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:

We wish to thank the reviewer for the clear 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 reviewer’s concerns by each section of the paper and summarize changes below:

1. Abstract

We revised the language in the conclusion to indicate that strategies to support parents “may” be considered as part of prevention and treatment efforts.

2. Introduction

We have clarified in the introduction that while previous work had examined the relationship between cognitive stimulation in the home and BMI, it had not explored how it relates to other proximal factors such as junk food consumption and physical activity. This paper contributes to the literature by examining these additional relationships. Furthermore, our paper focuses on children in low-income families, who have a higher incidence of obesity in the United States and which also provides a more nuanced analysis of previous work in this area.
3. Methods

• The reviewer inquired about whether data used are baseline (2006) and follow up spring 2008, spring 2009. This information is correct. Some children entered Kindergarten in 2008 and others in 2009.

• We have removed the information on sampling weights from the “participants” section, as requested by the reviewer, and added it into the analysis section.

• Table 1 reports cases of normal birthweight, excluding cases of very high birthweight (macrosomia). We have clarified this on the table.

• The predictor variable/ cognitive stimulation section specifies: “After matching, a total of 22 items were selected and re-coded to match the coding for the HOME-SF and summed to create a composite variable (Table 2).” We are uncertain whether the reviewer wants this information in the table as well. We have added a subscript to Table 2 that indicates that the composite was created by summing these variables.

• As per the suggestion of the reviewer, we are removing the mean (SD) of the individual items in Table 2 as they do not provide additional information for interpretation purposes.

• As per the reviewer’s suggestion, we have clarified in the methods section that information on healthy food consumption was not available in this dataset. This was also described in the limitations section.

• An article by Poti, Duffey & Popkin (2014) published in the American Journal of Clinical Nutrition identifies as association between high fast food consumption and lower intake of milk, diary and vegetables, and a higher intake of sugar sweetened beverages in a sample of US children. The article also cites work that has associated fast food consumption with greater availability of soda and chips in the home, and lower likelihood of being served vegetables or milk with home meals. We were limited in this analysis by data available from this dataset, and as described above, we did not have information on consumption of healthy foods. As a result, we are using the distribution of fast good consumption as a proxy for a range of eating habits.
This is addressed in our limitation section, and as stated above, also added to the methods section. Based on the work of Poti et al (2014) and related cited literature, we think there is evidence to proceed with our analysis.

- Our description of the junk food variable includes a summary of what was asked in the FACES survey and how we created the composite. The reviewer asked for more detail on the questions, and we are including an example here for further clarification:

  “During the past 7 days, how many times did [CHILD] drink Soda pop (for example, Coke, Pepsi, or Mountain Dew), sports drinks (for example, Gatorade), or fruit drinks that are not 100% fruit juice (for example, Kool-Aid, Sunny Delight, Hi-C, Fruitopia, or Fruitworks)?”

  Since some categories included more than one food item (e.g. cookies, cakes and brownies), we believe we might be underestimating and not overestimating consumption. Nonetheless, we are looking at categories of junk food and their consumption, and adding them up to create a composite that combines the reported intake of these distinct food groups.

- Our healthy weight category was created using the World Health Organization national standards for children ages 2 to 5, and does not include children with low birth weight.

Results

- The superscript “c” in table 4 was an error and it has been removed.

- The analysis with BMI-Z score were conducted and are reported in the results section. “Multiple logistic regression confirmed this lack of significance with effect sizes for cognitive stimulation that were not significant [F(12,36)=12.33, -.007, p=0.462] before and after controlling for demographic factors.”

- Data from all covariates has been included in the table and the table has been reformatted to include the 95% CI in the same column.
• We have revised the results section to specify that the positive results in the junk food consumption variable relate to children with moderate levels of cognitive stimulation. The result now reads: “a multinomial logistic regression, adjusted for socio-demographic factors, showed that children who received moderate cognitive stimulation at baseline (fall 2006) had a 1.5 increase (p<0.05) in the likelihood of consuming low amounts of junk food in the spring of 2008, compared to children residing in environments with low cognitive stimulation.” The sentence “this indicate that higher levels of cognitive stimulation are inversely associated with consumption of junk food” has been removed, as it was misleading.

• In the results narrative, we have added the negative results for the association between high levels of cognitive stimulation at home and low junk food consumption.

Discussion

• Based on the revisions described above, we have adjusted the discussion to specify that it is moderate levels of cognitive stimulation at home that is associated to low junk food consumption. The sentence now reads “Analysis of the cognitive stimulation composite variable showed that moderate levels of cognitive stimulation at home at preschool entry were associated with lower levels of junk food consumption.”

References

• An electronic link to Strauss and Knight was added as requested.