Reviewer's report

Title: Number of casual male sexual partners and associated factors among men who have sex with men: Results from the National HIV Behavioral Surveillance system

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Reviewer: Lisa A Eaton

Reviewer's report:

Number of casual male partners and associated factors among men who have sex with men: Results from the National HIV Behavioral Surveillance System.

The reviewed manuscript provides data necessary for a better understanding of sexual risk taking among MSM. The manuscript is grounded on the premise that we do not understand well-enough why HIV prevalence varies among MSM of different ethnicities, particularly African-American MSM being infected with rates of HIV higher than Caucasian MSM, while information on risk behavior does not explain this disparity. The current paper sheds light on what is clearly an important area of research.

The data provided in the paper are interesting and can inform future research. My comments mainly revolve around questions relating to data analyses and justification for variables studied.

Major Compulsory Revisions

The study would be improved by having better justification for the analyses. The way it reads now it seems that the analyses were determined a posteriori, which is a problem for significance testing. If this is the case then frame the introduction as an exploratory analysis and introduce and report on all the variables of interest. I want to know, upfront, why sexual identity and female sex partner is an interaction of significance, same for chat room usage, age and HIV status and age etc.

Creating interactions terms based on preliminary data and expert opinion is not sufficient justification.

What is meant by data being back-transformed? How are the data weighted? And what makes the partner count geometric?

It's surprising that partner counts would be normal after applying a log transformation. Is this correct? Count data should analyzed using the Poisson distribution.

Is it correct to state that participants with any missing data were removed? Why would these participants be removed from analyses? Did you test for differences between those removed those not?
Minor Essential Revisions

There are some small typos in manuscript, e.g., only is repeated in abstract, keep consistent if numbers are spelled out or numeric, time frame of data collection needs to be added to abstract.

What is the significance of the CDC classifying the data as non-research?

Discretionary Revisions

It is surprising to read that, “While these interventions all examined partner number, none looked at number of casual partners specifically.” Please confirm that none of the 5 interventions mentioned consider relationship status or partner type.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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