Author’s response to reviews

Title: Television exposure and overweight/obesity among women in Ghana

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Version: 1 Date: 26 May 2017

Author’s response to reviews:

RESPONSE REVIEWER’S COMMENTS TO AUTHOR

Allana LeBlanc, PhD (Reviewer 1):

COMMENT:
- In most places you have used the terms overweight and/or obesity, but in your classification of obesity you have just used the term obesity. Why?

RESPONSE:
The manuscript has been revised to rectify the inconsistency. Please refer to page 8, line numbers 8-15.

COMMENT:
- How was weight measured in the GDHS?

RESPONSE:
Details of how weight and height were measures have now been provided in the revised manuscript. Please refer to page 7, line numbers 21-44.

COMMENT:
- I think it would be helpful to include a schematic of how you classified your participants. A figure would help the reader to visualize how many people are in each group (i.e., no TV/low watching, noTV/moderate watching etc)

RESPONSE:
As suggested, a schematic and a graph have been provided in figures 1 and 2, respectively in the revised manuscript.

COMMENT:
- You did not explain your parity variable, please add in a point about this and the rationale for inclusion

RESPONSE:
As suggested, justification for the inclusion of parity has been provided in the revised manuscript. Please refer to page 9, line numbers 19-24.

COMMENT:
- You spoke a great deal about energy imbalances and impact of TV viewing on energy intake in your introduction, but I feel this was inadequately covered in your analysis. Does the GDHS have any information on diet that could help strengthen your argument?

RESPONSE:
I must admit that including analysis of diet and physical activity would strengthen the arguments raised in the manuscript. Unfortunately GDHS did not collect such data to enable such analysis. However, this has been duly acknowledged as a major limitation in page 15, line numbers 16-21 in the manuscript.

COMMENT:
- Further, does the GDHS have any information on total sedentary time? Physical activity?

RESPONSE:
As already indicated above, GDHS did not collect data on physical activity to enable such analysis. However, this has been duly acknowledged as a major limitation in page 15, line numbers 16-19 in the manuscript.
COMMENT:
- I wonder if those who tend to watch TV in groups are also doing other behaviours that impact their weight? It seems like this could be a potentially beneficial social behaviour?

RESPONSE:
Thank you for this interesting observation. However, the current scope of the paper and data did not permit me explore the possibility of other group behaviours that could impact their weight.

COMMENT:
- In developing countries, you often see a reverse trend towards those in higher SES groups being heavier thus being more desirable. Do you think this is amplified by TV ownership? In other words, women want to have a TV, watch it often, and be classified as having obesity? Given this is self-report data, it seems likely that a report bias exists?

RESPONSE:
Thank you for yet another interesting observation. I must admit that the social valorization of heavier body type in this part of the world could have implications for people’s weight related choices and perhaps lead to reporting bias. However, such bias is minimal given that the data in TV watching was not intended for the measurement of weight related issues during the time of data collection.

Lin Yang (Reviewer 2):
COMMENT:
This manuscript examined the cross-sectional association between TV exposure and overweight/obesity among Ghanaian women using a national representative data. It is indeed an interesting question to be investigated in this particular sample given the rapid social and economic change in developing countries. The biggest concern about this analysis is the lack of measures of physical activity and energy intake. In the discussion session on page 11 and 12, author stated possible explanations of the observed association between TV exposure and weight that was reported in previous research studies, but none of these statements were able to be explored in the current data.

RESPONSE:
I very much appreciate this concern and I must admit that including analysis of dietary energy and physical activity would strengthen the arguments raised in the manuscript. Unfortunately GDHS did not collect such data to enable such analysis. However, this has been duly acknowledged as a major limitation in page 15, line numbers 16-21 in the manuscript.

COMMENT:
Second, author mentioned that the survey included samples of men and women. Please justify why only data on women were analyzed.

RESPONSE:
As suggested, an appropriate justification for limiting the analysis to women has been provided in the revised manuscript. Please refer to page 6, line numbers 18-24.

COMMENT:
Abstract, please include sample size.

RESPONSE:
The Abstract has been revised accordingly.

COMMENT:
Page 9, line 1-22: the first paragraph is not easy to understand. For instance, "a greater proportion (47%) of ", please specify what was author comparing 47% to for being greater. Similar confusions rose with "more widowed/divorced/separated (15%) women", "more cohabiting (45%) women". In addition, author quantified proportions at some, but not all statements.

RESPONSE:
The affected section of the manuscript has been revised accordingly. Please refer to page 10, line numbers 24-25 and page 10, line numbers 1-9.
COMMENT:

Page 14, line 31, please give more specific examples on how to design interventions to encourage the uptake of more physically demanding pastime activities.

RESPONSE:

As suggested, specific examples have been provided in the revised manuscript. Please refer to page 16, line numbers 12-13.

Jewel Gausman (Reviewer 3):

COMMENT:

Page 3:

Line 10: Could any additional information be added to this paragraph on overweight and obesity in Ghana? For example, are there any population subgroups that are more affected than others? Rural/urban? Rich/Poor?

RESPONSE:

As suggested, additional information on overweight and obesity in Ghana has been provided in the revised manuscript. Please refer to page 3, line numbers 12-17.

COMMENT:

Line 15: "are fundamentally a natural consequence of an" could be changed to "related to", as some research indicates a more complex relationship between calorie consumption and exercise than the current text indicates.

RESPONSE:

As suggested, "are fundamentally a natural consequence of an" has been changed to “result from” Please refer to page 3, line number 18.
COMMENT:

Line 18: Please describe some of the associations (magnitude and direction) that are most relevant to this paper. Have any of these studies been conducted in Ghana or West Africa?

RESPONSE:

As suggested, further details have been provided on the magnitude and direction of association. Studied in Ghana have also been cited. Please refer to page 3, line numbers 24-25 and page 4, line numbers 1-3.

COMMENT:

Page 4:

Line 2-4: "It is hypothesized that, TV viewing displaces participation in high-intensity discretionary physical activity, reduces resting energy expenditure compared to other activities, and increases sleep deprivation" Please include a citation for this.

RESPONSE:

An appropriate citation has been provided as suggested. Please refer to page 4, line number 10.

COMMENT:

Line 19: Perhaps "possible mechanisms" would be a better word instead of "possible links"

I am not quite sure

RESPONSE:

As suggested, the section referred to has been revised accordingly. Please refer to page 5, line number 1.

COMMENT:

Page 5:

Line 4: Were the 18 countries included in the study all high income countries?

RESPONSE:
The countries included in the study cut across low, middle and high income countries. This has been clarified. Please refer to page 5, line numbers 10-11.

COMMENT:

Line 6: It strengthen the background section to provide more information as to the television watching habits in Ghana. For example, have there been studies that show that television habits in Ghana or West have started to increase? Who typically consumes the most television - youth/adults, rich/poor? Where do people most often watch television? Do most homes have a television?

RESPONSE:

Further details about television watching habits have been included in the revised manuscript. Please refer to page 5, line numbers 24-25, and page 6, line numbers 1-17.

COMMENT:

Page 7:

Line 5: The independent variable described is not a scale, rather it is an index. Please consider the causal relationship. With scales, the goal is to measure an underlying construct that causes the items in the scale to be observed, whereas with an index, the variable is caused by the items that comprise it. In this case, not having a television and frequency of watching television cause one's television watching habits, therefore the measure being used is an index, not a scale. Internal consistency reliability (measured through Cronbach's alpha) is not appropriate for an index.

RESPONSE:

I would like to thank you for such a critical observation and suggestion. Indeed the application of Cronbach’s alpha was not warranted in this case. The independent variable was basically a categorical variable generated out of possible outcomes of the presence of TV in a household and the frequency of TV viewership, which is neither an index. I believe the dependent variable as currently constructed is multinomial variable based on grouping and can be used in its current form without the need for a post-hoc validation. Therefore, section on Cronbach’s alpha has been deleted from the manuscript.
COMMENT:

Also, is the measure of television watching used similar to what has been done in other studies on this topic? Please also define what is meant by high, moderate and low television watching. How many hours per week? Is this measure consistent with the literature?

RESPONSE:

The literature is inconsistent as far as the measure of television watching is concerned. Nonetheless, the measure used is a standard measure used in all Demographic and Health Surveys across the world, and it is measured based on responses to the question: “Do you watch television less than once a week (moderate), and at least once a week (high), or not at all? For the purpose of this study, not at all, less than once a week, and at least once a week were considered as; no exposure, moderate exposure, and high exposure, respectively. Therefore, the manuscript has been revised accordingly

COMMENT:

Line 15: Consider moving some of this background information to the introduction section.

RESPONSE:

Thank you for the suggestion. Adequate information on TV watching habits has been provided in the introduction in the revised manuscript. Hence, this section is maintained as it provides important context for the classification of the independent variable.

COMMENT:

Page 8:

Line 3: Typo with regard to parity. Please also include whether this is a continuous or categorical variable.

RESPONSE:

Typo has been corrected and information on parity as a categorical variable has been provided in the revised manuscript. Please refer to page 9, line numbers 19-24.

COMMENT:

Page 11:
Line 12: Discussing the types of exercise that these women traditionally engage in that television watching would replace would strengthen the plausibility of there being a mechanistic relationship.

RESPONSE:

As suggested, this now been specified in page 13, line number 13.

COMMENT:

Line 17-19: Consider moving reference to this study into the background section as it provides important background information and motivation for this research.

RESPONSE:

The references referred to here have been moved as suggested, Please refer to page 5, line numbers 17-21.

COMMENT:

Page 12:

Line 21: Consider removing the word "mediator." Mediators are typically thought of as lying between the exposure and the outcome along the causal pathway. In this example, it does not seem like the covariates included in this study and referenced here, such as wealth and education, would be caused by television watching, as would be the condition required for them to act as mediators.

RESPONSE:

As suggested, “mediator” has been deleted.

I would like to thank the reviewers for their insightful comments and suggestions. I believe they have helped improve the manuscript to a great extent.