Reviewer’s report

Title: Effective nationwide school-based participatory extramural program on adolescent body mass index, health knowledge and behaviors

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Reviewer: Julie M. Metos

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Review: BMC Pediatrics

Effective nationwide school-base participatory extramural program on adolescent body mass index, health knowledge and behaviors.

Overall, this is an important paper to publish because it evaluates a potentially cost-effective obesity prevention program for adolescents. The use of Health Corps is innovative and allows for a population-based approach that reaches all adolescents regardless of weight status. Given that the focus of the program is not specifically weight loss, it is impressive that significance in BMI z-score reduction was detected, and this is somewhat encouraging, despite it being self-reported and of questionable clinical significance. Further, it is important to publish such findings to establish that programs with many overall health aims, while important, may not result in dramatic changes in biology such as weight, over a short time period such as a year. The methods of the study are solid for a school-based intervention in real-time, and the conclusions are appropriate. The modest changes in knowledge, behavior and BMI z-score found in this study are typical and the authors raise good questions about how the field can move forward to effect substantial change. I have the following suggestions:

1. Line 7: Indent
2. Line 6-12: This sentence needs reworking. Perhaps break into 2 sentences and address other health status issues besides mortality that are more immediate for adolescents in the first sentence.
3. Page 12-line 31. In the methods, one-two sentences on BMIz-score and why you used it.
4. Page 13, line 37-39. Address that there were no changes in the overall percentages in the Discussion. What's your interpretation of this?
5. Page 15, lines 23-26. It seems like an overstatement, since knowledge scores increased by 1 point overall. Yes, they increased, but is 1 point relevant considering the time and energy put into the program?
6. Page 15, lines 33-39: I am not sure what your point is here. Needs re-wording. Like the following connection of mental resilience in the context of obesity prevention and the construct of GRIT, but not sure about your connection with the Dietary Guidelines.

7. Like your suggestions for future implementation that takes into account factors that moderate treatment effects. Also like connection to school-district wellness policies.

8. I understand the limitations in collecting heights and weights. Can you add a reference that supports the accuracy of adolescent weight reporting?

9. Any further thought on why you and Planet Health researchers find differences in girls and not boys? Patterns of growth in adolescence that vary by sex, social pressure, readiness to change, more/less receptive to program content?

10. Page 18, lines 14-17: This is the first time that academic and other challenge in urban inner city high schools has come up. Suggest addressing it in Background or Discussion for context.

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

Yes

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

Yes

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:

Acceptable

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