Reviewer's report

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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Reviewer: Margaret E Hellard

Reviewer's report:

Thank you for the opportunity to review this manuscript that describes the sexual behaviour, sexually transmitted infections and attitudes to chlamydia in young Australians.

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.

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”. 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. 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. 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.

Comparison with other populations

The authors compare their sample with the 2006 census (this needs to be properly referenced). Was there a reason no comparison was made with occupation and educational levels to better ascertain the representativeness of the group. 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. 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.

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.

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.

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 case? 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?

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.

**Level of interest:** An article of limited interest
Quality of written English: Not suitable for publication unless extensively edited

Statistical review: Yes, and I have assessed the statistics in my report.