Reviewer’s report

Title: The effects of individual, family and environmental factors on physical activity levels in children: a cross-sectional study

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Reviewer: Amy Lampard

Reviewer’s report:

This manuscript seeks to identify the individual, family and environmental factors associated with child physical activity, using data collected in a population-based sample. This research fits well within the current paradigm recognizing the potential importance of a child’s contextual environment in supporting physical activity. The paper is well-written. The introduction clearly outlines the rationale for the current study. The sampling methods are appropriate for the research question. I have the following major and minor recommendations for revision.

Major comments:

1. It is unfortunate that the dependent variable in analyses was based on the parent-reported PA measure of “days of hard exercise of 20 minutes” as this does not map onto the WHO PA guidelines – 60 minutes of MVPA per day. The authors need to make this limitation more explicit. The authors also need to justify the use of this measure of child PA, particularly the classification of children into low, medium and high PA groups. Some evidence of the reliability and validity of this approach must be provided. Showing that this measure and this classification is valid is central to the whole study and validity of results.

2. In the Methods, more details need to be provided regarding measurement in general. This is particularly the case for parenting style, screen time, and all environmental-level variables. Please provide information about the reliability and validity of these measures.

Other minor comments:

Methods:

3. Line 101. How was the decision to classify total screen time into <2 hours and > 2 hours made? I assume this was based on a specific screen time recommendation, for example, that by the American Pediatric Association, so please provide a reference here.

4. Line 123 – please say “alpha” or p, not just “values” when stating the significance level.

Results

5. Line 161 – please make it clear that after this point, results are from multivariate models (e.g., in headings)

6. The results are presented in atypical fashion for the multivariate regression.
Please structure the results section so that it presents the results as, model 1 (individual), then model 2 (family added; interpret family estimates) and then model three (environmental added; interpret environmental estimates). When using block entry, it is not typical, for example, to compare individual-level estimates from model 1 and model 2. That is not the point of this type of analysis, which is more often used to answer questions like, “what do family level factors contribute after individual-level factors are accounted for…?”

Discussion

7. Line 232 – as this previous finding is about the prevalence of screen time, it does not, in fact, “support” the current result regarding the relationship between screen time and PA. Please revise the wording.

8. Line 234 – consider providing a reference for the displacement theory

9. Line 235 to 237 – please tone down this statement. These cross-sectional results are only suggestive.

10. The family and environmental-level factors included in this study are not a comprehensive list of all possible relevant factors. Please include this as a limitation in the discussion.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests