Author’s response to reviews

Title: The role of cognitive stimulation at home in low-income preschoolers' nutrition, physical activity and Body Mass Index

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Author’s response to reviews:

Response to reviewers:

We wish to thank the reviewers for their thoughtful and thorough critiques of our manuscript. In editing the paper, we attended carefully to their helpful suggestions and believe the manuscript has been significantly strengthened as a result.

We have addressed reviewers concerns by each section of the paper and summarize changes below. We believed we have thoroughly addressed reviewers comments and suggestions.

Abstract:

Reviewer 2 suggested adding a series of details to the abstract. We have clarified that this is a secondary data analysis, as well as some main terms (e.g. provided a definition of Head Start) to facilitate comprehension for the reader. We provide some additional information on when and how data was collected. We provide responses to some of the other concerns more in depth in the methods section due to space constraints in the abstract. For example, questions on who collected specific data, covariates and description of weights are addressed in the methods section.
Background:
We have clarified in the introduction that body size refers to BMI. We have also changed this throughout the paper.

We have provided additional information about program Head Start.

Methods:
In the methods section, we clarify that we are conducting data analysis on an existing longitudinal dataset collected by the Office of Head Start (US government). We also refer the reader to literature where they can find ample information on how data was collected and how sampling was determined. Due to space considerations, we cannot provide enough information on these topics, which have been thoroughly described in available literature.

Reviewer 2 asked about whether our conversion of questions was from FACES to HOME-SF was warranted. The original FACES questions were drawn from the National Household Education Surveys Program, which had drawn items from the HOME instrument, and therefore there was equivalency for conversion and scoring. Possible limitations are discussed in the limitations section.

We provide a definition of cognitive stimulation and refer the reader to the table that has a list of items used to define this concept. We hope this clarifies the construct subsequently and facilitate its interpretation.

We provide justification from the literature for our cut points. Together with a clarified construct of cognitive stimulation, we believe it is clearer what the different levels mean.

We provide examples of the kinds of foods considered junk food and also clarified that consumption was rated on a scale of 0 to 5, but 5 did not indicate 5 times a week as the reviewer
suggested. The scale goes from 0, which indicates no consumption to 5 in increasing magnitude, and five indicates 3 to 4 times a day for the last week (Consumption ranged from 0=Child did not have said junk food in the past 7 days to 5=Child had said junk food 3 to 4 times in a day for the past week.)

We are limited in our measure of physical activity to the items that were available in the FACES dataset. While our measure is a gross measurement of physical activity, it had enough variability to differentiate amongst children. We discuss this limitation in our limitations section.

We changed normal weight to healthy weight, as suggested.

The reviewer requested we clarify what PRA16WT is. As described in the methods section, this is the name of the sampling weight we used to adjust for in our analysis. The senior author on this paper participated on a training session provided by the principal investigators of FACES to learn how to use adequate sampling weights with this longitudinal dataset. Sampling weights account for variations in the probabilities of selection as well as eligibility and cooperation rates among those selected. The Taylor series method to adjust variances for survey data is recommended for FACES. This ensures correct standard errors, variances and significance levels are calculated. We include the name of the sampling weight so that our analysis can be replicated if necessary.

We clarified covariates included in each model, longitudinal time points (baseline at program entry and outcomes in Kindergarten) and alpha level, which was set at 0.05.

Discussion:

We re-wrote paragraph 1 in page 10 to address reviewers’ concerns regarding lack of clarity.

We include more details on the type of parenting practices that are associated with children’s diet in the literature and that may be mediating our results.
We have clarified that the association of maternal education and junk food consumption was not a main aim of our study but discuss these results in the context of the larger literature. As an important covariate, we believe discussing these results is relevant in this paper.

We have softened our language on intervention to indicate the suggestive nature of our recommendations. We do not elaborate on the effectiveness of the interventions cited but provide references that can speak to their effectiveness. They are well-known National programs in the United States with a large body of literature associated to them. We do clarify that they mostly target high-risk, low-income children, such as those in our study.

The lack of association between BMI and the cognitive stimulation construct is discussed in the first paragraph of our discussion, including possible explanations for why this differs from findings in previous literature. We had these sentences in our original paper.

We deleted a sentence in the conclusions section in response to the reviewer’s concern that we might not have enough evidence to support this claim.

Tables:

Table 1 has been amended to state Race/Ethnicity as suggested and to avoid abbreviations.

We again thank the reviewers for their comments and believe our paper has been strengthened as a result.