Author's response to reviews

Title: Associations of pubertal stage and body mass index with cardiometabolic risk in Hong Kong Chinese children: a cross-sectional study

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Author's response to reviews: see over
Reviewer’s report

Title: Associations of pubertal stage and body mass index with cardiometabolic risk in Hong Kong Chinese children: a cross-sectional study

Version: 5

Date: 22 April 2015

Reviewer: Ulla Sovio

Reviewer's report: Minor Essential Revisions

The paper has improved considerably as a result of revision. I would like to suggest a couple of further amendments:

The authors have now clarified in their response to the reviewers that they did not take into account the hierarchical nature of the data (classes nested in schools, schools nested in districts). This should be clearly stated and justified in the text. Hierarchical multiple regression analyses they have performed do not then refer to the hierarchy in the data but hierarchy in the modelling process. This may be confusing to the reader, especially to those who do not use SPSS and are not aware of this terminology (see http://www.theanalysisfactor.com/confusing-statistical-term-4-hierarchical-regression-vs-hierarchical-and http://www.ucdenver.edu/academics/colleges/nursing/Documents/PDF/HierarchicalRegressionHowTo). If hierarchical regression here simply means that “some variables take precedence in hierarchy over others, based on the order in which you enter them into the model”, then the authors should stop using the term “hierarchical models”, p. 13 line 219, and replace this by “regressions” or “hierarchical regressions”.

Response: Thank you for your suggestions. We have added a paragraph in the statistical analysis part to clarify our analysis approach in consideration of the hierarchical nature of the data. Also, we have replaced “hierarchical models” by “hierarchical regressions” accordingly to avoid confusion.

The presentation of a result with a p-value of 0.051 is problematic. Although the null hypothesis cannot be rejected using the threshold p=0.05, the authors could
still write up their results focusing on the effect size rather than the p-value. Preferably, confidence intervals should be used instead of p-values wherever possible. In all four reported models, the inclusion of interaction increased the variance explained by an estimated 0.5% to 0.8%, but possibly due to limited statistical power (<80%) this increase was not statistically significant for the cardiometabolic risk score beta in girls (0.5%, p=0.051).

Response:
We totally agree with your point that a statistically insignificant result does not imply a nil effect. We have added 95% confidence interval for the variance explained and revised the description of the results with focus on effect size (variance explained).

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

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.