zero (e.g. top of page 9, chi of 40.8, p=0.000). There is no such thing as a zero p value, every experimental outcome has a non-zero probability. Say p<0.0005 instead.

   - As required, those highly significant P values have been changed appropriately in the text and all the tables.

3. Don't compare p values. For example, on page 8, the authors state that "rates were significantly lower for male students in lower rather than higher grades, but not for females". The correct approach here is a multiple regression, with grade, gender and grade by gender interaction. The p value for the interaction term tests whether grade makes a difference for one gender but not the other.

   - We did not intend to compare P values and our inappropriate phrasing in the text may have caused this confusion. Therefore, we have changed those vague sentences in the text to show we only wanted to describe presence or absence of any trend in risk characteristics between low and high grade students (pages 8, 9).
4. Percentages should add up to 100%. For example, on page 8, 85% of respondents were heterosexual, 2% homosexual and 1% bisexual. Which makes about 12% of the population rather confused.

- Though proportions including missing cases have been shown in the table 2, as correctly mentioned by the reviewer, we have changed the text accordingly saying: over 85% of respondents reported only having sex with members of the opposite sex during their lifetime, 3.4% of male and 2.9% of female respondents reported having had homosexual and/or bisexual sexual relationships, with the rest failed to report a clear answer. (page 8).

5. Some of the numbers are clearly erroneous. For example, in table 2, a total of 9.3% of women had 2 or more sexual partners. However, no grade had less than 11% of women with 2 or more sexual partners. Clearly an average cannot be less than all of the numbers that go into the average.

- With many thanks for correcting our mistake, we have corrected the above mentioned part in the table 2, and also re-calculated all figures in the text and tables to ensure there is not such a mistake.

6. In table 4, give a p value for the test for trend.

- As required, P values for the test for trend have now been calculated and reported in the table 4 (page 26). These P values indicate existence of any significant trend in odds ratios from lower to higher grade students’ risk characteristics.

7. In table 4, the reference category isn’t clear. For example, as regards number of sexual partners (which, btw, rather confusingly compares 1 vs. more than 2) there is an odds ratio of 0.18 for women in grade 1 compared to 4. Does this mean that women in grade 1 are more or less likely to have multiple sexual partners than women in grade 4?

- As required, variables listed in the table 4 (page 26) have now been changed to be clearer with reference category being specifically defined. For example, the variable related to the time of first sex has been changed to “Having first sex before university (referred to never or having first sex at university)” in order to be clearer for readers.
8. The univariate and multivariate results should be compared. For example, if something is significant on univariate but not multivariate analysis, you could say e.g. "the apparent association between A and B was actually due to C"

- There is a comparison between bivariate and multivariate analyses on page 10. We also explicitly stated why associations between grades and some risk characteristics became insignificant in multivariate analysis.

9. What is a grade anyway?!?!?

- Here, grade means an academic year of study and this has been added to the method part (page 5).

Overall, the paper needs to be simplified down. I counted over 120 p values. Now remember that a p value gives you information about a specific hypothesis. Do we really want to test >120 hypotheses on this data set? I doubt it. The authors need to identify some key questions, work out the best methods to answer them, and run a limited number of analyses.

- As recommended, the manuscript has been simplified and unnecessary *p* values were deleted accordingly (Table 2 and 3). Where possible, some variable categories in the tables were combined to make them more concise (Table 2, 3, and 4). Some unnecessary explanations have been also deleted from the text (pages 8 and 9).