**Reviewer’s report**

**Title:** Reported oral and anal sex among adolescents and adults reporting heterosexual sex in sub-Saharan Africa: A systematic review

**Version:** 0  **Date:** 04 Jul 2018

**Reviewer:** Shauna Stahlman

**Reviewer's report:**

Overall this paper is a well-organized summary of lots of different data. The information presented is useful for health workers and public health practitioners to understand the broader sexual practices of heterosexual adolescents and adults in sub-Saharan Africa, as it relates to sexual health. However, I have some suggestions that could potentially help to improve the clarity and depth of the manuscript, which are listed below. There is also an issue in the Methods with regards to bias classification that needs to be worked out.

**Abstract and Summary:**

- "Oral and anal sexual behaviours are increasingly reported in high income countries," The way that this is phrased, it is not clear whether this means that there is more and more data available or that the prevalence of the reported behaviours is increasing

**Summary:**

- Consider rephrasing "vagina sex" as "vaginal sex"

- The second sentence beginning with "The available evidence suggestions...," and the last sentence beginning with "Medical practitioners, policy makers…" are both quite long and took me a couple reads to understand. I would suggest breaking each into at least two different sentences.

**Background:**

- Should "proctitis ulcers" be "ulcerative proctitis"?

- There is an extra "and" on line 12
Lines 29-37 contrast oral sex prevalence among FSW in Peru with anal sex prevalence among FSW in southern India. I would argue that this contrast is meaningless because if the intent is to provide an example that prevalence of behaviours/practices vary by geographic region, then the author should be comparing prevalence of the same behavior among different regions (e.g., anal sex rates among geographic regions or oral sex rates among geographic regions). It is also not clear what is meant by "20% used condoms during the act" - was this ever or consistently during sex?

Methods:

- It is not clear what is meant by "the search have no start date". Does this mean that all articles prior to 2015 were included? Please re-phrase.

- Data extraction: The way that the sampling technique was classified as "convenience" and "probability sample" does not make sense unless the participants in the given study were randomly sampled from the target population. For example, I looked at one of the studies that was labeled as "Probability sampled" (Ref #55 Fonck, 2000). This particular study was a randomized, placebo-controlled trial of azithromycin prophylaxis to prevent STIs. The fact that participants were in a randomized trial is irrelevant to the reporting bias of self-reported oral/anal sex behaviours. The randomization in that study would reduce or eliminate the confounding of characteristics (e.g., age, socioeconomic status, etc) in the exposure groups (azithromycin prophylaxis vs placebo) on the outcome of STIs. However, that randomization of participants in that study does nothing to eliminate selection bias, particularly selection bias in assessing the outcome of oral/anal sex behaviors among the target population (e.g., Kenyan female sex workers). The authors should only consider randomization if it was a random selection of participants from a target population. However, because there are likely few if any studies that were truly randomized in this regard, the authors may want to consider relaxing the definition of "probability sampling". For example, authors should consider including methods such as venue-based sampling and respondent driven sampling (RDS) as a more valid sampling strategies than pure convenience sampling, because these methods can have a sampling frame and allow for weighting of the final prevalence estimates.

- What is "recreation facility worker" and why are they a high risk group?

Results:

- Why does Figure 1 say that MSW were excluded? Aren't these men who have sex with women?
- Page 8 line 4: What is meant by "female genitalia or penis"?

- Page 8: "ejaculation during anal stimulation" seems to indicate authors included, for example, hand stimulation of a partner's anus resulting in ejaculation of either partner. This wouldn't carry the same kind of STI risk as penile-anal contact and doesn't seem like it should be included. According to the Methods section this should have been excluded.

- Page 9 line 57: how are women working in food and recreational facilities considered at high risk?

- "In another study, Malawian men that reported ever practicing oral sex had 3 times odds of ever using condom, 2 times odds of spending money in the last three months and having higher number of lifetime sexual partners[79]." What is the comparison group?

- Page 13 line 45: "that" should be "than"

- Page 14: The paragraph beginning with "Four studies reported adjusted estimates are as follows" would benefit by some re-phrasing to more clearly state the findings. For example, "odds ratio for those with regular use of alcohol before sex was about three times associated with reporting anal sex" doesn't make sense the way it is currently phrased without mentioning the reference group.

- Page 14: What is an STC clinic?

- Page 15 line 9: "Their findings showed that motivations differed between men and women" is significant and deserves its own point made outside of parentheses.

- Page 16 line 1: "MSM, who are stigmatized as sex workers" does this mean they experience stigma of the same type and extremity as sex workers?

- Since the articles in the review covered a wide range of dates, were the authors able to assess any time trends with regards to prevalence of oral/anal sex practices in SSA?

Discussion:

- "These prevalences were generally higher among high-risk populations than general populations," - this statement does not seem to be reflected in the supplemental figures. For example, supplementary Fig 3 and Fig 7 indicate similar oral and anal sex prevalence among high risk and general populations
How do the authors see sexual behavior-related stigma as having influenced their results?

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