Reviewer's report

Title: Estimating the regional distribution of men who have sex with men (MSM) based on Internet surveys and calculation of MSM population-specific incidence of sexually transmitted infections

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Reviewer: Onno de Zwart

Reviewer's report:

It is an interesting article which gives both insight to the representativeness of internet surveys among MSM as well as into spatial distribution of MSM communities. The article comes up with new calculations on incidence of HIV and syphilis in Germany which will be helpful for the control of these STI.

There are, however, some issues the authors need to address in more detail:
- p.4. There is only one reference to studies into the size of populations of MSM. It would be helpful to refer to more articles so to put the German results (3.3%) in perspective.
- p. 4. The authors state that ‘asking people about their sexual preferences is becoming more and more acceptable’. It is not clear on which research or published articles the authors base this statement.
- P. 5. The authors state that ‘MSM who are reluctant to report sexual experiences with other men, usually are also less sexually active’. It is not clear on which research or published articles the authors base this statement.
- P. 8. The authors do not discuss the possibility when discussing the GayRomeo User Data the possibility that users may have more profiles which may influence the regional distribution.
- P. 12. Including a table with the main socio-demographic results of the different surveys would help the reader to get a good overview of the differences.
- P. 13. The offline survey of the KABaSTI study was mostly done in Berlin which could also explain some of the differences between online and offline.
- P. 15. It is not clear whether the differences in ranges of estimates of MSM in the states were statistically significant or not.
- P. 36. Table 3, remark 2. The authors here assume ‘no systematic change due to change of residence after HIV diagnosis’. However, in the discussion op p. 23 and 24 the authors claim that a move of MSM with HIV to larger cities is probable. How to explain these two contrasting remarks?

In general it would be interesting in the discussion to put the results more in an international perspective.

Level of interest: An article of importance in its field
Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

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