Reviewer’s report

Title: Resting heart rate: its correlations and potential for screening metabolic dysfunctions in youth

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Reviewer: Katrina D DuBose

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Title: Resting heart rate: its correlations and potential for screening metabolic dysfunctions in youth

The authors did a good job addressing most of the comments raised by the reviewers. There are just a few more items to consider before publication.

Minor Essential Revisions

1. short title: add the work resting to high heart rate. As that is what is really measured not exercising heart rate.

Abstract

2. Page 2 abstract – conclusion: add resting before heart rate

Background

3. Page 3 2nd paragraph last sentence. This sentence is awkward; especially “been less investigated”. Suggest re-wording.

4. Page 4, purpose. Re-move “and to identify its correlation in pediatric populations… this is not needed as the added text above covers it.

Methods

5. Page 4 inclusion criteria: self-report of health. It would be more descriptive if the diseases that would exclude them would be given. Did they have to be free from asthma, Types 2 Diabetes, Type 1 diabetes, known cardiovascular disease, ADHD? They could have allergies and this is chronic, but may not exclude them from participating in the study.

6. Page 5: Did the children give written assent? Not sure if this is done outside of the United State or not. If they did include that after talking about consent from the parents/legal guardian.

7. Page 7. Potential Confounders. Add VO2max as confounder that was included in the analysis (see table 2). I’m still not sure why VO2max was not a confounder for the analysis in table 3, as aerobic fitness level has been shown to be inversely related to HDL and positively related to TC, LDL, triglycerides, and glucose levels.
Results
8. Page 9 2nd paragraph, 2nd sentence. Add positively before “…related to triglycerides, TC and glucose values.”

9. 3rd paragraph, ROC curve. For HDL, wouldn’t you be more concerned about screening for low HDL instead of high HDL values? All other ROC analysis was reported to investigate factors related to CDV risk not protection and high HDL would be protective.

Discussion
10. Page 10 1st sentence: add higher before RHR. Remove (linear regression model [Table2]). Not needed in the discussion.


12. Page 11. You did ask a question about sports participation and correlation analysis found an inverse relationship with aerobic fitness, but the relationship did not exist after controlling for potential confounders. But no evidence is given that sports participation was positively related to aerobic fitness (this could be done). Sports participation is one factor related to aerobic fitness, but not the only one there is also genetic factors that need to be considered, so this statement that sports in a round about way is related to RHR and aerobic fitness is not correct.

13. Page 14 2nd paragraph. Remove Freitas and insert change Junior to Júnior. Specify if the relationships they reported are positive or negative.

Conclusion
14. The results did not indicate that high RHR can be used to screen for alterations in lipid metabolism; only triglycerides were related. The conclusion statement is too broad and not supported by the results.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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