Reviewer’s report

Title: Latent class analysis of sexual health markers among men and women participating in a British probability sample survey

Version: 0 Date: 20 Aug 2019

Reviewer: Devon Hensel

Reviewer's report:

This is an important paper - we need to understand how a holistic model of sexual health may actually vary in how components fit together. I have a number of comments below which could improve the accessibility of the manuscript to journal readership.

1. Please provide some text in the background as to how current knowledge about how sexual health components vary by gender, partnership status, socio-demographic, lifestyle and health factors, etc. There is some evidence of heterogeneity in these factors that will strengthen the background section.

2. Latent class analysis provides a number of important advantages over traditional methods - the authors state this idea somewhat, but could emphasize other utilities more (e.g. does not assume apriori membership in "risk" categories) that are often common aspects of sexual health research.

3. Were there any Natsal measures available that were NOT used here? If so, what were these and why?

4. Can the authors provide a citation for a good "how to" example of LCA using MPlus for readers who are interested in using this method in their own work?
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?
If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal