Reviewer's report

Title: Differentials in prevalence and correlates of metabolic risk factors of non-communicable diseases among women in Sub-Saharan Africa: Evidence from 33 countries

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Reviewer: Shafika Abrahams-Gessel

Reviewer's report:

This is an important topic, especially the focus on women, given the dearth of risk factor data that focuses on the reproductive period for women. The paper as currently written is poorly organized and critical sections are either murky or not adequately fleshed out for the reader. I realize that the documentation for DHS surveys are available but the authors should bear in mind that not all readers who will benefit from this information will be readily able to access the information. Additional, brief descriptions of pertinent information will strengthen the connections between the analytic choices, the results, and the appropriate interpretation of the data. Some specific comments are listed below and I hope the authors are willing to invest some additional effort to make this paper excellent.

MEASUREMENT OF OUTCOME VARIABLE

The second sentences notes that anemia was stratified "while adjusting for pregnancy" - this is confusing. Was this adjustment by never vs. ever parity, by number of pregnancies, or something else? It is also unclear why categorizing a continuous variable requires adjustment by a second variable as part of the definition of an outcome. It would also be useful here for the authors to cite sources leading to the choices of categorization of the BMI and hypertension variables. Presumably these were chosen to be consistent with WHO guidelines but noting the rationale for the choice strengthens the assumptions underlying the validity of the analytic approach.
INDEPENDENT VARIABLES
The punctuation in this section makes the text very hard to follow.
With fruit and vegetable consumption, the authors should note the units used to classify the categories as low, moderate, and high. While the DHS survey documentation undoubtedly lists these categories, the variables as described here are uninformative. Are these categories mean grams of intake per day, or servings per day or something else?

STATISTICAL ANALYSES
Generally, this section is lacking a justification for the various analytic choices: what aspects of the evidence base related to NCDs justified the various statistical choices?
Some of the writing is also unclear and needs to be improved, e.g. "All explanatory variables were retained for analysis due to lack of collinearity factors that were statistically significant in the unadjusted analysis results were added in the multivariable regression models to adjust for covariates".

RESULTS
The biggest problem with this section is that none of the results listed call out the relevant tables appropriately. The reader is left to go back and forth in the text to try and determine which table specific results are calling out.

DISCUSSION
The biggest detraction here is that paragraphs 2-4 offer the authors' theories about how the observed results may be explained but there is very little evidence cited to back up the interpretation.
For example, in the 2nd paragraph the authors offer a theory that the content of alcohol and nicotine could be making a biological contribution to risk reduction but offer no citations for the plausibility of this biological theory.

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.
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