Reviewer’s report

Title: Aggressive behavior among drug-using women from Cape Town, South Africa: ethnicity, heavy alcohol use, methamphetamine and intimate partner sexual violence

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Reviewer: Mekeila Cook

Reviewer's report:

Review of manuscript: BMWH-D-16-00282 entitled, "Aggressive behavior among drug-using women from Cape Town, South Africa: ethnicity, heavy alcohol use, methamphetamine and main partner sexual violence".

This paper addresses an important public health concern by tackling an under-studied area of violence perpetration by women. The authors seek to explore factors related to aggression (defined as verbal, physical, or use of a weapon). The main factors examined were age, ethnicity, substance use, and main sexual partner violence. Given the important topical nature of this study, there were a number of theoretical and methodological concerns that need to be addressed.

The introduction at times seems a bit disjointed. Take the following excerpt for example: "For example, studies have shown that women are becoming increasing verbally aggressive (16) and violent (17) in relationships, in response to interpersonal violence from their male partner (18). In these settings, substance-using women have been found to engage in both physical and verbal aggression (19, 20). Furthermore, there is emerging evidence that women who self-identify as gang members engage in physically violent behaviours, such as fighting with weapons (21)." Does "in these settings" refer to experiencing intimate partner violence? Also, does this statement only apply to substance-using women who engaged in aggression with a male partner who has been violent towards them? This statement needs to be further unpacked. Are the authors suggesting that the aggression substance-using women are exhibiting towards their male partner is due to the woman's use of alcohol and drugs? Are the authors suggesting that the aggression substance-using women are exhibiting towards their male partner is in response to violence perpetrated by the partner? These points need to be clarified. Additionally, the next sentences proposes that aggression in women is associated with being a gang member but there is no context provided with this statement and the authors do not provide an explanation of how gang-membership ties into the current study.

Theoretical Concerns:

On page 5 the authors state: "This paper aims to address this gap through describing aggressive behaviour among substance-using women in Cape Town, South Africa and exploring potential
factors associated with verbal, physical and weapon-using aggression among substance-using women." The authors do not provide a rationale for choosing the factors included in the analysis. Furthermore, the authors do not provide hypotheses for what they expected to find. Given the exploratory nature of the study, the paper would greatly benefit from the inclusion of a theoretical framework to guide the study.

Methodological Concerns:

More detail on the sampling design needs to be provided. The authors offer the following sentence: "Outreach workers visited each communities and marketed the study with flyers, and spoke to women who were possibly eligible." How did the outreach workers market with flyers? Did they post fliers somewhere? Were flyers handed out directly to people? Furthermore, were there targeted areas that outreach workers visited like markets, schools, hair salons, etc.?

Approximately how long did the interview take participants to complete?

There needs to be more details provided on the measurements used in the study. What is the reliability score of the Revised Risk Behaviour Assessment? Being that the authors featured certain demographic factors in their analysis more details about these factors need to be provided. For example, what is the length of time assessed for unemployment (currently unemployed, 3 months unemployed, 6 months, etc.)? How was income assessed? For educational attainment, did the authors control for women who were currently enrolled in school and had not yet completed high school? Are the ethnic categories limited to only Black and "Coloured" women?

A more thorough description of the interpersonal violence questions needs to be included in the measures section. A related recommendation is to move the following description from page 7 to the measures section: "frequency of drinking, cannabis use and methamphetamine use in the past 30 days, and main sex partner violence in the past six months on verbal, physical and weapon aggression in the past 90 days…"

A description of how the Conflict Tactics Scale is scored is needed.

The Results section needs more development. In the section on substance use and intimate partner violence, the authors report women with a higher average meth use were more likely to report the 3 types of aggression. What is considered a "higher average”? The entire results section needs to be re-written to provide context to the numbers presented. For example, presenting the mean and range of meth use in the past 30 days would provide context to the reader so when the authors present Chi-Square results the reader will have a base from which to compare. This can be easily addressed by presenting a table with simple summary and descriptive univariate statistics for each variable of interest.
Under the multivariate analysis section, the authors need to add an introductory sentence summarizing which analysis they are using and specifically naming the factors included in the analysis. Stating "other possible confounding variables" is unclear. As stated above, "heavy drinking" needs to be quantified and defined.

The current study seems to present substance use and aggression in one regression model and aggression and main partner violence in another regression model. It would seem that substance use by the participant may account for some of the variance observed between aggression and main sexual partner violence. A recommendation is to run a regression that includes main sexual partner violence, aggression and substance use in a model together.

Discussion section

The following statements needs to be developed more:

On page 9, "Our findings show that an unexpectedly high proportion of substance-using women engaged in recent acts of aggression." First, in reference to "unexpectedly high proportion"; it is difficult to understand what the authors expected to see when hypotheses are not presented.

On page 9, "This is a concerning trend as it may increase their risk for violence against them as previous studies indicated and may perpetrate cycles of substance use and violence towards women that are often experienced in these communities." What is a concerning trend? That women use substances or that women reported recent aggression? The statement about cycles of substance use needs to be unpacked; for example, why would their aggression lead to more violence victimization? There are a number of theoretical frameworks that address the relationships between substance use, violence perpetration and violence victimization. The authors need to provide more detail and explanation on this point.

On page 10, the authors write: "… there is also evidence that violence against women is inter-generationally transmitted, especially domestic violence". This is a new theory that is not previously discussed in the Introduction. The authors do not provide context about how inter-generational violence may be associated with aggression among substance-using women. The point raised by the authors requires more explanation.

On page 10 the authors appear to link the finding of a positive association between ethnicity and verbal aggression with gang-activity. Although studies are referenced in the Introduction, the authors should take extreme caution in the manner in which they draw conclusions. Being that gang affiliation was not assessed in the current study, this statement is a gross oversimplification of the findings. If the authors plan to offer gang affiliation as a possible reason for the association between ethnicity and verbal aggression, the authors will need to address the socio-cultural implications for gang-affiliation and would likely need to include a discussion on
racial and ethnic inequity, segregation and other structural factors that may contribute to this finding.

On page 10, the authors report that there was not a statistically significant difference between heavy alcohol use and physical aggression. I assume the authors expected to find an association? The authors do not offer an explanation or possible reason as to why they did not find a relationship.

On page 12, the authors state "In South Africa, there are many barriers to substance-using women accessing mental health services that include trauma support (29). Trauma-informed substance use services are needed for women to prevent the progression of substance use as well as violent behaviour." The authors do not discuss the barriers to treatment women face in South Africa. A discussion on these barriers could lend to policy and practice-based suggestions.

General Concerns and Suggestions:

In the first paragraph of the Introduction, the authors refer to prevalence rates for homicides but do not provide numbers. It would be helpful to readership outside of South Africa to have numbers to better understand the national and global average of homicide rates that are being compared.

Is there a specific reason the authors use the term "main sexual partner violence" as opposed to intimate partner violence? Given the rich body of work that has been published on intimate partner violence, the authors may need to provide rationale for using the term "main sexual partner violence" in the measures section.

In reference to the aggression measure, the authors do not provide information about the relationship between the participant and the victim. Was there a question on the survey to assess relationship? If not, this should be included as a limitation of the study. The omission of details about the relationship becomes magnified in the Discussion section when the authors are discussing the relationship between aggression and male partner violence. It is unclear as to whether the aggression the participant reports is within the context of experiencing intimate partner violence or if the participant expresses aggression towards someone other than her intimate partner but also happens to experience main sexual partner violence.

Tables:

Table 1 is very difficult to read and understand; it needs to be formatted so that a complete word appears on a single line. Consider creating table in the landscape orientation setting.
Provide a caption for terms in the table. For example, "Emerging adult" = ages XX-ZZ

Add a space between numbers and parenthesis. For example, 5.79 (2)

Minor Concerns:

On page 10, the authors state: "A possible reason was that the age range of the sample was restricted, with all participants being under 35 years old." On page 5 the authors state the age range is 18-33.

Need citation for the following statement: Previous studies have also shown that there is indeed a long history of violence in the Western Cape.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

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

Unable to assess

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

No

**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.

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