Reviewer’s report

Title: A repeated measurement study investigating the impact of school outdoor environment upon physical activity across ages and seasons in Swedish second, fifth and eighth grade pupils

Version: Date: 15 May 2014

Reviewer: Jasper Schipperijn

Reviewer’s report:

Major Compulsory Revisions

The ‘why’ of the aim of this paper is not very clear. What exactly is ‘missing’ from existing studies (i.e. not known), and what does this study add to the field?

Interesting data material, but unclear what this paper adds to the field.

The presented findings seem a bit trivial, and the more interesting stuff is not shown. The analyses do not seem appropriate, or potentially, there appropriateness has not well been explained. Seeing that the theoretical explaining factors of this type of behavior are well described with an ecological model, a multilevel model with students nested in schools would seem appropriate. With school-level factors such as schoolyard size included at the school level, and individual correlates at the individual level.

More specific, there are a series of issues with the methods, results and conclusion that need to be addressed.

Methods

How was the children’s actual use of schoolyard areas mapped in practice?

Which criteria were used to identify accelerometer non-wear?

Were school and/or classes included as a level in the analyses? A multilevel model with multiple measurements nested in students, nested in schools would seem appropriate.

Were analyses adjusted for personal factors?

LVPA, MVPA and VPA are not independent from each other; why were all 3 levels analyzed? The method section only describes MVPA.

Were the accelerometers worn on the outside of clothing to be able to capture LUX? If so, how could that have affected the measurements? It seems that accelerometers on top of thick winter clothing would be less accurate in registering body movements.

Results

Results mentioned in line 271-280 are not presented in a table? They seem important.
Conclusions
The fact that there is a difference between the schools cannot necessarily be explained by the difference in how the schoolyards look.
Based on this study it cannot be concluded that extended ball areas with ‘art’ grass (I assume this refers to artificial grass?) and green play areas enhance PA.
Boys more active than girls is not new, nor is decline with age, nor is the fact that outdoor time is a good predictor for MVPA.

Minor Essential Revisions
Language needs editing, there are many mistakes

Discretionary Revisions
Useful additions to the reference list & background

Level of interest: An article of limited interest
Quality of written English: Needs some language corrections before being published
Statistical review: Yes, and I have assessed the statistics in my report.
Declaration of competing interests:
I declare that I have no competing interests