Reviewer's report

Title: Sex work and international sporting events - impact of the 2010 FIFA World Cup (TM) on female sex work in South Africa

Version: 1 Date: 29 May 2012

Reviewer: Kathleen Deering

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General comments

The authors have submitted a very interesting study that addresses an important gap in research and policy regarding the potential impact of large-scale sporting events on sex work. The paper is well researched and well written and provides important interpretations and recommendations for future events.

While in general I recommend that this paper be published, I do have some comments, suggestions and concerns regarding the study design, interpretation and analysis. These are detailed in the following categories and numbers.

Discretionary Revisions (which are recommendations for improvement but which the author can choose to ignore)

1. Formatting of headings of sections should be modified for clarity – i.e., the heading should have a certain format, with sub-headings having a different format (right now they are all bolded and indented).

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

2. In the Results section, please make sure to describe ‘results not shown’ in a bit more detail: say ‘There were no statistically significant changes in …’ (Results, line 6) if this is true, and provide the p-values.

3. Results section: Are the continuous variables normally distributed? The methods section, last sentence, implies not. In this case I recommend reporting the medians and interquartile ranges rather than (or in addition to) the means.

4. Results, Working conditions and health care utilization: Please clarify in the first sentence of this section that you are now talking about qualitative results. Otherwise the change in reporting language (i.e., how you report results) seems quite out of place. Sentence beginning with “This stands in contrast…” is awkward – please revise.

5. Suggest re-phrasing ‘being drunk with clients’ to ‘using alcohol with clients’ or ‘heavy use of alcohol with clients’ in all cases.

6. Does Table 4 show researcher-summarized results from the qualitative reporting? If so, please clarify with sentences in the Results section: “Table 3 shows…” And “Table 4 shows…” This could actually be helpful for Table 1 too.
You do say something like this for Table 2 already.

7. Discussion: There is some awkward phrasing used in the discussion. Suggest having a careful read-through for clarity. Some examples:

a. Second paragraph: “Our evidence…” – an awkward way to word this sentence. In this and similar sentences, suggest something like: “Evidence from our study does not suggest…” Don’t use an m-dash: suggest either breaking up the sentence or re-wording to make it more readable.

b. Suggest combining the limitations section into one paragraph and editing for repetition and conciseness.

Major Compulsory Revisions (which the author must respond to before a decision on publication can be reached)

8. One of the major limitations of this paper is obviously that the authors only assess changes using a bivariate approach. This approach greatly limits the plausibility of results and should be addressed in more detail in the limitations section. The limitations of serial cross-sectional surveys to assess changes over time should also be discussed. In addition, to make this more prominent, in the methods of the abstract, it should be made clear that this study can only look at bivariate associations, and this should be mentioned in the discussion.

9. Did the authors collect any information on whether or not women responded to previous surveys (even if the surveys cannot be linked, which certainly makes sense in a setting like South Africa where sex work is criminalized)? If this proportion is low, it could make sense to combine all surveys together, with ‘round of survey’ as a covariate and conduct multivariable analysis to strengthen study results. Or, a sub-analysis could be done – if not for this paper, for another. It would be very interesting to see those results. If the proportion is high, this leads to a potential problem with the analysis, since repeated measures aren’t used…it’s important to make this very clear. Basically, if you are comparing the same population over time, or a high proportion thereof, it would make sense that there would be small changes in the age groupings or the proportion of migrants, and that the World Cup would not have had an impact. If you are comparing the same samples over time, then your results relating to changes in supply/demand are that much stronger.

10. Related to the above point, it appears that the authors are assuming that their study sample is population-based, due to the nature of their sampling scheme (choosing every third sex worker) – since the authors interpret changes in the study sample as being markers of a change in the actual population of sex workers, reflecting the impact of the World Cup. I’m not so sure that this is the case. Given the hidden nature of sex work, it is very difficult to get a population-based sample. Moreover, weighting can be useful in order to extrapolate measures of the sample population to the overall populations (see Ramesh et al 2008 “Determinants of HIV prevalence among female sex workers in four south Indian states: analysis of cross-sectional surveys in twenty-three districts. AIDS, 22, S35-S44” for details). If this is the case, this again needs to be clarified in the abstract and the limitations section in the discussion.
11. The way the abstract methods section is worded implies (or at least could be misinterpreted) that you are following the same sex workers over time (particularly since you use the word ‘repeat’ in the first sentence, which naturally would make a reader think of ‘repeated measures’). Please re-word this to clarify the above-described limitations for the reader. In particular, you need to make it clear how you are assessing the impact of the World Cup (i.e., you assume that changes in the sample can reflect the impact of the World Cup).

12. Accordingly, related to the above, please re-word the Results section carefully to take this into account. The wording you use, i.e. Results, Sex work supply, line 4: “Across all phases, only a small number of women arrived in the city in the last month...” implies that these results are more objective than they are. To do this, you could clarify that these are changes in the sample populations, not changes in the same sample population over time.

13. Also in the limitations, it should be clarified that no rigorous analysis of qualitative results was done (I assume this is the case? i.e., no thematic coding, etc.). They are interesting, but the limitations need to be clear.

14. Analysis: why did the study authors not compare II versus III (Table 2)? This could be a particularly interesting comparison. I would suggest that the authors add another column in the Table to do these comparisons. The reason for this is that often in the lead-up to large-scale sporting events, changes are already happening that can influence sex work (including one month before the event), while after, things tend to go back to normal a bit. While the authors discuss the timing of the surveys in some detail in the discussion, it would be helpful to discuss this a bit further in the South African context. A strength of the survey timing is that September could be far enough past the World Cup dates to better detect changes – in this case, comparing II and III could be more useful than comparing I and II.

15. Discussion: The discussion could be more robust and thorough in comparisons with other studies, where possible.

a. The first paragraph should give a bit more detail on the measures compared and the study design, e.g.,: “Results from our serial cross-sectional study do not provide evidence of changes in the study populations across three waves of surveys administered before, during and after the World Cup, on the following indicators of supply and demand of sex work: ..."

b. For the second and third paragraphs, where the authors compare to other studies, I suggest authors look at the following study, which may not have been out when the paper was submitted, but could be useful (particularly related to supply and demand), as our study looked at similar outcomes related to the 2010 Winter Olympics in Vancouver: Deering KN, Chettiar J, Chan K, Taylor M, Montaner JS, Shannon K. Sex work and the public health impacts of the 2010 Olympic Games. Sexually Transmitted Infections. 2012; 88(4): 301-3.

c. The third, fourth and fifth paragraphs are very important, as they detail the study implications. These could be combined into at most two paragraphs, with the fifth paragraph (which is very interesting) better relating to the results of the study, for better flow of the article.
d. Please provide some details about what is meant by ‘alcohol interventions’ and why these are important to HIV risk. Similarly, it would be useful to briefly expand on the evidence for the relationship between police harassment/policies and HIV risk.

e. Why do the authors think that peer contact was so low, even when the study was conducted in settings chosen based on the peer/advocacy groups? This could be related more strongly to the lack of resources available during the World Cup (and at other times).

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests