Author's response to reviews

Title: The prevalence of Chlamydia trachomatis infection in Australia: a systematic review and meta-analysis

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Version: 2 Date: 27 March 2012

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

On behalf of the authors, I would like to submit a revised manuscript of the paper titled “The prevalence of Chlamydia trachomatis infection in Australia: a systematic review and meta-analysis”. The following outlines the changes that we have made in response to comments made by the reviewer:

Reviewer comments:

“One difference between these data and data from the US is not discussed. Data from the CDC have found that the prevalence of chlamydial infection is highest in women 15-19 years of age and the prevalence of infection is 3-5 times higher in these women than men in the same age range. This sex difference is present in all age strata in the US. It would be interesting to hear from the authors why this sex difference in prevalence was not observed in Australia except for some studies in indigenous populations. Are you doing a better job of testing males, etc?”

Changes made:

The discussion has been slightly modified to take into account the reviewer’s comments. We now compare our own conclusions with both notification and population-based data from the US. The reviewer notes that the rates of infection for women are 3-5 times the rates for men. This is indeed the case for notification data from the CDC, and data from Australia also show higher notifications for women. However, this does not reflect true prevalence in the community. The National Health and Nutrition Examination Survey (NHANES) measured chlamydia infection in a population sample of men and women age 14–39 years. This study did not report higher prevalence in women. The notification rate bias – in both Australia and the US – is a consequence of women being tested more than men.

The following section of the discussion covers these points:

Chlamydia notification rates over the past 15 years have been consistently higher in women compared with men; however, this did not emerge as a robust trend in this review. Higher female notification rates can probably be attributed to differences in chlamydia testing rates. In Australia, recent Medicare data indicates that about 12–13% of sexually active young women and 3–4% of young men are tested for chlamydia each year [11]. As chlamydia testing rates increase in Australia, notification data will be able to provide a better estimate of the population prevalence of chlamydia.

We found that prevalence estimates were comparable among heterosexual men and women; however, the picture is neither complete nor consistent. In the general practice setting, no studies directly compare prevalence between men and women; and in sexual health clinics, prevalence tended to be higher among men. This is probably because men are more likely to attend a sexual health centre due to the presence of urethral symptoms [110]. Curiously, fifteen studies were identified that did not report male and female data separately, thereby excluding the data from calculations of pooled prevalence estimates. A number of recent studies reporting chlamydia prevalence in men attending sporting clubs [23, 27, 28, 31] and general
practices [25] have started to address the predominance of female studies, which has been previously noted [12]; however, there remains a need for additional studies that directly compare men and women in community and clinical settings.

Similar discrepancies between notification data and population-based prevalence surveys have also been observed in the USA. In 2010, the notification rate reported to the Centers for Disease Control and Prevention was 2.6 times higher for women (610.6 per 100,000 population) than for men (233.7 per 100,000) [111]; rates in 2002 differed by almost four-fold between the sexes. By comparison, prevalence estimates reported in the National Health and Nutrition Examination Survey (NHANES) conducted between 1999–2002 were similar in women (2.5%; CI: 1.8, 3.4) and men (2.0%; CI: 1.6–2.5) [112]. Although the prevalence was twice as high in women aged 14–19 years (4.6%) compared to men (2.3%), the trend was reversed in the 20–29 year age group, where more men were infected (3.2%) than women (1.9%) [112]. These data underscore the fact that notification data do not provide a full picture of the prevalence of chlamydia infection in the community.

Other changes:

- Key words added
- List of abbreviations added
- Tables formatted for BMC style

We believe that these changes should adequately address any concerns that the reviewer had. Please advise if there are any further alterations that are required.

Thank you for your time in reviewing our paper.

Sincerely,

Dyani Lewis

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