Reviewer's report

Title: Parenting Stress: A Cross-Sectional Analysis of Associations with Childhood Obesity, TV Viewing, and Physical Activity

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Reviewer: Ketan Shankardass

Reviewer's report:

The authors explore cross-sectional associations among a relatively small number of parent-child dyads regarding parental distress, overweight/obesity phenotypes, and behavioural risk factors for obesity. The rationale is clear, and the role of parental stress as a driver of childhood obesity remains elusive; so the focus on behaviours that may be related to parental stress is important. A number of previously validated measures are utilized in the analysis, which also strengthens the validity of the work. The quality of writing is excellent.

- Discretionary Revisions (which are recommendations for improvement but which the author can choose to ignore)

1. Please consider clarifying the fifth sentence in the Statistical Analysis sub-section of the Methods section by stating that "Parental marital status and EDUCATIONAL ATTAINMENT were included in all models" (correction in BOLD). This then removes the need for the last sentence of the paragraph.

- Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1. There appears to be a word or two missing in the first sentence of the Measures - Stress sub-section of the Methods section.

2. Please clarify the acronyms, NASPE and AAP.

3. The Statistical Analysis sub-section describes that "married/living with a partner" was contrasted with "single" parents in the analysis; but there are other categories listed in Table 1 that should be listed here as well for clarity.

- Major Compulsory Revisions (which the author must respond to before a decision on publication can be reached)

1. The age range included in the study was small; only four years. However, this is a relatively dynamic developmental period for children. I suspect that TV watching and physical activity patterns change quite drastically across this period for some children. Why didn't the authors adjust their findings for age? Did they try to stratify their analysis into two age groups (e.g., 2-3, 4-5)? Even
with very small sample sizes, it might reveal very different point estimates worth discussing.

2. Given the cross-sectional nature of the study, and the very young age of children in the study, it is perhaps not surprising that there were associations between parental distress and associated energy-related activities in children (e.g., TV restriction and weekday physical activity of children); but that manifestations on overweight and obesity were not apparent. A life course perspective could be used to speculate that the lack of association with overweight/obesity in children reflects the need to examine these associations over a longer time window. This may be supported in the Kock et al study described by the authors in the Background section; where effects of parental stress on obesity in children are stronger in the longitudinal analysis compared to the cross-sectional analysis. Perhaps the authors should use their Discussion section to raise the need for longitudinal analyses to follow-up on the study. They may also want to temper their stated conclusion (including in the abstract) that parental stress is not likely associated with increased risk of obesity in children.

3. The conceptual framework of the study should be clarified. For example, it's not clear whether the first two sentences of the second paragraph of the Background apply to parents or children in this study; specifically, effects of stress on metabolism, appetite and activity. More on the third sentence in the second paragraph in the Background would be helpful for the reader, too. How and why do the authors believe that parenting stress is associated with TV restriction and TV watching; and with physical activity? And what would the associated impacts on over-weight/obesity be? (This may be a good place to introduce the idea of a life-course perspective... habits developed in early life around these behaviours could impact weight gain/loss across the life course.)

4. Please clarify how NASPE and AAP categories/cutoff's utilized in this study are relevant to the outcome of childhood obesity.

5. Please be clearer about the age ranges covered in the Koch et al and Parks et al studies being compared in the Discussion. Is it appropriate to directly findings of these studies?

6. While the authors raise some plausible limitations in their Discussion section, they don't follow-up through to discuss the specific impact of these limitations on their findings (2nd and 3rd ones, in particular). Please briefly extend discussion on the relevance of limitations.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**
I declare that I have no competing interests.