Reviewer’s report

Title: The subject-dependent, cumulative, and recency association of aerobic fitness with academic performance in Taiwanese junior high school students

Version: 0 Date: 13 Oct 2018

Reviewer: Jackeline Lobato

Reviewer’s report:

This is an interesting manuscript but I have identified some elements that need either clarification or adjustment. I suggest a revision on the text to make it clear.

Background:

- I suggest an update in your literature review. There are some new literature about this subject (2018), that can be in your manuscript, specially this systematic review: How does academic achievement relate to cardiorespiratory fitness, self-reported physical activity and objectively reported physical activity: a systematic review in children and adolescents aged 6-18 years. Marques A, Santos DA, Hillman CH, Sardinha LB. Br J Sports Med. 2018 Aug;52(16):1039.

- The objective presented was "to examine the association between changes over a three year period in aerobic fitness and multiple measures of academic achievement at the end of the period" (page 4, lines 111 - 113). I could not see this objective being reached in this manuscript. There are some statistical methods do take into account changes over a period. The authors did not use this.

Methods:

- The section "outcomes measures" (page 6, line 146) presents information about all variables. Academic achievement is the outcome measure. Aerobic fitness is the independent variable. Others variables are covariates.

- There is no information about how the covariates were measured.

- Explain why you chose 25% as "highly-fit". Is there a reference?

- I could not understand the methods of "cumulative effect". Need more explanation.

- There is a longitudinal data but the authors did not used the appropriated statistical approach to make the analyses stronger.
Results:

- I suggest writing again to make this section more informative. The authors need to interpret the principal results.

Discussion:

- I suggest including some new literature.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

No

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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