Author's response to reviews

Title: A cross-sectional study of HIV and syphilis infections among male students who have sex with men (MSM) in northeast China: implications for implementing HIV screening and intervention programs

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Version: 2 Date: 2 March 2011

Author's response to reviews: see over
March 3, 2011  
Dr. Jigisha Patel  
BMC Public Health  
BioMed Central Ltd  
Floor 6236 Gray’s Inn Road London WC1X 8HB United Kingdom

Re: A cross-sectional study of HIV and syphilis infections among young male students who have sex with men (MSM) in northeast China: implications for implementing HIV screening and intervention programs

Dear Dr. Patel,

Attached please find our revised manuscript entitled “A cross-sectional study of HIV and syphilis infections among young male students who have sex with men (MSM) in northeast China: implications for implementing HIV screening and intervention programs” for your review. The manuscript has been reviewed by a native English speaker and we have addressed all of the reviewers’ comments. We have also made all necessary format changes. All changes have been detailed in the point-to-point response to reviewers listed on the following pages.

My coauthors and I would like to thank the reviewers for their insightful comments. We believe that this manuscript has been further improved by this revision. Thank you agreeing to review our revised manuscript.

Sincerely,

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Editorial Requests:

1) We recommend that you copyedit the paper to improve the style of written English. If this is not possible, you may need to use a professional copyediting service. Examples are those provided by the Manuscript Presentation Service (www.biomedes.co.uk), International Science Editing (http://www.internationalscienceediting.com/) and English Manager Science Editing (http://www.sciencemanager.com/). BioMed Central has no first-hand experience of these companies and can take no responsibility for the quality of their service.

We would be grateful if you could address the comments in a revised manuscript and provide a cover letter giving a point-by-point response to the concerns.

Please also highlight (with 'tracked changes'/coloured/underlines/highlighted text) all changes made when revising the manuscript to make it easier for the Editors to give you a prompt decision on your manuscript.

Please also ensure that your revised manuscript conforms to the journal style (http://www.biomedcentral.com/info/ifora/medicine_journals ). It is important that your files are correctly formatted.

Reviewer's report
Title: A cross-sectional study of HIV and syphilis infections among male students who have sex with men (MSM) in northeast China: implications for implementing HIV screening and intervention programs
Version: 1 Date: 9 February 2011
Reviewer: Lei Gao

Reviewer's report:
Major Compulsory Revisions
1. Potential selection bias occurred during subject enrollment, which may influence study results, should be discussed in the text. In addition, potential confounding effect caused by the studied variables should be discussed as well.
   We agree and have added these as limitations in the discussion section (page 11, paragraph 3).
2. As the authors mentioned (Discussion section, Para 9), this study did not gather the detailed information on types of illegal drugs used. Please clarify how "illegal drugs" was defined or explained to the study subject in the questionnaire.
   And in the Results section, Para 3, please add some results on drug use.

We have explained the illegal drug using definition, and data collection method in the method section:
“Data were collected on demographics, sexual behaviour, history of drug use (self-reporting of ever using opium, heroin, methamphetamine, morphine, cannabis, cocaine, dolantin, ketamine, triazolam, or amphetamine), and medical history through standardized
questionnaires that were administrated through face-to-face interviews by trained local physicians.”

And in the Results section (Para 3), we revised it with:

“Very few (n=8, 1.8%) self-reported had ever used at least one kind of above described illegal drugs and none had ever injected drugs.”

3. In this study, HIV/AIDS information obtained through free educational services and materials was found to be negatively associated with HIV prevalence (OR: 0.2; 95% CI: 0.4-1.0). Therefore, it should not be described as a "risk factor" (Abstract and Results sections).

We have changed the language from “risk factor’ to “variable associated with”

Minor Essential Revisions
1. Please clarify what kind of "stepwise multivariate logistic regression" model was used for data analysis in the Results section (backward or forward?).

We have revised the text to “Univariate logistic regression and forward stepwise multivariate logistic regression were used to determine adjusted odds ratios (aOR) for HIV infection related risk-factors. Marginally significant variables with p < 0.20 in univariate analysis were included in multivariate analysis. Variables with p <0.1 were retained in the final multivariate logistic model in a forward stepwise manner.”

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Needs some language corrections before being published
Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests: I declare that I have no competing interests.

Reviewer's report
Title: A cross-sectional study of HIV and syphilis infections among male students who have sex with men (MSM) in northeast China: implications for implementing HIV screening and intervention programs
Version: 1 Date: 21 February 2011
Reviewer: Tobi Saidel
Reviewer's report:
Comments coded as:
DR (Discretionary Revision)
MER (Minor Essential Revision)
MCR (Major Compulsory Revision)

Background
Para 1:
For a paper addressing China, maybe the opening paragraph (about MSM in the USA) might not be such a helpful point of comparison. DR.

We agree with his idea, and have deleted the description of HIV epidemic among MSM in the USA.

Para 2:
The studies found that a range of 27.9-72.3% of MSM were college educated. This is a very broad range (without knowing who these studies were done on). What proportion of students is men who have sex with men might be the more relevant question? DR

Although this range is wide, it is difficult to find data related to the proportion of students that are MSM, so we have cited estimates from studies conducted on MSM populations in China.

Para 3:
3.7% - 10.3% of male college students report at least one episode of sex with another man. If any of these papers qualify what “episode” means or whether this is “ever” or in the past year, it would be helpful to discuss because size of the population is so key and this is really the only reference to size of the population in the paper. DR

We have changed the language in the text to “male college students reported ever having at least one episode of sexual intercourse with another male”

In order to better clarify the size of this population we edited the text in the preceding sentence to read “By the end of 2009, there were an estimated 46.4 million high school students and 29.8 million college students in China, approximately half of whom are male”

There seems to be conflicting information. First it says that “Students accounted for 3.76% of newly reported HIV cases between Jan 1, 2009 to May 31, 2010. But later in the same paragraph it is reported that 1.37% of infections were among students in 2009. Can these both be true? Might this be a function of the number of students tested relative to other groups tested? DR

Yes, both of them are true. The first proportion of “3.76%” described HIV epidemic in one of largest city of Hangzhou, China. And, the second proportion of “1.37%” was the HIV epidemic description among total Chinese students by China Ministry of Health. This has been clarified in the text.
It is only in the last paragraph of the introduction that the reader learns that this study is about Liaoning. It might be helpful to put it earlier so that there is more of a context for the introduction. MER

Information about Liaoning has been moved to earlier in the introduction.

Methods
Para 2
Was there a particular reason for having participants recruit their sexual partners? This is not a random design of course, so there is no question of reporting “prevalence” or generalizability. But having people recruit their partners makes it more likely that you capture “co-infection” or “co-uninfection” MER

This recruitment method was used for convenience. It is true that recruiting partners may bias the results and this limitation has been added to the discussion.

Para 4
This statement is not clear - Why would you again do RPR on TPPA positives when TPPA was confirmatory for RPR positives?

“Serum specimens that were positive for RPR were confirmed by Treponema pallidum particle assay TPPA (TPPA, Serodia, Japan), positive TPPA cases were also tested by RPR. Subjects with serum positive for both TPPA and RPR were determined to be currently infected with syphilis”. MER

*We confirmed that, the correct process of syphilis testing in this survey was that, “Serum specimens that were positive for TPPA (TPPA, Serodia, Japan) were retested for rapid plasma reagin (RPR, Diagnosis t; Shanghai Kehua, China) assay, subjects with serum positive for both TPPA and RPR were determined to be currently infected with syphilis”, and we have revised the description in the method section.*

Results
Para 3
Instead of median number of male sexual partners in the most recent 6 months, suggest it that you group these by numbers of partners (e.g 1, 2-3, 4-5, >5). That will be more informative. MER

*We have changed the description of number of male sexual partners in the most recent 6 months with that, “In the most recent 6 months, 57.1% (249/436) of participants had one male sexual partners, 28.7% (125/436) had 2-3 male sexual partners, 7.6% (33/436) had 4-5 male sexual partners, and 6.7% (29/436) had >5 male sexual partners”.*

Suggest defining “regular” male partners since most of these men are young and unmarried. So then what does regular mean? MER

*We have added “regular (non-casual)” to better define “regular”*
Para 5
Sentence below is not clear.
“Several study participants (n=25, 5.7%) knew that their male sexual partners were infected with HIV, while 138 (31.7%) declined to used condoms with their regular male sexual partners even if they knew their regular male sexual partner was infected with HIV”.
There are two ideas mixed here that would be helpful to see separately (one is knowing your partner is infected and the other is using a condom). Suggest your report separately the proportion who did not use condoms among those who knew their partner was positive? MER

*We did not make changes to this paragraph since paragraph 3 reports on participant condom use, paragraph 5 emphasizes the existence of risk behavior among those participants who know their partner is HIV positive.*

Para 6
Maybe you can say that these factors were “associated with” being HIV positive, as opposed to being “risk factors”. Many of these factors (e.g. family knowing sexual orientation, receiving information from doctors, etc. are not “risk factors” for HIV. It’s only the cross-sectional nature of the study (and the inability to understand the temporal relationship) that produces this “counterintuitive” result. Inconsistent condom is a risk factor, but you would not be able to demonstrate that from this design because you don’t know when the person became HIV positive (relative to becoming a regular condom user). MCR

*We agree and have changed the language “risk factor” to “associated with”*

Discussion
Para 2
Since the term “significant” suggests a statistical test you might choose another word DR

*We have changed the language*

Para 3
Suggest you use the term “report” i.e. male college students report engaging in sex with men DR

*We have changed the language*

Para 4
This comparison with parents in the USA is not clear. What is the connection? What is known about the relationship between parents knowing sexual orientation and likelihood of HIV infection in the USA that makes it important for you to raise the point here? MER

*We have deleted this discussion point in the discussion section.*

Para 5
The concept of “risk factor” appears to be confused with association. In a cross-sectional study an association does not imply causality. MCR

*We agree and have changed the language “risk factor” to “associated with”*

Para 6
What association did you “expect” to find here? As you point out, the
cross-sectional nature of this study makes it not “conducive” to this type of analysis. MCR

The expectation is that those who receive HIV information from clinicians are less likely to be HIV positive, but since we did not gather information on the type of clinician or reason for visit with the clinician, along with the cross-sectional nature of the study we are unable to conclusively determine the causal nature of the relationship. We have added the text “Somewhat paradoxically” to indicate our expectation

Para 8

What is the significance of knowing that those who bleed after anal intercourse are more likely to be HIV infected? What does it suggest? How is it helpful? DR

Also, do you want to say that condoms with water-based lubricants reduce the bleeding? Or they reduce the risk of HIV transmission associated with bleeding?

(Or both)

The association between bleeding after sex and HIV indicates that measures should be taken to reduce bleeding to potentially prevent HIV infection. The following text was added to clarify the importance of condoms and water-based lubricants “in order to minimize the risk of anal and rectal bleeding and general HIV/STD transmission”

Para 10

The first limitation mentioned is that “This was a cross-sectional study and therefore temporal associations cannot be inferred”. So this then begs the question of why the analysis was done the way it was? (i.e. why the bivariate and multivariate regressions on HIV)? The cross-sectional studies are good for describing levels of risk behaviours known to be associated with HIV transmission (e.g. multiple partners, unprotected sex with multiple partners, etc). The real value of this study lies in the documenting of high levels of risk behaviour in this population, along with relatively high levels of syphilis and HIV prevalence. These should be emphasized, rather than the detection of risk factors through multivariate modelling. The latter is not appropriate because of the temporal issues mentioned by the authors. If this type of analysis is to remain in the paper, it should be clearly described as “looking for associations” with the understanding that the associations may or may not make sense because of the temporal issues. So that limits their value as “explanatory” variables. MCR

We changed the language “risk factor” to “associated with” given the cross-sectional nature of the study. Since confounding can still occur in cross-sectional studies, multivariate analysis was used to address the potential confounding of associated variables.

Conclusion

Para 1 I think the conclusions are right (i.e. relatively high levels of HIV, and high levels of risky behaviour). I think the knowledge of sexual orientation being known to parents is not a factor that is worth highlighting, since there are no data in the paper to support whether this is a good thing or a bad thing. As far as illegal drug use being a risk factor, it is not shown in Table 3 that this is an independent risk factor, so it’s not clear whether/where it fits. Injection drug use is a proximate determinant for infection (i.e. it is directly causal). Non-injection drug use would act by possibly contributing to more risky sexual behaviour. So this
link should be made clear if this is to remain in the paper. MCR

Although the relationship between sexual orientation known by parents and HIV infection is not well understood, we feel that it is a potentially important variable in this population and worthy of future research. Illegal drug use is written as “History of illegal drug use” in Table 3. The text has been changed to make this clearer. We explain at the end of the conclusion that general drug use may lower inhibitions which could result in higher risk sex. Tables – Table 3 is difficult to read. I couldn’t see what lines up with what so it wasn’t always clear which way the association went. MCR

Each cell of all tables is now enclosed in black lines for legibility and to comply with the journal’s formatting requirements

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

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**
I declare that I have no competing interests