Reviewer’s report

Title: A cross-sectional examination of the association between school policies and the built environment surrounding a school on overweight and obesity among grade 1 to 4 students

Version: 2 Date: 2 May 2013

Reviewer: Flo Harrison

Reviewer’s report:

Thank you for the updated version of your manuscript. Some useful information has been added. However, some of this information, along with responses to some of my original comments raise further issues.

- Major Compulsory Revisions

I agree with the author that children’s PA preferences are an interesting and understudied area especially as mediators/moderators of relationships between school level variables and anthropometric/PA outcomes. However, I am not convinced that their inclusion in these analyses is appropriate.

I think it would be better to investigate these factors separately, looking at their association with PA outcomes. Currently all PA preference measures are added together in a single model (why are they not included in stage two of the analysis?), which also includes measures of PA and sedentary behaviour, so we don’t really learn much about how they are operating. It would be useful to investigate how PA preferences are related to PA and the success of PA policies. E.g. do policies to promote PA in schools only work among children with a preference for active play? Or, are children more likely to express a preference for active play at schools with more supportive PA policies?

Additionally, I feel the modelling strategy used needs to be revised. The first step seems to be a little conservative. I believe that it is possible for level 2 variables to be significantly associated with the outcome, even if there is no significant level 2 variance in the null model, depending on the distribution of these variables. Physical activity is included as a co-variate in stage 3 of the modelling, which seems to be an over-adjustment. I would expect school PA policies (and, indeed child PA preferences) to impact overweight/obesity via their influence on physical activity behaviours.

I don’t quite understand the copyright issues around including a table with information directly relevant to this analysis. If you do not wish to duplicate the descriptive statistics table presented in your IJBNPA paper (Table 2), then something similar to Table 3 in that paper, with model results, which would presumably be unique to this analysis, would be really helpful. While you have provided information on the elements of the HSP included in this analysis in the text, a table would be clearer to read, and also set out how each variable was
handled in the analysis (e.g. outcome /reference categories used). Given that these are the main explanatory variables being tested in these analysis I do not feel it is appropriate that the reader should have to go to another paper to see them.

Ultimately if the PA preference variables are removed from the paper, I am not sure that it contributes much to the literature, especially given that several similar papers have been published using the same dataset. Re-working these analyses to examine associations between PA policy, child PA preference and PA/weight status would potentially produce more useful/interesting findings, but would, I think, need to be dealt with as a separate submission.

**Level of interest:** An article of limited interest

**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