Reviewer’s report

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

Version: 1 Date: 14 December 2013

Reviewer: April Oh

Reviewer’s report:

1) Background: More of a literature review justifying the multilevel approach would strengthen the manuscript. In addition a theoretical framework would guide the authors hypotheses and selection of the domains within their multilevel framework. This inclusion would strengthen the paper’s scientific merit. By including a framework and stronger conceptualization of the constructs/measures could be specified in the paper.

2) Discussion: The authors make conclusions and recommendations beyond the reach of what their data and results describe. This was a cross-sectional study of 9 year olds. Thus, making broader generalizations of findings to “children” seems beyond the scope of what the data results indicate. “Children” can encompass ages 5-11 and if including adolescent children, up to the age of 18. Thus, making statements about interventions for children are beyond the scope. The recommendations regarding interventions should be revised substantially. Given the limitations in measurement (especially with parent report physical activity), can these intervention suggestions be made? The authors should discuss potential research directions. It appears that one of the strengths of this study is inclusion of multiple domains and factors within them. Some discussion regarding these factors within the broader context of the environments in which the 9 year olds are embedded would be important. The authors should discuss their findings particularly the key findings stated 235-237 within the context of the extant literature. How are findings similar? How do they contrast?

3) Line 226 – the authors discuss the BMI and PA literature but then in this paper, uses weight status in the model. Why weight status an not BMI if measured BMI was available?

4) Methods: It is not clear whether the data were collected in a survey or in person interview. Authors need to state the time period of data collection. Were data all collected during the school year? The audience of the journal is an international one. Information regarding the nature of elementary physical education or recess time would be important for the reader to know as this could also impact the outcome variable. What is the rationale for including child’s favorite hobby in the model? More detail on how “active” or “inactive” were coded is needed to interpret the results. It is unclear why this variable is important to the model since it appears the authors don’t have information on how often the child participates in this hobby or if it occurred during the 14 day recall for exercise. The way the description reads now it is possible for a child to have reading as a
hobby and be active in this hobby, but how is this associated with PA behavior? Were any of the variables missing data? How was this treated? The reference category needs to be stated in the OR reporting of results.

5) The variables listed as family variables are caregiver factors, not family variables. Please revisit and/or justify this conceptualization and the measures used.

- Minor Essential Revisions

1) Include the exclusion criteria for the study in the results. Did you include all 9 year olds, were some excluded with disabilities or other health problems that may limit their physical activity?

2) In the measures, the authors must specify that these are parent reported measures.

3) Were there any data captured on the amount of time the child lived with the caregiver? How was this defined? Was this included in the inclusion/exclusion criteria? What if the child’s primary caregiver was another family member? (aunt, uncle, grandmother)

4) Occasionally “PCG” is used. Please state for the reader what this stands for.

5) Line 162-163: Is this result in combination of the variables?

6) Table 1 needs a footnote to explain what “Favourite” means and how this was scored.

7) Table 2 has typos with extra “1” and missing “0”s before decimals.

8) Tables should be consistent in formatting of decimals.

9) The tables need to state the reference category for the outcome variables. Is it Moderate versus Non active?

10) The tables should be able to stand on their own. More explanatory text with footnotes for the variables are needed. Also, note the significant values.

11) Line 229 – This sentence should be revised. It gives the impression the recommendation is that children should watch 2 hours.

12) Line 236 – The recommendation to improve facilities is out of place, given the quality of facilities were not addressed in the study.

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'