Reviewer’s report

Title: Event-Level Association between Alcohol Use at Last Sex and Unprotected Sex: Evidence from National Population-Based Surveys in sub-Saharan Africa

Version: 1 Date: 25 January 2013

Reviewer: Stanley Luchters

Reviewer’s report:

A) Major Compulsory Revisions

The author must respond to these before a decision on publication can be reached. For example, additional necessary experiments or controls, statistical mistakes, errors in interpretation.

1) Abstract: abstract needs to be revised and expanded: describe countries involved, define “drunkenness”, results section is unclear with some unclear interpretation of the odds ratios, conclusion is not supported by the results section.

2) Background: The statement: “That is, alcohol’s facilitation of unprotected sex may increase the potential for HIV-infection” needs explanation. Describe the underlying hypothesis of how alcohol facilitates unprotected sex.

3) Background: Describe in more detail the body of evidence that did assess event-level drinking and unprotected sex. There are a number of publications that did assess this association an should be described.

4) Methods: The first paragraph of the method section should be moved towards the end of the Methods section. Also, it is not clear what is meant with: “Oral informed consent was obtained from respondents” and a subsequent sentence stating: “….the present study did not constitute human subjects.”

5) Methods: Please clarify whether USAID was the only funder for the 8 datasets.

6) Methods: Clearly define the inclusion criteria of the datasets: in the statement: “Countries’ data were included in the analysis if the survey met following criteria…..” it is not clearly stated what kind of survey is referred to.

7) Methods: Define the criteria “self and/or partner drunkenness during last sexual intercourse”.

8) Methods: it is not clear why a low rate of alcohol use were excluded. Why is the cut-off at <5%? Looking at the table it seems this behaviour is not very dissimilar from East African drinking habits.

9) Methods: It is not clear why newer DHS datasets have not been used. As an example, Zimbabwe has a DHS dataset from 2010-2011.

10) Methods: Explain why the DHS data was not used in Tanzania and Mozambique.
11) Measures: First sentence: why is age not included as an interested “item”? 
12) Measures: Potential co-variates evaluated in the analysis should also include “country”.
13) Results: Include the proportion of participants that remained in the analysis. It seems that approximately half the population of men and women were excluded which potentially introduces a selection bias. This should be discussed. Also an explanation is needed why those with unknown HIV status are excluded from analysis.
14) Results: It is important to describe the key population characteristics in text. Also, describe condom use at last sex for the different sub-populations.
15) Results: Demographic and behavioral correlates of using a condom at last sex: For each of the odds ratios, it is important to provide confidence intervals and/or p-values. In the first paragraph of this section it is not clear if you describe unadjusted or adjusted odds ratios.
16) Results: Demographic and behavioral correlates of using a condom at last sex: It is not clear what point the authors try to make with the statement that knowledge of condom effectiveness + reporting extramarital partners is associated with higher condom use?
17) Results: Drunkenness during last sex – condom use association: The first two sentences both describe men in the Southern African region. In the first sentence, please clearly state the control group (1.2 times less likely than who?) and what about the Eastern African region? Also provide confidence intervals. Control group also needs to be clearly stated in third sentence of that section: “Specifically, in Eastern Africa…..”
18) Results: Drunkenness during last sex – condom use association: Fourth sentence: “In Southern Africa, there was a decrease…..” Is unclear and needs clarification/rephrasing.
19) Results: Drunkenness during last sex – condom use association: Last sentence of this section talks about: “rates of condom use” which needs to be clarified.
20) Table 1: detail the countries enrolled in East- and Southern Africa.
21) Table 1: Education seems a very broad categorization and possibly those with no education are different from those with secondary education.
22) Table 1: Wealth index needs clarification.
23) Table 2: this table could be merged with table 1
24) Table 3: It is not clear from the table what factors were used for adjusting
25) Table 3: It is recommended to have the reference group mentioned second. As an example married/cohabiting versus unmarried (ref).
26) Table 3: Wealth index variable is unclear. What is the reference group?
27) Table 3: Variable “Extra-relationship partners prior 12 months” is unclear. Please rephrase
28) Table 3: Steady and regular partners are grouped together which is not justified and probably also not a good idea.

B) Minor Essential Revisions
The author can be trusted to make these. For example, missing labels on figures, the wrong use of a term, spelling mistakes.

1) Abstract: in the methods section replace “samples” with participants.
2) Abstract: correct “causal partners”

C) Discretionary Revisions
These are recommendations for improvement which the author can choose to ignore. For example clarifications, data that would be useful but not essential.

1) Title: rephrase to make clear that both alcohol use and condom non-use are measured at last sex.

**Level of interest:** An article of limited interest

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

**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