Author's response to reviews

Title: Lost opportunities in HIV prevention: programmes miss places where exposures are highest

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Author's response to reviews: see over
Response to the reviewers’ comments

Reviewer 1: Sharon S. Weir

General
My recommendation is that the paper should be published if Table 2 is edited to be less confusing regarding the selected denominator for the percentages.

Minor Essential Revisions
The information in the article is well-stated and useful. Interpreting Table 2 would be much easier, however, if indicators could be shown as a percentage of the total and any indicators for a sub-set of the total clearly labelled. There is some confusion as the table is currently laid out because it is not clear why the "N" shown beside the percentages changes. For example, if the total number of men interviewed in Lusaka is 366, why is the denominator for "any new sexual partner in the past four weeks" only 354? and the denominator for having sex with men only 348? If the total were used as the denominator, the table would be more understandable. If missing data cause the denominator to change, this should be indicated in some way.

Response: It is correct that the denominator changes because of missing data. This is now mentioned underneath the relevant tables.

Was the minimum age 18 or 19? It is stated as 19 on page 6, but perhaps it is 18?

Response: It was 18, and the sentence on page 6 has been changed to “18 years or older”

Reviewer 2: Anne Buve

Major Compulsory Revisions
In the introduction section only studies from South East Asia and Latin America are cited to make the point that interventions targeting sex workers can be effective. There are several - though probably less spectacular - examples from sub-Saharan Africa (e.g. Kinshasa, Abidjan, Welkom in South Africa, Cotonou in Benin). I feel it would be more appropriate to cite those experiences and studies as sex work in Africa and in South East Asia are organised in a completely different way (in sub-Saharan Africa most sex work is NOT brothel based, while in SE Asia it is mostly brothel based). Also a thorough reading of these experiences should highlight the potential effects of sex worker interventions and put the PLACE method more in context (as an addition for instance to dedicated clinics for sex workers).

Response: The introduction has been rewritten and now mentions more specifically important components and impacts of interventions targeting sex workers and cites evidence from several studies from sub-Saharan Africa.

What were the criteria for selecting the compounds in Livingstone?

Response: As mentioned in the Methods section, we selected townships from which we have data on HIV prevalence. The ANC-based HIV surveillance in Livingstone includes data from the health clinics in Maramba, Dambwa and New Boma, so these three areas were selected for this study too.

What exactly is meant by "observed higher levels of poverty"? What criteria were used?
Response: We observed worse housing and sanitary conditions in the townships in Livingstone than in Chelston. The statement was only based on a general impression, not a collection of objective data. We have now rephrased the sentence and specified what factors the assessment was based on.

The authors used a very high number of informants. Was this really necessary? Why such high numbers? How were they selected?

Response: We tried to obtain a similar number of informants to the samples that have been included in other PLACE-studies. A high number of informants in the first phase ensured that we obtained a comprehensive list of venues in the two study areas where people meet new sexual partners. In the third phase a high number of respondents were invited to participate to recruit a sample that well reflected the behaviour of guests socializing in the venues. In comparison, the PLACE-studies in Mongu and Kapiri Mposhi in 2005 approached 432 and 340 informants in the first phase and 1020 and 1040 in the third phase, respectively [1, 2].

All the respondents were selected by a form of convenience sampling. In the first phase the interviewers tried to include individuals representing different groups (young people, health personnel, taxi drivers, shop staff and bar workers). The informants were people that the interviewers encountered as they systematically walked through the study area. This has now been specified in the 2nd paragraph of the Methods section. In the second phase the interviewers tried to primarily interview the owner or the manager of the venue. If this was not possible, someone who worked in the bar was asked. In a few of the bars and restaurants and in about half the sherbeens the only person available for an interview was a patron who claimed to know the activities at the site well. In the third phase the interviewers approached people who were standing along two imaginary diagonal lines connecting the four corners of the room, in order to interview people who were standing near the counter, in the middle of the room and in the corners. The approach has been used in many other PLACE-studies [3].

It would be useful to get an idea of the total number of people living in Chelston and the compounds in Livingstone.

Response: This is now mentioned in the 1st paragraph in the Methods section.

Could the authors be more explicit in their comparison of the men and women that were found in the sites and the men and women in the "general population" (the data are there for Chelston).

Response: We have now included more comparisons with the population-based survey in Chelston. In addition, comparisons are made with the Sexual Behaviour Surveys and other PLACE-studies. We hope that the additions are satisfactory, but are a little uncertain about how the reviewer would like us to do this more explicitly.

The link is made between poverty and sherbeens and HIV. But we do not get to know how poverty is assessed. Moreover Livingstone is a quite different town from Lusaka and I feel it can not be excluded that the sherbeens just reflect a different "drinking culture" rather than differences in poverty levels.

Response: Drinking culture is now mentioned as a possibility and poverty has been deleted.
In Zambia the role of sex work in the spread of HIV - not to speak about the needs of sex workers for special services - have been largely ignored. I feel the point should be made that so far there have not been serious attempts at interventions targeting sex workers in Zambia - apart from the Borders project. I feel there is still a place in Zambia for interventions targeting sex workers, such as dedicated clinics with outreach activities, and the PLACE method can be a useful addition to such interventions. But first the political will needs to be there to address this problem!

**Response:** This point has now been added.

**Minor Essential Revisions**

Table 1 is difficult to read and should be "re-designed".

**Response:** Table 1 has now been split into 3 tables.

It would be useful to get an idea about the average number of people patronising the sites.

**Response:** This information is now included in the 1st paragraph of Results.

**Reviewer 3: Edward Mills**

**General**

While this is an article of some importance, it is written in a style that is difficult to follow and, I am afraid to say, is somewhat colonial in its assumptions of some African's activities. Transactional sex, for example, happens everywhere, and is far more complex than simply being about money.

**Response:** We agree that transactional sex is not only about money, and had for example mentioned that some women engage in such relationships in the hope that the relationship will become long-term. We have, thus, rephrased the paragraph on transactional sex.

**Major Compulsory Revisions**

Why cite the antenatal clinic data when there is now door-to-door prevalence data in Lusaka?

**Response:** We cite antenatal data from Lusaka to provide data that are comparable with the antenatal data from Livingstone. There is no population-based trend data on HIV prevalence from Livingstone.

**Minor Essential Revisions**

Be careful about using the word "which", in most cases you should use "that".

**Response:** The article has now been copyedited and the language is hopefully better.

Stats section makes very little sense to me.

Your stats section makes no reference to hypotheses and yet you have chi-square tests in the results (and this shouldn't have been a chi2 test).

**Response:** We think it is appropriate to use a chi-square test to compare the relationship between number of partners in the last month and engaging in transactional sex based on a
2x2 table (0-2 partners and 3+ partners vs. not engaging in and engaging in transactional sex). We have now mentioned this in the section on Statistical analysis.

*I have no idea what is meant in the 2nd paragraph of the discussion.*

**Response:** The paragraph has now been changed as to avoid making the paper too long after all the recommended amendments had been made. Thus we decided to delete the sentences about the association between education and high risk behaviour.

*Why underline things in a manuscript?*

**Response:** The subheadings have now been put in bold.

*I am not sure that questions such as "why did you come here today? To meet a sexual partner" can rationally capture the complex reasons people may go to a bar.*

**Response:** It is obvious that this question does not capture all the complex reasons people go to a bar. But this question has been used in several other PLACE-studies and for comparability we decided to use it too. The participants were asked the following questions about reasons for coming to the venue:

Why did you come here today? *(Read options)* *(Coding: Yes=01, No=02)*

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) To drink alcohol?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) To socialize with friends?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) To meet a sexual partner?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) Other reason</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The PLACE-method is a quantitative method to rapidly assess risks and opportunities for interventions, and is not a method used to obtain a deep understanding of the reasons for how and why people act as they do.

*The conclusion, that poverty eradication is needed, is naïve.*

**Response:** To avoid sounding naïve we have changed the conclusion and tried to be more concrete and less ambitious.

*If your research assistants carried out most of the interviews, why are they not authors?*

**Response:** The research assistants were hired to conduct structured interviews using predesigned questionnaires, but did not take part in the design and planning of the study, the interpretation of the results or writing of the final paper. This is the common practice when conducting quantitative surveys with many participants and is according to the Vancouver requirements for authorship.
Reviewer 4: Jesus M Garcia Calleja

Minor Essential Revisions

The authors seems to ignore the latest Epi reports and papers and discussions on HIV in Africa with the diverse heterogeneity and levels of HIV infections and reported declined prevalence and new infections in several countries including Zimbabwe, Zambia, Malawi.

They make several assertions saying like condom use is too low, but several reports, in STI journal, special issue on HIV declining epidemics in Africa highlight the links between sexual change and HIV declining prevalence. There are also several other papers in the recent year.

Response: The intention of this paper was not to go into details about the heterogeneity of the HIV epidemic in different parts of Africa, and therefore we had only cited a limited number of studies, but the studies referred to were from Zimbabwe and Zambia, in addition to the overview article by Asamoah-Odei et al. To respond to this concern we have now also cited studies from Uganda, Kenya, Rwanda and Malawi.

We did mention that condom use has increased in several countries, and the studies that we had referred to in paragraph 3 and 4 of the Introduction did highlight the associations between sexual behaviour change (including increased condom use) and HIV decline. But considering that the HIV prevalence among young people in many countries in sub-Saharan Africa, including Zambia, is still very high, and reported condom use with casual partners is reported to be less than 50% in many countries, we strongly believe that condom use is still low. However, we have rephrased paragraph 3 as a response to the concern.

The discussion on the contribution of special vulnerable populations to the overall national HIV epidemic, especially in countries with high levels, it needs to be improved, what is the evidence for one or another?

Response: We have expanded on this issue in the first paragraph of the Introduction.

The prevention activities in the areas are poorly recorded, can be improved this section to know what exactly was done in these places as preventive activities?

Response: Unfortunately information about previous preventive activities has never been recorded and is not available. From our survey we found that very few venues had ever had any HIV preventive activities, and the activities that had taken place were primarily exhibition of HIV-related posters and condom distribution. Peer educators were the most likely source of these materials as none of the NGOs that were currently involved in HIV prevention had targeted these places in any other specific programs. The peer educators had been more active 2-3 years back just after they were trained, but at the time of the survey, there were so few left that they only occasionally distributed condoms in bars. We have now added that the posters and leaflets that were found in a few of the venues had been distributed by peer educators some time back.

The authors say that there are 2000 sex workers in Livingstone? Knowing personally the city I doubt very much of this figure? can provide definition of sex workers and serous reference for this number? They may be repeated clients on the clinic??
Response: Joseph Kamanga Program Director, Corridors of Hope (CoH), at Family Health International gave the figure of 2,044 female sex workers living in 619 households in Livingstone in 2005. 619 of these were transitory. The estimates were based on enumeration using snowballing during one week in 2005. Livingstone has grown very much in recent years and has a population of probably more than 200,000. Most of the sex workers operate in the townships, not in the town centre, and the clients are mostly local men.

Family Health International has published a Behavioral and Biologic Surveillance Survey report from selected transportation and border towns in Zambia, including Livingstone, and after recalculating the figures in this report, we found that 51% of the sex workers were registered with the program [4]. This has now been changed in the text.

Recognize the limitations of Place, and perhaps refer to other Place studies in Zambia if it has been done before. How this data will be used afterwards? any concrete plans to improve preventive activities there?

Response: We have now mentioned more limitations of the PLACE-method and referred to two PLACE-studies that were conducted at the same time in Zambia. We are currently working on plans for a condom distribution and youth peer education intervention in the same areas of Lusaka and Livingstone where the PLACE-study took place, and will conduct a follow-up survey to assess the effects of the intervention on condom use and partner turnover.

The results could be compared with the DHS 2004 data with HIV testing among general population and see if there are any significant differences.

Response: The latest published DHS from Zambia is from 2001/2002 and did not link the HIV status with individual characteristics. HIV data is only linked to information about province and rural/urban residence, and specific prevalence data for Livingstone is therefore not available. As many of the questions posed in the PLACE-study are different from the questions posed on sexual behaviour in the DHS, it is difficult to compare the responses. However, we have now included a comparison of condom use with non-regular partners in the Sexual Behaviour Survey 2005.

