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Response to Letter to the Editor, “Assessing the Nutrition Literacy of Parents and its Relationship with Child Diet Quality: Methodological and statistical issues”

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Dear Editor

We appreciate the comments provided to us in the letter from [blinded for review], and we thank the editors for the opportunity to respond to the criticisms offered and expand discussion of our work.

First, the reader challenges the importance of the effect size reported in Table 3 which described the correlation between NLit-P and Healthy Eating Index (HEI). This correlation translates into a B coefficient of 0.51, and might seem a small effect. However, a single standard deviation increase in NLit-P (12.1% improvement) translates to a 6.2 point improvement in the HEI, and perhaps would have been helpful to report in the paper. This is not a large sample size (n=101 dyads), so the comment on p-value is less relevant.

Second, in response to the question regarding the clinical significance of the effect change in HEI, we should remind the reader that there was no intervention conducted to change the diet in this study, and accordingly, we have not made any statements regarding cause and effect. Importantly, HEI is not a clinical indicator, but rather a measurement of compliance with the US Dietary Guidelines. There are no established thresholds to describe HEI values, and the score is instead analyzed as a continuous variable (see Nansel, Lipsky, and Liu, 2016¹) or categorized into ranks of sample distribution (see Reedy et al, 2014²). However, applying the potential change noted above of a single standard deviation increase in NLit-P to the mean child HEI in our population (52.5) would theoretically increase HEI to 58.7, which corresponds to an increase from approximately the 50th percentile to approximately the 75th percentile of HEI reported in Guenther’s HEI-2010 validation study using the 2003–2004

NHANES dietary data³. Further, a 6.2 point improvement is somewhat comparable to the improvement seen in child HEI in a recent intervention where almonds were added to children's diets⁴, resulting in an increase from 53.7 ± 2.6 to 61.4 ± 2.2 . Thus, we maintain that the differences in HEI are meaningful, and we are hopeful that attention to nutrition literacy within the design of nutrition interventions will contribute to improvements in diet that translate to clinical effects.

Finally, one of the novelties of our analysis is that we use confirmatory factor analysis (CFA) to support both validity and reliability. As pointed out by the reader, CFA is used to support construct validity specifically, but it can also be used to get a very appropriate estimate of entire reliability (e.g. Gajewski et al, 2015⁵) thus addressing both accuracy and precision.

Sincerely,

Acknowledgments

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