Reviewer's report

Title: Child maltreatment and hypertension among young adults

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Reviewer: Chioun Lee

Reviewer's report:

This manuscript uses outstanding data from the National Longitudinal Study of Adolescent Health (Add Health) to examine 1) the association between child maltreatment and risk of developing hypertension in young adulthood and 2) whether the association varies by gender.

This study addresses important questions related to the long-term effects of early life adversities and the findings would have important implications for understanding the ways that men and women who experienced traumatic events in childhood develop chronic diseases. However, the manuscript has a few methodological and conceptual limitations that potentially undermine its persuasiveness and impact. Key among these are: lack of attention to the pathways through which child maltreatment may increase the risk of having hypertension; potential gender differences in these pathways; unclear descriptions and interpretations of analyses; and lack of a discussion of how the paper extends prior studies. With attention to these and other issues, outlined below, the paper may make a valuable contribution to research on child maltreatment.

Major revisions

Literature review:

• There is not clear evidence across studies establishing that men are more likely to experience physical abuse and neglect. Using one citation [10] published in 1997 does not sufficiently support the authors’ argument. I’d like to suggest either including more citations or re-phrasing the sentence.

Aims of the study:

• In both the abstract and main text, it is unclear what exactly the authors aimed to investigate. Did this study examine whether each type of childhood maltreatment affects the risk of having hypertension in young adulthood? Did it examine potential mediators, such as health behaviors and depression (as described on page 4)? If so, the authors should describe the mediators more clearly in the abstract and at the end of the introduction.

Methods:

• The authors might want to rearrange the measurement section to clarify which covariates are controls (e.g., age, race/ethnicity), moderator(s) (sex), or potential
mediators (e.g., smoking, exercise, BMI).

- It would be useful if the authors reported correlations between the four variables related to childhood maltreatment, for men and women separately.

Data analyses:
- The authors should clarify parts of the sentence: “Given the high prevalence of hypertension in this sample.” It is unclear what percent of respondents meet the criterion of hypertension in the sample and how such (high) prevalence may affect the results of this study.

- The authors should clarify how the four independent variables were operationalized. Did the authors recode ordinal variables as dichotomous variables? Why didn’t the authors utilize the original scale to investigate whether the severity of abuse/neglect is important?

- Given that the authors adjusted for obesity, alcohol use, physical activity, and smoking as well as high depressive symptomatology, I assumed that the authors were aiming to explore potential mediators, but neither the literature review nor the methods section clearly describes potential mediators. The authors might want to elaborate those parts of the paper.

- Until examining Table 2, it is difficult for readers to understand the way that the authors included each type of child maltreatment and having social services in the models. The authors might want to address the following questions in the main text. Did the authors include all four variables of childhood maltreatment in the same model? What would be the theoretical and methodological justifications for such a model? Why didn’t the authors create a summary measure to indicate whether respondents experienced any of the four forms of childhood maltreatment?

Results:
- Given that there are various gender comparisons in types of childhood abuse and health behaviors, the authors might want to include p-values in Table 1 to show which gender differences were statistically significant.

- Interpretations of Table 2 are unclear. Does Model 1 include all four types of childhood maltreatment? If so, the effects of sexual abuse on risk of having hypertension should be interpreted; for example, after controlling for other types of abuse/neglect and having social services, experiencing sexual abuse is significantly associated with risk of developing hypertension.

- It is unclear what PR stands for in the text AND what RR sands for in Table 2. Did the authors report relative risk? If so, it should be RR in both Table 2 and the main text.

- In the discussion section (page 9), the authors mention that health behaviors partially explain the association between sexual abuse and risk of having hypertension. The authors might want to include a percentage change of RR
before and after including potential mediators and report whether these mediators significantly reduce the main effects of sexual abuse.

Discussion:

• On page 9, the authors mentioned that data limitations prevent them from characterizing the severity and frequency of child maltreatment. However, the original scale of childhood maltreatment, which ranges from 0 (= never) to 5 (= more than 10 times), possibly captures the frequency or severity of childhood abuse. The authors should clarify why the original scale was not utilized.

• The authors also should add some discussion about why there was a significant association between sexual abuse and hypertension for women only. If the link was attributed to health behaviors, which health behaviors? Are some health behaviors particularly harmful for women who experienced sexual abuse?

Figure:

• The authors should include a note in Figure 1 that indicates whether the bar graphs (e.g., abuse vs. no abuse) are significantly different.

Citations and references:

• The authors should double check all references. Some items in the references do not match the citing text. For example, on page 3, the authors write that “...681,000 children were victims of some form of maltreatment in 2011.[2]” BUT the citation number [2] in the list of references was published in 2010.

• The authors should include a citation for the sentence “[a]n estimated 8% of the US population has undiagnosed hypertension,” on page 3.

Discretionary revisions

• The authors should edit the manuscript very carefully. Some parts of the manuscript were hard to follow. There were several typos and the citation format was not consistent—for example, on page 3, there is a different citation format with the reference number 5 (superscript).

Terms:

• The authors inconsistently described the developmental period or age at which the respondents might have experienced child maltreatment. The authors use “prior to 6th grade,” “early childhood,” and “prior to age 11.” In the child developmental perspective, does 6th grade refer to early childhood? Are all 6th graders younger than age 11?

Overall, the authors pose an interesting question. With further attention to a few important methodological issues, this manuscript may make a valuable contribution to research on childhood adversity and adult health.
Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests