Reviewer’s report

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

Version: 1 Date: 6 October 2011

Reviewer: Nancy Brener

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- Major Compulsory Revisions

1) The Background needs to be expanded and restructured. As written, it does not provide sufficient rationale for conducting the study. One way to improve its structure might be to start out by saying PA has some known benefits (and list them), and there is some evidence that it is beneficial for academic achievement (describe other studies that have looked at this relationship), but these studies have the following limitations (and explain those). Some examples of studies that have examined the relationship between PA and academic achievement include:


2) Methods: Is the term “school record” well understood among Korean students? To me, it is a vague term that might include not only academic achievement but also behavioral conduct in school. These constructs might not have the same association with PA.

3) Methods: Please clarify whether the data analysis accounted for the complex sample design used in the study. If it did not, the analyses would need to be re-run.

4) Discussion: The focus on brain and memory function is too narrow. What other aspects of PA might affect “school records” (e.g. attention, alertness)?

5) Conclusions: Please describe the implications of this study for schools, health care providers, etc.

- Minor Essential Revisions

1) In the Abstract Background and in the Background, the author notes that “there is no epidemiological evidence in clinical practice.” The use of the term “clinical practice” is confusing here. To me, “clinical practice” is what happens in the offices of health care providers. Please use a different term.
2) In the Abstract, the Results are much too detailed, and the Conclusions read more like the Results should read. Please revise the Results to provide more of a summary of what the analyses found, and revise the Conclusions to describe the implications of the findings.

3) Also in the Abstract, the direction of the “school records” variable is not clear. A reader might assume that odds ratios > 1 indicate that more vigorous activity is associated with better school records, but the author should note this explicitly and not leave it to the reader to assume.

4) Background: Did references 11 and 12 really indicate that “regular PA will improve the school achievements and records of adolescent students?” Or did these studies simply show an association between the two? Please clarify.

5) Methods: Please clarify how the surveys were anonymous if teachers assigned unique identification numbers to the students. How could students be confident that these numbers could not be linked to their names?

6) Methods: Please clarify how response option “unknown” was treated for the parents’ education level. Were students with this response simply excluded from the analysis?

- Discretionary Revisions

1) The authors should consider an additional analysis that preserves the levels of response for the school records variable. It seems overly crude to dichotomize that variable into “below average” vs. “average or above.” To simplify the analysis, the PA variables could be dichotomized instead to see if the different levels of school records are differentially associated with PA. For an example, of a similar analysis, see


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

**Quality of written English:** Not suitable for publication unless extensively edited

**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.