Author's response to reviews

Title: Sex and Sport: Chlamydia Screening in Rural Sporting Clubs

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Author's response to reviews: see over
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RE: resubmission of revised manuscript; Sex and Sport: Chlamydia Screening in Rural Sporting Clubs Fabian YS Kong, Jane S Hocking, Chris K Link, Marcus Y Chen and Margaret E Hellard
MS: 5271152732288791

Dear BMC Infectious Diseases Journal

Please find attached the revised manuscript addressing the reviewer’s comments for the “Sex and Sport” project and detailed in this letter.

Looking forward to your further comments and guidance.

Kind regards

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Responses to reviewer’s comments

1. M. Jacques Nsuami

Page 4
1. “Urine Testing” sub-section: Please replace “Polymerase Chain Reaction” with “Nucleic Acid Amplification” since Aptima Combo 2 Assay and BD ProbeTec ET System are not Polymerase Chain Reaction sub-categories according to classifications from Chlamydia tests experts.

- The suggested changes have been made.

Page 5
1. Par. 1: Authors must clarify how positive cases managed by telephone consultation got their free 1g zithromax and what the three month follow up of positive cases consisted of.
2. Par. 1: “…three months after the initial consultation”: do the authors mean three months after treatment?

- The suggested changes have been clarified, including the follow up being undertaken three months after treatment.

Page 6
1. “Chlamydia prevalence” sub-section, lines 1-2: Because “sexually active” has been a recurrent theme in this study and the abstract does indicate that 77% were sexually active, the “Demographic details” sub-section must specify how many among the 709 participants were sexually active, and the definition of what constituted being sexually active must be provided.

- The suggested changes have been made in the demographic section detailing those who were sexually active and its definition.

2. “Chlamydia prevalence” sub-section, lines 2-8: Why didn’t the logistic regression begin by univariate analyses before calculating the age-adjusted odds ratios of chlamydial infection and the number of sexual partners? How did the authors decide which variables among those that were collected (as listed on page 4 under “Participants” sub-section and on page 5 under “Data” sub-section) would be adjusted for in multivariate logistic regression? Didn’t the authors think of alcohol and drug consumption as behavioral characteristics when stating in the “Analyses” sub-section on page 5 that odds ratios assessing behavioral associations with chlamydia were calculated?

- Univariate analysis was undertaken for all behavioural characteristics with the final logistic regression model including those variables with OR with p<0.05. Alcohol and drug use was not significantly associated with chlamydia infection. See tables 1-3 below
TABLE 1: ODDS RATIO FOR CHLAMYDIA INFECTION BY ALCOHOL DRINKING FREQUENCY IN SEXUALLY ACTIVE FEMALES

<table>
<thead>
<tr>
<th>Frequency of drinking &gt;4 standard drinks in the same day</th>
<th>Crude OR (95% CI)</th>
<th>Age adjusted OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least once a month or less</td>
<td>86</td>
<td>1</td>
</tr>
<tr>
<td>At least once a week or more</td>
<td>36</td>
<td>2.02 (0.5-8.0)</td>
</tr>
</tbody>
</table>

TABLE 2: ODDS RATIO FOR CHLAMYDIA INFECTION BY ALCOHOL DRINKING FREQUENCY IN SEXUALLY ACTIVE MALES

<table>
<thead>
<tr>
<th>Frequency of drinking &gt;6 standard drinks in the same day</th>
<th>Crude OR (95% CI)</th>
<th>Age adjusted OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least once a month or less</td>
<td>129</td>
<td>1</td>
</tr>
<tr>
<td>At least once a week or more</td>
<td>276</td>
<td>0.93 (0.3-2.5)</td>
</tr>
</tbody>
</table>

TABLE 3: ODDS RATIO FOR CHLAMYDIA INFECTION BY PREVIOUS DRUG USE IN THOSE SEXUALLY ACTIVE

<table>
<thead>
<tr>
<th>Number of drugs (lifetime)</th>
<th>Crude OR (95% CI)</th>
<th>Adjusted OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>312</td>
<td>1</td>
</tr>
<tr>
<td>1-2</td>
<td>170</td>
<td>1.62 (0.7-3.6)</td>
</tr>
<tr>
<td>3 or more</td>
<td>65</td>
<td>0.68 (0.1-3.0)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of drugs (past month)</th>
<th>Crude OR (95% CI)</th>
<th>Age-adjusted OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>469</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>53</td>
<td>1.16 (0.3-4.0)</td>
</tr>
<tr>
<td>2 or more</td>
<td>25</td>
<td>1.68 (0.37-7.6)</td>
</tr>
</tbody>
</table>

* adjusted for age and whether they had new sexual partners in past 3 months

3. The Results section must include how many [n, (%)] among the 28 positive cases were treated and whatever happened to those who could not be treated if not all were treated.

- The suggested changes have been made in the results section.

Page 8

1. Par. 2, lines 1-3: This sentence indicates that all the chlamydia cases identified in this study were among non-indigenous participants, but the Results did not say that. Please address this issue.

- The results section has been clarified to indicate that only one female positive case was indigenous.
2. Par. 2, lines 3-4: This sentence is stating that one prevalence measure is high compared with another among two measures with overlapping 95% confidence intervals (5.6%, 95% CI, 2.6%-10.3% vs. 3.7%, 95% CI, 1.2%-8.4%). Please justify.

- Although the prevalence was higher (5.6% compared with 3.7%) the difference was not statistically significant (p=0.49). This has been noted in the discussion.

3. Par. 4, lines 1-2: That 4.5% of participants in this study reported ever having been diagnosed with chlamydia must be discussed in the Results section. Why didn't authors adjust for this variable since a previous diagnosis of an STI is a risk factor for testing positive for an STI?

- Twenty (4.5%) of sexually active participants reported having ever being previously diagnosed with chlamydia with only participant (male) in the study having both previously reported a positive test and tested positive in the study. This is presented in the results section. Univariate analysis of chlamydia infection adjusted for previous chlamydia infection was not significant (OR 0.47, 95%CI 0.04,5.7) and was therefore left out of the final model.

Page 9

1. Par. 1, lines 1-3: Do the authors consider 23% of females a “slightly lower” participation compared to 77% males’ participation? The introduction of netball and football teams at this point in the manuscript appears out of context. However, gender participation in this study is consistent with widely reported gender differences in overall participation in recreational sports, which implies that any program designed for recreational sports participants is likely to have lower participation of females compared to males.

- The number of females versus males in the project was lower. However of those who participated, participation rate on the night of recruitment was slightly higher among females (female: 97.6% vs male: 95.4%). This has been clarified in the discussion section (last paragraph) and this comment has been placed more in context to the rest of the chapter.

2. Par. 3, line 3: “…it encouraged non-participating clubs in the same region to participate…” This is unclear.

- The manuscript has been altered to clarify this of non-participating clubs.

3. Par. 4: Although participants received condoms, this project was well accepted (over 95% acceptance rate) and considered by the Authors to have already been youth friendly (see page 6, par. 3, line 3) without providing meals, autographed footballs or lollipops. This one-sentence paragraph appears off balance and seems to make a project that worked well as designed into an unrecognizable “more youth friendly” social event that may no longer look like a chlamydia screening program that others can easily replicate.

- The study did provide incentives such as providing meals on the night of recruitment, autographed footballs, lollipops and condoms. This has been clarified in the discussion.
4. Par. 5: With 95.9% participation rate, there was no evidence in this study to suggest that the high visibility of accepting screening in this rural setting was an issue. Because the screening as designed did overcome the high visibility concern with over 95% participation rate, this one-sentence paragraph appears therefore not supported by the data.

- Advice provided to the Advisory committee members, the regional coordinators and others suggested that access to sexual health services in regional Victoria was limited. Often the only available health services were the local general practitioners (GP) and young people were reluctant to see their GPs for sexual health matters. This also supported by the literature cited in the manuscript. This point is clarified in the discussion (page 9, last paragraph).
- Evaluation surveys from participants (page 7, first paragraph) also found that 80% of participants thought the project was useful for increasing access to testing, treatment and health promotion; 92% stated they would be happy to undertake an annual sexual health check at their local sporting club.

Page 10
1. Par. 2, line 8: “…we recruited through the popular sports (netball and football)”. This was not stated in the Methods. If recruitment was through selected sports, this should be specified in the Methods.

- Recruitment was open to ANY sporting club. However netball or football clubs became the main clubs recruited as they were the most common sports played. This is clarified in the discussion. Currently the methods state “all potential clubs” which remains correct.

2. Par. 2, line 9: “…the true effect is unknown…” Which effect? Can the authors state this more clearly?

- The true population effect of this type of screening is unknown given the limited data on this study population; this has been clarified in page 10.

Pages 8-10
1. “Discussion” section: Several portions in this section are written as one-sentence paragraphs that read more like bullet points of a poster presentation than a discussion and interpretation that one would typically expect in the Discussion section of a manuscript. Can the Authors comment on this?

- In the original discussion the authors were aiming for brevity. The manuscript has been altered and expanded to include more interpretive discussion of the major issues.

Table 1
1. Under “Indigenous status” subheading, there are 683 participants (96%) who are not accounted for. Please account for, by changing the subheading if necessary.

- The manuscript has been altered as suggested.
Minor Essential revisions
Page 3
1. Par. 1, line 1: Please spell out STI first at the opening sentence of the manuscript.
2. Par. 2, last line: Please replace “on” with “of” in “…treatment to reduce the burden on chlamydia in the community”.

Page 4
1. “Participants” sub-section, line 2: The word “clinics” is used when “clubs” is expected. Please clarify.
2. “Participants” sub-section, line 5: Please delete “s” in “answers”.

Page 10
1. “Authors Contribution” section, line 2: Please correct “the designed the study”.

Page 12
1. Ref. #4: Please replace “Chlamydia” with “Chlamydial”.
2. Ref. #12, line 2: Please replace “1887” with “1997”.
3. Ref. #19, line 2: Please replace “Diseases” with “Infections”.

Table 1
1. Please spell out “GP” in “Number of visits to GP in last 12 months”.

Discretionary Revisions
Page 2
1. “Conclusion”, last line: It would be helpful to specify that it is “to screen, treat and educate young people ‘for STI’…”

• The manuscript has been altered to accommodate all of the suggested changes.

Discretionary Revisions
Page 3
1. Par. 1, line 8: “screening is necessary to effectively control ‘chlamydia’ transmission.” Although this is a thought that can be easily and has in fact been largely accepted, and screening does indeed increase early detection and treatment of asymptomatic and unsuspected STIs, but can we, after careful consideration, say that screening effectively controls STI transmission? Can this statement be seen as overstretched the role of screening in STI transmission?

• In Australia the proportion of people in the age range at greatest risk of an STI (16-29 years) remains low (Regan et al JID 2008;198:349-58). STI screening has the potential to impact on chlamydia transmission, particular if the level is high and it occurs regularly, by reducing the prevalence of the disease in the population. That being said, the manuscript has been altered to reflect the uncertainty of the impact of chlamydia screening on the population

Page 4
1. “Participants” sub-section: I assumed that the recruiting nurses spent one recruitment night per sporting club then moved to the next club. If my assumption is incorrect, then the authors should clarify this procedural detail.

• The reviewers understanding of the recruitment methodology is correct.
2. “Urine Testing” sub-section: Although obvious, it would still be useful to specify that urine was “tested for Chlamydia trachomatis” using…:

- The manuscript has been altered to incorporate this suggestion.

3. “Urine Testing” sub-section: Although not critically important, it may remain helpful to clarify why the local laboratory in this rural area afforded and chose to run one or the other chlamydia laboratory test during a 4-month time span when readers in many rural areas around the world could be interested in implementing similar screening but can even not afford one such test.

- The cost of the chlamydia was drawn from the study budget. This has been clarified in the manuscript.

4. “Provision of result and treatment” sub-section: The use of “pathology results” (here and also in the last line of Results on page 7 and last line of page 8) referring to chlamydia test results seems to me unconventional. Authors must ensure that technical terms that locally may be used commonly are equally understood by readers elsewhere.

The term “pathology test” has been removed from the manuscript; Chlamydia test result or test result has been used as appropriate.

Page 7
1. Last line: “SMS” (and also on page 8, last line), why not just say “text messaging” instead? The reading would seem much smoother!

“short messaging services (SMS; aka text messaging)” is mentioned in the beginning of the manuscript. “mobile text messaging” has been changed in the manuscript.

2. Clare Heal

Discretionary revisions
1) Clarify location of currently chlamydia testing in Australia/Victoria
2) Clarify management of patients with positive results
3) Mention small numbers of positive results as limitation when discussing Prevalence

- All the suggested changes have been made to the manuscript.