Reviewer's report

Title: Relationship between single and multiple perpetrator rape perpetration in South Africa: A comparison of risk factors in a population-based sample

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Reviewer: Kathryn Yount

Reviewer's report:

Review of Relationship between single and multiple perpetrator rape perpetration 1 in South Africa: A comparison of risk factors in a population-based sample

The authors investigate similarities and differences in the determinants of men's perpetration of single-perpetrator rape (SPR) and multiple-perpetrator rape (MPR) in a probability sample of men 15 – 49 years in a region of South Africa. The topic is an important one, with clear policy implications about tailoring interventions with the appropriate groups of men to prevent the occurrence of these forms of violence. The comments, below, are provided for consideration to improve further the contributions of this important manuscript.

Discretionary comments:

Background – In general, the background section provides clarity of the definitions of SPR and MPR and the context of South Africa. More on the known determinants of SPR and MPR would have been beneficial to motivate the choice of covariates in the analysis.

Sample – The sample was derived from the 2001 census – what potential limitations are there with a census frame that is 13 years old, and what steps, if any, were taken to mitigate these limitations? What implications, if any, are there for the representativeness of the sample and associated inferences?

Data collection on rape – The authors conducted cognitive interviews to adapt questions about rape. One of the sample questions asked about sex without “consent” – how knowledgeable were men about the conditions that are required for consent, and to what extent might the estimates derived from this question constitute an underestimate of rape cases?

Data collection on covariates – The main covariates are psychological, attitudinal, and behavioral. The authors do not appear to include any basic socio-demographic variables. Is there a rationale for this strategy? Which variables constitute the exposures of main interest, and which, if any are control variables? Again, some framing for the choice of covariates would be helpful up front, in the background section.

Analysis – The background section does not provide a conceptual rationale for testing all possible interactions, and some might interpret this analytic strategy...
unfavorably. A stronger rationale (e.g., this being an exploratory analysis) is needed to justify so many variable tests. The authors might also consider, given their estimation of multiple comparisons, using more conservative p-values when determining “significant” findings.

Results – When the ordered logistic regression models were fit, did the authors test the proportionality assumption for each covariate? This test would help to provide a more refined answer to their research question, as it would help to specify precisely those variables for which the coefficients are constant, regardless of the cutpoint selected (e.g., the determinants are the same for SPR and MPR men) and the variables for which the coefficient is not constant and should be estimated separately for each cutpoint.

Missing data – Was there a specific rationale for choosing listwise deletion only? Were any sensitivity analyses performed to determine the robustness of the findings based on an alternative strategy for handling missing data? This strategy might strengthen confidence in the findings.

Minor comments:

Results – in the results section, I would report the findings for rape as “reported rape” given the uncertainty of the reporting, despite using the anonymous report format.

Lines 314-315: The sentence on this line is unclear and should be revised (it reads as if the mothers performed rape.)

Line 321: When making comparisons across groups of estimates from cross-sectional data, I would speak in terms of higher/lower differences rather than increase/decrease differences, the latter of which incorrectly implies change over time.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests