Reviewer's report

Title: Prevalence and predictors of Sexual Violence among Commercial Sex Workers in Northern Ethiopia

Version: 2 Date: 21 October 2014

Reviewer: Putu Duff

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Specific comments:

I would like to thank the authors for the opportunity to review their manuscript. Violence among sex workers is an important topic, and has been understudied in the context of Sub-Saharan Africa, so this study could be a helpful addition to the current literature. However, there are a number of problems with the manuscript that are fairly concerning. I've included specific comments (by section) below:

Minor revisions:

ABSTRACT:

1. e.g., Abstract, line “In all societies, sex worker” should be “In all societies, sex work”.

2. Methods in abstract: the language ‘indicators and effect sizes’- indicator is not very specific- difficult to understand what is meant here.

3. I would suggest to be consistent with language for sex workers throughout the text. In some places you’ve written ‘commercial sex work’, and others ‘commercial workers’. Please correct throughout the manuscript.

4. Please rewrite the conclusion in the manuscript to include more of a discussion about the implication of these findings. As it is written, it merely restates the results.

INTRODUCTION:

Introduce the abbreviation CSW once, then continue with the abbreviation. There is no need to write out commercial sex work throughout the text.

5. The statement that CSWs are disproportionately affected by violence should be referenced. Perhaps including prevalences of violence among CSWs compared to the general population would give a good sense of the magnitude of the issue.

6. This statement requires a reference: “However, many sex workers consider violence as "normal" or "part of the job" and do not have information about their rights.

METHODS:

7. Please describe ‘save transcation program’, readers will not be familiar with
this.

RESULTS:
8. I would list age at marriage under sociodemographic, not reproductive health issues.
9. Please define chat chewing for those who are unfamiliar.

DISCUSSION:
10. In the first paragraph it should read “The proportion of CSWs who had sexual violence was 75.6%.

Major revisions:

INTRODUCTION:
11. Please specify what type of violence was reported in Reference #6- was this physical, sexual, emotional or all types?
12. The introduction could be greatly improved: for example, there are a great deal of literature on the impact of violence and HIV outcomes (e.g., Deering et.al Systematic review). It would be remiss not to include these in the introduction. This includes some notable quantitative and qualitative studies from Sub-Saharan Africa. Could you please also include these in the introduction.
13. I agree that stigmatization and gender norms perpetuate violence. Please include more about the legal context of sex work in Ethiopia (i.e., is it criminalized) and how legal frameworks have affected violence against CSWs elsewhere.
14. As well, it would be important to summarize the factors associated with violence against CSWs in other studies (particularly in SSA), as this should inform your variable selection, interpretation of findings and situating your results.

METHODS:
15. How many agreed to be in the study/refused (i.e., what was the non-response rate)? Were these female SWs, transgendered SWs, male SWs or all of the above? What was the eligibility criteria e.g., age, definition of sex work?
16. The 2,868 CSWs- is this an estimate, and how accurate is this? I imagine it is difficult to accurately estimate as CSWs often don’t identify themselves and are difficult to count.
17. Locations of sampling- you don’t mention street-based SWs, or SWs working in truckstops/lodges. Were these women not included?
18. Primary outcome: I’m not sure I agree with the variables included in your outcome, as I think it would overestimate the number of those experiencing sexual violence. For example ‘asking uncommon type of sexual intercourse’ is generally not considered sexual violence- if it is forced then it could be. Similarly, physical harm would generally be categorized as physical, not sexual violence.
   o This is sexual violence from whom? Clients, intimate non-commerical partners or both?
If you were to reanalyze this data- I could exclude physical harm, and asking for uncommon type and pushing for sex without condom (because this may not result in actual sexual violence) from the outcome.

What is the time frame? Is this violence ever? In the last week? Month? Please clarify.

There are numerous and standard tools to measure violence and have been used extensively in the sex work literature- could you explain why these weren’t used?

20. How did you choose your independent variables? A thorough review of the literature, and summary of factors associated with violence among other CSW populations would help justify the inclusion of your variables. At the moment, the variables included seem aimless and resemble a fishing expedition.

21. How did you determine which variables were included in the multivariable model? Did you use results from Crude ORs to inform their inclusion in the multivariable model?

22. How did you arrive at the final multivariable model? There needs significant rewriting of these methods. It is difficult to assess the validity of this model without these details.

RESULTS:

23. The response rate of 100% is questionable- all those invited into the study accepted?

24. Please provide information on Education. Were there other Socioeconomic variables assessed?

25. The term ‘household monthly income’ is unclear. Is this income from sex work? Household income could include be interpreted to mean money from their spouses/partners. Since many are farmers (and may be subsistence farmers), household income may not be a good indicator of income. If this is income from sex work, I would reword this for clarity.

26. The results are interesting but seem somewhat unfocused. Is there any relevance in including # of pregnancies etc., I think it might not be necessary if it is not an apriori or hypothesized predictor of violence.

27. The categories for education are somewhat confusing, as they are not mutually exclusive. Particularly the ‘read and write’ category. I imagine there is overlap here with elementary, high school and college. This could affect your results. Also, the association is the reverse of what is expected and seen in other studies.

28. How did you choose those categories for income?

29. Table 4 is slightly misleading, so people can report more than one of these?
Do you have any indication of which of these are experienced most often?

30. The CI’s are very wide, probably because you are using reference categories with a small n. I would suggest combining these to be larger (e.g., collapse highschool and college) or use Elementary school and below as your reference category. Same goes for Income and client type.

31. The client type is interesting. This makes it look like SWs service only one client type, is this the case? I imagine they service more than one type of client. What about farmers? Are they not a client type? I feel like these categories are arbitrary, and probably why there were no significant associations. Including this variable could skew your MV results.

Discussion:

32. There are other estimates of violence in SSA. I would include these in your discussion. I would also cite Deering’s systematic review and use that to pull relevant studies.

33. So are you saying the violence is due to gender discrimination? It seems like you are saying violence is coming from families. What about clients? I’d cite some qualitative findings to contextualize these. I know other quali studies have found that CSWs encounter violence in negotiation with clients, when servicing clients in remote settings where they have no protections. Pulling in data like this to contextualize your findings would be helpful.

34. I think there are a number of other explanations for the levels of rape. This could include where CSWs are servicing clients- do they have managers/bouncers to protect them? Do they have other sex workers spotting them when they go on dates? Is CSW criminalized? Are they servicing clients alone in public spaces? I would encourage you to include some of this information as well.

35. This sentence requires clarity: “This is also similar with our finding in which the most causes of sexual violence were drug abuse, smoking, having low socioeconomic status and attaining low educational status”

- First, I would not say that these ‘cause’ sexual violence. You did a cross-sectional study, so the direction of association cannot be inferred. Also, many of these could be outcomes of sexual violence. For example, people could use drugs or smoking to cope with sexual violence.

- I would take this space to try to explain your findings using other literature. For example
  • Why is drug use associated with violence (there are studies suggesting lack of control with clients when high) – I see this is included later down. I’d include more information and move that paragraph up.
  • Why is low SES associated with violence (perhaps can’t pay a bouncer for protection, work in places without protection, do riskier dates because they need money- there are plenty of explanations you could include.

- Your education finding was actually backwards. The higher the education, the stronger the odds of having sexual violence. (e.g., highschool AOR: 7.93 vs. elementary AOR:6.96). This is counter-intuitive and contradicts the current
literature. Can you please explain this? I imagine this weird finding may be due to including ‘none read and write’ and ‘read and write’ as categories within the same variable.

36. The time in sex work finding needs contextualization. Is this ‘ever’ experienced sexual violence? If so, this makes sense- the longer a woman is in SW, the more likely she is to have ever experienced violence. The explanation you have here requires some rewording. As it is, it is difficult to follow.

37. The discussion left me wondering- so what? Why are these levels so high and what can be done to reduce violence against CSWs? What would you recommend? What have other studies recommended (e.g., WHO) are there specific programs in SSA that could inform violence-prevention programs in your settings?

Limitations:

38. I would suggest including other limitation:

39. Sampling- it appears you only included SWs who registered, this likely underestimates the # of SWs. How do you think your sampling affected your result? Are SWs in certain venues more or less likely to experience violence?

40. Do you think your sampling is representative? Recruiting SWs is always a challenge. It would be worth mentioning here.

41. Do you think there are limitations with your outcome?

42. Social desirability- do you think the women were likely to give you answers that you wanted to hear?

43. Cross-sectional design- this is a major limitation that needs to be acknowledged. You can’t make causal assumptions based on this type of design.

44. Are these findings generalizable to SWs elsewhere?

45. Your sample size is fairly small- this can be a limitation.

46. Conclusion: The conclusion needs to be expanded, and not repeat the results. Explain to the reader what this means, why violence levels are high and what the recommendations are resulting from this findings.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Not suitable for publication unless extensively edited

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

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