Author's response to reviews

Title: Sexual behaviour, sexually transmitted infections and attitudes to chlamydia testing among a unique national sample of young Australians: baseline data from a randomised controlled trial

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Author's response to reviews: see over
Dear Dr Morrison-Beedy

Re: MS: 1953710207108680
Sexual behaviour, sexually transmitted infections and attitudes to chlamydia testing among a unique national sample of young Australians: baseline data from a randomised controlled trial

Thank you for the opportunity to revise and resubmit the above manuscript for further consideration by BMC Public Health. We are grateful for the editorial and reviewers’ comments.

The dominant concern appears to be about sampling and representativeness. We hope that our revision has addressed this thoroughly.

We have addressed point-by-point each of the comments in the appended document.

We look forward to hearing from you again soon. Thank you again.

Yours sincerely

Dr Melissa Kang
EDITOR’S COMMENTS
The primary issue listed by both reviewers are problems with a description of your population. Additional detail in regards to your methods and results is also recommended and should be addressed before this manuscript is accepted.

We have taken on board these overarching concerns and revised Methods, Results and Discussion accordingly to try to address them.

Additionally, please address the following as well:
You indicate that 152 individuals were not sexually active and you considered this a substantial number. What is the basis of this statement?
This statement is based on the fact that when we looked at several of the demographic and health risk behaviour variables, differences between the sexually active and non-sexually active groups achieved statistical significance. We have added a sentence in the Methods to clarify this. Further, these findings were consistent with some international population studies (cited in the Discussion – reference 19) but which have not been reported in Australian research since the mid-1990s (reference 20).

This statement was unclear and needs further elucidation? Those in the SA group were more likely to be male and to speak English at home.?
We have re-written this sentence. It now reads ‘There was a higher proportion of males and people who spoke English at home in the SA group compared to the NSA group.’

There was nothing in the discussion about Aboriginal and/or Torres Strait Islander and why they had earlier sexual onset.
We have added a sentence in the first paragraph of the Discussion to address this comment. Our finding was consistent with a large survey of Aboriginal Child Health published in 2005 (reference 17).

Please define GP?
GP stands for general practitioner. We have spelled this out in the manuscript when the abbreviation first appears (Results). Further, we have explained the meaning of “Medicare card” in the Methods, as this is an important barrier/facilitator to testing and healthcare in the Australian context.

In addition, please address the following requests:

(1) Title page: Please include a title page at the front of your manuscript file. It should contain, at minimum, the names, institutions, countries and email addresses of all authors, and the full postal address of the submitting author.

The title page is included at the front of the manuscript.

(2) Abstract: This should be identical in the manuscript file and the submission
system. Please format your abstract according to the guidelines for authors 
<http://www.biomedcentral.com/info/ifora/abstracts>. Potential referees will be 
asked to review the manuscript having seen only the title and abstract, so it is 
important that these are both informative and concise.

The abstract has been checked so that it follows the format required and is identical in the 
manuscript file and the submission system.

(3) Competing interests: Manuscripts should include a ?Competing interests? 
section. This should be placed after the Conclusions/Abbreviations.

This statement has been included in the manuscript after the Conclusions section.

(4) Copyediting: After reading through your manuscript, we feel that the quality of 
written English needs to be improved before the manuscript can be considered 
further.

We advise you to seek the assistance of a fluent English speaking colleague, or to 
have a professional editing service correct your language. Please ensure that 
particular attention is paid to the abstract.

The above comment caused us considerable confusion as we are all native English 
speakers with extensive writing, reviewing and editing experience. Following an email 
exchange between 8 and 10 December with Ms Rita Aguirre about the above comment 
we were advised that the comment related to authors needing to copyedit the manuscript 
themselves for proof reading and ‘revise for international audiences that might not 
understand colloquialisms’.

We have proofread and checked the revised manuscript for colloquial language.
REVIEWER 1’S COMMENTS
This is a clear well written study which uses a large and rich dataset & contributes to the literature on young people's sexual behaviour & testing history & highlights possible public health promotion opportunities. Methods are appropriate & well described. It was particularly useful to see the large number of people who had never previously had sex as they form, as the authors suggest, a useful comparator group.
Thank you for this encouraging and helpful summary.

Results: P4, line 6, it would be helpful for a non-Australian reader to know whether 3.2% Aboriginal / Torres Strait respondents is broadly similar to the general population.
The comparison statistic has now been included in that sentence (3.4% of the general youth population is Aboriginal and/ or Torres Strait Islander).

P7, line 16 - were there any other gender differences which could be useful to help plan services to increase uptake of screening in men - this has long been an issue in England’s National Chlamydia Screening Program & if these data do provide any more insights, they would be well received by British readers.
This is a question we were most interested in as well, but interestingly there were no other gender differences in relation to attitudes and screening preferences. We have clarified this in the relevant paragraph of the Results.

Discussion P10, line 2 - the authors may wish to look at Saunders J et al 2012 for interest.
Thank you. We have now added a comment in this section of the Discussion about sex differences and screening of young men. We feel that the study by Saunders also supports the recommendation for general practitioners to consistently offer chlamydia testing to young men and women.

Line 15 - I think the authors should acknowledge that these data are now in some cases several years old & changes in attitudes & services over that time may be important to consider when planning services / health promotion initiatives today.
We agree completely with this and thank Reviewer 1 for the comment. We have added a sentence in the Discussion (paragraph 7) to this effect. We have also stated that we believe our findings strongly support the notion that if GPs or nurses raise the issue of, and offer young people, chlamydia testing, testing rates would increase.
REVIEWER 2’S COMMENTS
The key issue with this manuscript is the study sample. It is difficult to know how representative it is of young people in Australia and therefore how to interpret the study results – some of which are markedly different to other studies examining sexual health in young Australians.

We share the questions that Reviewer 2 has raised about the study sample. We see these as interesting challenges for traditional researchers, particularly in epidemiological or population studies. The ‘online community’ is transforming traditional research methodologies, particularly in relation to sampling and samples, which is why we included in our manuscript title the expression ‘a unique national sample of young Australians’.

We have revised our Methods and Discussion to better address these questions and the limitations of the study attributable to sampling and sample, and explain these in more detail below.

Recruitment:
Only scant information is provided about the website, its launch and how it advertised to reach young people. In the text it says it was a “study to promote chlamydia testing”.
We have added some detail in Methods (paragraph 1) to address this comment.

The primary aim of the study was to recruit young people into an intervention study – the authors might like to reflect further on how this may have impacted on the study sample. In their manuscript published in STI 2012 it appears that the website had 20,338 unique visitors – hence a significant proportion of people viewing the site chose not to participate (let alone those viewing the adverts and not clicking through to the site). 1013 were assessed for eligibility and 309 were excluded but no explanation has been provided on the exclusion criteria. A further 145 had insufficient data to determine eligibility but no detail is provided about this in the manuscript under review.

As mentioned in our original cover letter, the Methods for recruitment and sampling were described extensively in the published manuscript on the randomised controlled trial, using CONSORT guidelines. We elected not to detail these in this manuscript, particularly as we are presenting baseline data with a comparison group (that were not included in the RCT paper), rather than the findings of the RCT. However, understandably this lack of information has led to concerns about the sample, and we have now added more comments about interpretation of findings to the Discussion under limitations (paragraph 8). We have highlighted the major limitation being that of sampling, but also acknowledged that online research has brought new challenges to traditional research and commented that by making comparisons on demographic variables with Census data that we can gain a valid sense of how our sample compares with the general population of Australian young people. We do not believe it is necessary to provide the amount of detail in the CONSORT flow chart published in the RCT paper, as we have fully described our baseline sample and the inclusion criteria for the study,
along with discussion about sampling limitations. Those excluded were on the basis simply of not meeting the inclusion criteria.

At this stage 153 were noted to be sexually inactive – but I assume they were given the baseline survey and are the comparison group for this study in regards to alcohol and drug use.
Yes, this was explained in Methods (paragraph 4).

It is likely this 153 are a highly selected group and therefore care needs to be taken when comparing their data with others in the study or the community more broadly.
Yes we have added revised our discussion about limitations to more explicitly mention potential selection bias (paragraph 8).

Comparison with other populations
The authors compare their sample with the 2006 census (this needs to be properly referenced).
We have added the reference in for the 2006 Census.

Was there a reason no comparison was made with occupation and educational levels to better ascertain the representativeness of the group.
We have modified Table 1 and some of the text in Results (paragraph 2) to include this information and thank Reviewer 2 for the suggestion. (It required using different data from the Australian Bureau of Statistics, which we have also referenced, but it does add breadth to our sample comparison).

Also – are the group who are not sexually active particularly different from the sexually active group in terms of demographics. Table 2 is adjusted for age and gender but one remains concerned that are other differences between these two groups.
Yes, there are some demographic differences that are explained in the paragraph sub-headed “Sexually active and non-sexually active respondents compared”, namely age, sex and speaking English at home. Table 2 explored associations between being sexually active and substance use, but adjusted for age and sex because of differences between the two groups. Logistic regression was used to identify the variables that remained significantly associated with being sexually active – demographic variables were not associated.

The authors state in their discussion, there are no stark differences in drug and alcohol use between the overall study sample and those answering the national drug household strategy survey (NDHSS), which although having its own limitations, is considered the best reference for drug and alcohol consumption in Australia. It should be noted that there are actually some differences between drug and alcohol use in the group overall (and particularly with the group who are not sexually active) and the NDHSS and the authors should present more specific details on this.
To make comparisons between our sample and the general population (as sampled in the NDHSS) we would have to compare our whole sample (SA + NSA), since the NDHSS does not break down their sample into sexually and non-sexually active participants. Based on this we are making a very general comparison between our substance use statistics and those reported in both the NDHSS and the national survey of secondary students and sexual health and feel that reporting that differences are ‘not stark’ is a reasonable statement. We do not feel it is possible to compare these data more specifically due to age range and definition differences and that to provide more specific detail would be misleading and/or cumbersome (due to having to explain the individual differences between definitions and age ranges). The main point we make in reporting these data is that there are significant differences between the sexually and non-sexually active groups within our sample, and the clustering of health risk behaviours – something not previously published among Australian young people.

Self-reported STIs
Concern about the representativeness of the sample also arises in the self-report data of sexually transmitted infections. 17% of the sample reported every being diagnosed with chlamydia; 26.7% reported having a chlamydia test in the past six months with 37.2% of tests being positive. These are higher (sometimes considerably higher) than found in many other recent studies in Australia (refer to publications by groups at the University of Melbourne, Kirby Institute and Burnet Institute). Also 1% of participants reported being HIV positive – in the setting of a heterosexual sample with the majority occurring in females (1.1%) – this is either an incorrect self-report of HIV status or suggestive that the sample is not at all representative of young Australians.

We agree that these self-reported prevalences of a number of STIs, including HIV, are higher than other studies (including some published by some of us). We believe this is due to the self-selected sample, who are more likely to be interested in chlamydia and STIs. We believe we have addressed this potential bias in the Discussion under limitations. We do not use our data to report on prevalence as this would be inaccurate, but rather report on these data as part of describing our sample.

Knowledge
The authors state that the knowledge questions were derived from the National Secondary Students and Sexual Health Survey (NSSSHS). Could they clarify that all seven questions were drawn from this survey or whether some were directly drawn from the survey and others modified.

The seven questions were either taken directly, or adapted, from the NSSSHS. We have added a clause in the relevant Results paragraph to clarify this. In the Results we compare our two subsamples, the sexually active and non-sexually groups. In the Discussion we have added the phrase ‘Knowledge about chlamydia was considerably higher for comparable questions than in the national survey of secondary students in 2008...’

Analysis
In table 4 the authors provide the results as mean number of partners. Often this data is not normally distributed. Can the authors please clarify if this was the
Indeed, the data is not normally distributed, with a high positive skew for number of sexual partners ever and negative skew for number of sexual partners in the last 12 months.

In addressing this question we discovered a reporting error in Table 4, as ‘mean number of sexual partners’ should have read ‘median range of sexual partners’. To report this accurately, we have revised the way in which number of sexual partners is reported in Table 4. The gender difference is unchanged, and is statistically significant using categorical variables and the chi-square test.

**Also in table 6 could the authors please justify the selection of three or more partners ever and more than six partners in the last 12 months as comparison variables?**

This is based on the categories in the questionnaire for ‘number of sexual partners ever’ and ‘number of sexual partners in the past 12 months’ which were 1, 2, 3-5, 6-10, and 11 or more.

**Overall assessment:**

The manuscript requires significant revision in the presentation of the research methods, results and discussion. There needs to be clarification about the recruitment methods, the study sample (and how representative they are of young Australian’s.) The authors need to clarify the STI test results – and whether this is related to issues of self-report or sample selection. The authors need to provide more specific information about comparisons with the NDHSS and the NSSSHS and address the issues raised in the comments on these. The authors need to address the issues raised in the analysis section. This study has a number of limitations. The limitations section in the discussion needs to be expanded to address these.

We trust that we have addressed all of these concerns in detail in our responses above, and via the revisions made to the manuscript.