Author's response to reviews

Title: Heterosexual Anal Intercourse and HIV Infection Risks in the Context of Alcohol Serving Venues, Cape Town, South Africa

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Author's response to reviews: see over
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Dr Jonathan Golub
Associate Editor
BMC Public Health
John Hopkins University, USA

Dear Dr Golub,

We are pleased that our paper “Heterosexual Anal Intercourse and HIV Infection Risks in the Context of Alcohol Serving Venues, Cape Town, South Africa (MS. 169900093535463) received a positive review and we are happy to resubmit our revised paper for publication to BMC Public Health. We have addressed all of the Reviewers’ comments in our revision. We have also carefully edited our entire paper. A tracked changes copy is included to show all edits and revisions. Below is a detailed account of our revision and our responses to the reviews.

Reviewer 1
The reviewer was quite positive about our paper and its potential contributions. The reviewer offered only one discretionary revision. She asked whether we had included the proportion of anal sex acts protected by condoms in our sensitivity analyses. We did not conduct sensitivity analyses on the observed value of proportion protected. Rather, we only performed sensitivity analyses for unobserved parameter estimates. Because proportions of condom protected acts were observed and not estimated we did not test the model under degrees of uncertainty for condom use.

Reviewer 2
The reviewer made several suggestions regarding corrections, clarifications, and presentation.

a. We have revised the abstract to include the suggested changes and edits.

b. The reviewer suggested that we place the current study in the context of previous research by making slight modifications to the Introduction section. We have made the suggested revisions. We did not however change our study hypothesis regarding expecting low rates of unprotected anal intercourse. The hypothesis was set a priori, and we are reluctant to change that now. There has been controversy regarding the role of anal intercourse in generalized, heterosexually driven HIV epidemics. Based on past research we predicted there would be low rates of this highest risk behavior.

c. The reviewer noted that we had used the term syndemic and did not carry the concept forward. We reconsidered our use of the concept of syndemics in our study. Although we examined a wide range of risk behaviors, we did not include mental health, coping, multiple diseases, and other aspects of health and behavior that are typically included in studies that use a syndemics framework. We have therefore removed the term from the revision.

d. We focused on demarcated sections within townships that are best characterized as neighborhoods. The drinking venues sampled fall within these areas. We therefore purposefully sampled a range of these venues.
within neighborhoods. However, there are great similarities across these areas given they have the same levels of poverty and stem from the same cultural group.

e. The reviewer asked about differences between participants sampled inside and outside the drinking venues. We examined such group differences and found few. Participants outside the drinking venues were proximal to the venues and in many cases were entering or exiting the venues.

f. We agree with the reviewer that the modeling in our study is important. We included the modeling to further advance the field regarding the potential role of heterosexual anal sex in generalized HIV epidemics.

g. As suggested by the reviewer, we have moved the description of men who had sex with men to the Methods section.

h. As recommended, we have added the rates of anal intercourse to the Abstract.

i. The reviewer is correct to note the implications of using short versus long retrospective periods for measuring sexual behavior. We have opted for shorter term period based on past research that has shown these intervals are likely more reliable. However, we recognize the limitations of under-estimated prevalence with a shorter time period and include this new limitation in the Discussion section.

j. We have not added statistical tests and p-values to the text that would be redundant with the tables. We were concerned about space and readability. However, should the Editor request that we include this information we can certainly do so.

k. We did not include multiple measures of alcohol use in the logistic regression analysis. We were concerned about statistical overlap and redundancy. We included those alcohol variables that are most proximal to sexual risks.

l. We did not stratify the multivariable model by gender because we were interested in testing a single model that accounted for gender in the analyses. Having a single model predicting anal intercourse for both men and women has clearer prevention implications because both genders are partners in this behavior.

We appreciate the thoughtful comments provided by the Reviewers and we believe that our paper is much stronger as a result of the review process. Thank you again for considering our paper for publication in *BMC Public Health* and I will look forward to hearing from you.

Sincerely,

Seth C. Kalichman, Ph.D.
Professor