Reviewer's report

Title: Association between physical activities and school records in Korean adolescent students

Version: 5 Date: 30 January 2012

Reviewer: Nancy Brener

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Major revisions:
1) Background: I am still confused about why the authors state that “there is no epidemiological evidence that indicates whether there is an association between PA and the academic performance of students.” In the Discussion, the authors state, “The results of our epidemiological study indicate that…”, which demonstrates that they classify their analysis as an epidemiological study. It is not clear how this study differs from the others cited in the Background—why wouldn’t those be considered epidemiological studies? Those appear to have the same methods as the current study.

2) Conclusions: The implications added are weak at best, and do not really describe how schools, health care providers, and others can act upon the results of this study.

Minor revisions:
1) Abstract: The results could be stated more clearly; as written, it is difficult to understand what was found. For example, instead of “In boys participating in vigorous PA twice a week, the odds ratio (OR) of academic performance was 1.247…” it would be clearer to say something like: “Compared to boys who did not engage in vigorous PA, those who participated in vigorous PA twice a week had greater odds of average or above average academic performance (OR=1.247).”

2) Methods: The authors state, “The students were assigned unique identification (ID) numbers by their classroom teachers…” but in response to my question about the anonymity, the authors describe a method in which students randomly drew ID numbers. This information should be provided in the manuscript itself to more accurately describe how the survey was able to be anonymous.

3) Results: The results simply repeat what is in Table 2. It would be more useful to the reader to describe the results in that table, or at least use language similar to what I suggest for the Abstract (#1 above).

4) Methods/Results: The authors’ response that “unknown” education level means the level was elementary school or lower because the parents would hide that fact from their children is not convincing. Even children whose parents have higher levels of education might not know what those levels are. I suggest deleting those with “unknown” as a response to see if the results change. If the results do not change, that is an argument for keeping those records in the
analysis. Otherwise, those records should be omitted from that analysis.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**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.