Reviewer’s report

Title: The association between pre pregnancy body mass index and risk of preeclampsia: a registry based study from Tanzania

Version: 0 Date: 30 Oct 2016

Reviewer: Tiffany Moore Simas

Reviewer’s report:

Thank you for the opportunity to review this manuscript.

This manuscript addresses the association of pre-pregnancy BMI with preeclampsia risk. It is well established in the literature that increasing BMI is associated with increasing preeclampsia risk. Although the authors acknowledge this, they state that study of this is novel in this population studied. I agree the manuscript can contribute to the literature. That being said, if the population is the novel contribution, I would like to see more in the discussion about this and how risk factors may be different in this population versus others. It would also be worthwhile to discuss if the rate of preeclampsia (3.3%) is consistent with or lower than anticipated.

Abstract:

- Sentence from lines 58-59: the wording of this sentence is awkward. Please revise. Additionally, in the methods portion of the manuscript, please include justification for way the analytic cohort was restricted to women with gravidity of 1 or 2 only.

- Line 62: after underweight, please include the % of women who were of normal BMI.

Background:

- Line 24: the sentence starting 'most large studies'. . .is awkward. Please revise.

Methods:

- Line 114: please provide additional details about the interview. Were these face to face interviews? Were they conducted in the hospital or at home? Etc. It would seem they are face to face in the hospital but please clarify. Were they tape recorded or notes taken? Did the questionnaires contain all easily quantified data (i.e. multiple choice, likert scales, discrete answers) or was there a qualitative component? If qualitative, how was the information captured and analyzed?
- What percent of the women in this community receive prenatal care and what percent have hospital deliveries? This has the potential to be a biased sample. Please include this in the discussion.

- Line 118: changes 'ae' to 'are'

- Line 121: this sentence states that 'details of data collected during interview are shown in a questionnaire' - is it anticipated that the reviewers/readers can see this questionnaire? If yes, it should be included as a figure or appendix. Seeing it would also address some of the questions above.

- Line 127 mentioned that the sample includes mothers 'whose reproductive history data were entered into the medical birth registry.' What dictates whether this happens or not? How does this bias or influence the sample.

- Line 130 describes that only women having their first or second singleton birth are included. Please provide justification for this. Please also provide additional details for how this was executed. For example, if a woman had an 18 week loss, followed by a twin delivery, and now delivered her first live singleton - is she included or not?

- Line 131: please change 'multiple births' to multifetal pregnancies as it seems the authors are referring to twins, triplets, etc.

- Line 141: the authors state that they use the WHO definition of preeclampsia include mild, moderate, and severe. Please provide a reference for this approach. The documents I reviewed only had mild and severe. Currently, through the task force on hypertensive disease of pregnancy, we are referencing preeclampsia with and without severe features and have eliminated the term mild.

- Line 142-143: BMI was based on 'self-report' maternal prepregnancy weight and height - please include in discussion any potential imitations of this approach.

- Line 144 - please clarify that it was gestational age 'at delivery' used as a proxy for 'preeclampsia severity' rather than 'a proxy for severity of preeclampsia'

- Line 155 - see prior comment about line 130.

- Line 175-176 - please provide justification for weight cut-off between 164 and 165 cm - how was this informed?

Results

- Line 184: please include % for normal BMI mothers
- Line 185: although these are the 'highest mean BMI' it is worth noting that they are overwhelming within the normal range and there were small differences between categories within the same variable.

- Line 185: highest proportion of obesity in marriage group was actually those with missing data, not marked women. Please clarify if 'married' is the same as 'with partner'.

- Line 187: remove the extra period

- Line 188-191: make the sentences consistent with what is presented in the table - for example, highest proportion of underweight was found in moms missing information on education, not those without education; and the highest proportion of underweight was found in moms with height >=165 cm, not <155 cm.

- Line 195: a preeclampsia rate of 3.3% strikes me as low for this population. Please address this in discussion - is it consistent with relevant literature, might there be something about this population that it has such a low rate

- Line 202: designate the OR in parenthesis as an adjusted OR, if that is what it is.

Discussion:

- Please discuss rate of preeclampsia (3.3%) and if expected or not - and if not, possible explanations.

- Lines 263-270: self-report prereg wt is acknowledged as a limitation. However, please bring in relevant literature to speak to how this may or may not have influenced your results. Is there anything to support whether women from this population are likely to over or underreport their weight?

Conclusions:

- Line 273: please change sentences to say 'There appears to be an association between increased pre pregnancy body mass index category and increased preeclampsia risk, in this resource limited population.'

Table 1:

- Take out the 's' and capitalize 'Characteristics' in column 1

Table 3:
- This table is confusing as to which p-values go with which tests/columns. Additionally, there are some entries in cells that shouldn't be there (e.g.; 'ref' in 5th row, 5th column) - look at this table carefully and try to make easier to read and interpret.

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.

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?
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