Author’s response to reviews

Title: A cluster randomized controlled trial for child and parent weight management: children and parents randomized to the intervention group have correlated changes in adiposity

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Author’s response to reviews:

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Dear Editor and Reviewers:

We thank the reviewers for their thoughtful review of our manuscript and have made the corrections in the text. We have provided a track changed paper and a clean paper so that you could see where the corrections were made.

Amanda Raffoul (Reviewer 1): The authors provided a clear, concise description of a study investigating associations between children's and parents' changes in several measures after a weight management program. The background section provides a succinct overview of the literature in this area, and highlights the importance of this study.

Thank you for the overview.

Major comments:

1. Throughout the paper, the authors fail to use person-first language to describe children and adults affected by obesity (i.e., page 4, lines 12, 21, 52-53). Person-first language in obesity asserts that the individual comes before their condition, and assists in reducing the implicit stigma associated with excess weight that is prevalent in obesity-related writings (Kyle & Puhl,
2014, Obesity). Recently, the American Medical Association declared support for use of this language. The authors should make changes throughout the manuscript to use person-first language when referring to persons with obesity.

Thank you for pointing this out and changes have been made throughout the manuscript to reflect person-first language. (Page 3-lines 4 and 20, Page 4-lines 4,6,11, and 23, Page 5-lines 8 and 9)

2. In the Discussion (Page 10, Lines 9-34), the authors describe participants' perceived structural barriers to achieving dietary change. These anecdotal evidences should be placed in the context of the self-efficacy literature, and perhaps explain why one's perceived ability or belief to accomplish a task may not have been sufficiently changed with the program. Further, why might there be differences in these perceptions between the parent-child dyads? Thank you for the suggestion. We have made that change in referenced the self-efficacy literature (Page 10-lines 8-14). We are unsure why there were differences in perceptions between the parent-child dyads.

3. The authors suggest that changes in nutrition knowledge were assessed in both children and adults. However, the described measures on Page 10 (Lines 9-19) are assessing actual nutrition- and diet-related behaviours, not knowledge. The measure used to collect the data, then, may not accurately reflect the construct that is being assessed (nutrition knowledge). If the authors are inferring that nutrition-related behaviour is a reflection of nutrition knowledge, then this should be explicitly stated and described as a limitation of the study. We have clarified this throughout the manuscript and table that this was knowledge and behavior. (Page 9-lines 21-23).

Minor comments:

Abstract

- Report the correlations in the Results section of the abstract.

We have made this correction. (Page 3-Lines 15 and 16).

Methods

- Page 5, Lines 19-21 - If possible, include the UNC Review Board study number for this study.

We have made this correction. (Page 5-line 11).

- Page 5, Lines 24-26 - Were any statistical analyses conducted to assess potential differences between the schools, or were these differences assessed at face value?
No we did not look at potential differences between the schools in this study and was beyond the scope of this paper.

- Page 6, Line 55 - Reference the standard or original source of the BMI cut-offs/definitions that were used (e.g., World Health Organization).

We have clarified this in the text. (Page 7-lines 3 and 4).

- Page 7, Lines 38-41 - Please clarify the units of change for each outcome variable, such as average change in BMI percentile.

We have clarified this in the text. (Page 7-lines 19 and 20)

Discussion

- Page 9, Lines 7-14 - Since adiposity may be a better indicator of weight change in children than BMI percentile change, did you examine the association between adiposity and BMI change in this study? If the two variables are not significantly correlated, then that may be an additional salient discussion point. It would also further strengthen the claim made in Lines 36-38. For the purpose of this study we did not do this, however, in future studies we will address that in the analysis plan.

- Page 9, Lines 41-58 - Please clarify the direction of the correlation for both the children and parents, as this allows the reader to further conceptualize how children and parents may retain nutrition knowledge differently. For example, do parents retain knowledge for longer than their children?

We have clarified this in the text. (Page 9-line 20). We did not do additional analysis to examine if parents retained knowledge longer. It appears that children and parents were initially correlated, however, by the end of the study that gain was lost.

- Page 10, Lines 7-9 - Provide a reference for the statement "self-efficacy is one of the most difficult parameters to change, especially in children". We have provided a references as requested. (Page 10-Line 8).

- Page 10, Lines 43-44 - Clarify what impact self-reporting biases may have had on the final results (e.g., under-reporting may have under-estimated the associations). Thank you and we have made that correction. (Page 11-lines 6 and 7).

Table 1 and demographics - The "ethnicity" (Hispanic/non-Hispanic) category of the table, for both parents and children, does not differentiate whether the respondents were White or non-White Hispanic. Perhaps try collapsing this category with the Race column, providing a breakdown of these two subsets. We have made that correction as suggested in Table 1.
Rebecca Liu (Reviewer 2): Strengths

- Well-designed study
- Long-term follow-up study (follow-up up to 18 months)
- Large sample of parent-child dyads
- Low-income ethnically diverse sample of children and parents

Thank you for your feedback

Weaknesses

-not sure whether or not the authors were limited by word count, it would be recommended to use People First Language when referring to those living with obesity throughout the manuscript. http://www.obesityaction.org/weight-bias-and-stigma/people-first-language-for-obesity

Thank you for pointing this out and changes have been made throughout the manuscript to reflect person-first language. (Page 3-lines 4 and 20, Page 4-lines 4,6,11, and 23, Page 5-lines 8 and 9).

-The main title and running head title are slightly overstated re: highly correlated changes in adiposity.

We have made that correction in the title and running head.

The Pearson correlation coefficients for the control group were not provided so it is difficult to consider the title when we are unaware whether the 'highly correlated changes' are a result of the intervention or the control setting (usual care). Please provide Pearson correlation coefficients for the control group or a clear explanation for why it was not included, along with a less overly stated title. The analysis for this aim was only focused on the children and parents who received the intervention (intervention group). They were not compared to the control group.

-Curious to know about other similar studies (differences in income status/ethnic differences) and whether they found the same result (only changes to adiposity and no changes to weight status, health behaviors, nutrition, exercise, self-efficacy), what then helped to improve their WC, triceps and subscapular measures in the current study? Could you speculate based on the results found in other studies? Please include this in your discussion.

This was the first large study in a group of low-income ethnically diverse children and parents. We could not find similar studies in regards to the age and racial ethnic mix that found the same results. This appears to be a fairly new phenomena in that in subsequent research proposals we use adiposity and BMI percentile as primary outcomes.
*See also introduction line 26, Page 4 "Approaches found most effective have incorporated both behavioral and cognitive strategies with parental involvement"; how does this sentence relate to your study if no significant changes in correlation coefficients were found in behavioral and self-efficacy measures? Please reflect back to the background information that was provided in the introduction into your discussion. (role of ethnicity, role of income status that may influence the results and speculate why?) The introduction sets the stage for what is currently known and confirmed through meta-analysis and supported by Cochrane Reviews on childhood obesity. The large amount of those studies were conducted in non-Hispanic white middle income children and parents. This is one of the first large studies that examined child parent dyads who were low-income and ethnically diverse in rural settings.

-Qualitative results/findings/anecdotes were provided throughout the discussion (page 9 and 10). This is new information.

If the authors choose to include this in the discussion, I think it is important to consider the study as a mixed methods study and incorporate changes throughout the manuscript (methods, results, etc.) This was not a mixed methods study. This information was received during exit interviews conducted with parents and children in the intervention group after their data collection and time in the study was completed.

-The study was primarily made up of female participants, is this typical in dyad studies? Could the authors speculate whether this impacted the study results (in the discussion) or how this may only applicable to female parent dyads (7% of sample were male parents)? (maybe limitation section) The majority of the parents were female, however, the children were fairly equal. Approximately half of the parents were married, which leaves many running single parent households. Although, great point, we cannot speculate whether this impacted study results.

-What considerations were made in the current study's intervention that would cater to low-income, ethnically diverse families versus the interventions that were highlighted in the introduction specific for non-Hispanic and middle-income families? (include in methods or discussion) That is a good point and that information was included in the protocol paper in detail. The intervention was developed at a second grade literacy level and the children and parents were given hands on experience. It was not within the scope of this paper to review that detail again.

-Please reconsider grammar and sentence structure throughout the manuscript, especially in the the following sentences

line 31, pg 9 "This study adds to the science suggesting" suggest rewording to "adds to the literature" OR "adds to the subject area" but not science (too broad and vague). Thank you for the suggestion and that change has been made. (Page 9-line 17).

line 16, pg 10 " Many then went to play after school", 'many' what? We have made that correction and thank you. (Page 10-lines 17 and 18).

Please review entire manuscript for incomplete sentences.
We have done this and made corrections where appropriate.