

Peer Review File

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Reviewer Comments

This manuscript entitled "The effect and safety of high-intensity interval training in the treatment of adolescent obesity: a meta-analysis" aimed to perform a meta-analysis to quantitatively evaluate the effects and safety of HIIT in the treatment of adolescent obesity, to provide a theoretical basis for the treatment of adolescent obesity.

The manuscript is very interesting. However, some issues should be addressed by the authors.

Comment 1: Why does the authors did not register the review in the PROSPERO?

Reply: Thank you for your kind suggestions, we did not pre-registered the study protocol in PROSPERO as you kindly considered, we have admitted this limitation in the revised discussion section.

INTRODUCTION

Comment 2: Some recent articles should be cited to improve the rationally.

Reply: Thank you for your kind suggestions, we have read and update recent reports to justify the necessity of our study, please see the revised introduction part.

METHODS

Comment 3: I think you miss several important article because you have used just some keywords for HIIT.

Please, find below an example from a search strategy capture from other article:
("High-intensity training"[Title/Abstract] OR "Highintensity interval training"[Title/Abstract] OR "highintensity interval training"[MeSH Terms] OR "high intensity intermittent training"[Title/Abstract] OR "Repeated sprint training"[Title/Abstract] OR "interval training"[Title/Abstract] OR "intermittent training"[Title/Abstract] OR "high intensity sprint"[Title/Abstract] OR

“aerobic interval training”[Title/Abstract] OR “Highintensity interval training”[Title/Abstract] OR “highintensity interval exercise”[Title/Abstract] OR “highintensity interval exercise”[Title/Abstract] OR “highintensity intermittent exercise”[Title/Abstract] OR “highintensity intermittent exercise”[Title/Abstract] OR “high intensity intermittent training”[Title/Abstract] OR “high intensity intermittent training”[Title/Abstract] OR “HIIE”[Title/Abstract] OR “HIIT”[Title/Abstract])

Please, run again your search strategy with these new keyword to check the amount. If necessary, include new article if necessary.

Reply: Thank you for your kind suggestions, we have revised and re-searched the related studies as you kind suggested, please see the revised methods and results section.

Comment 4: The same for the block regarding the age:
(“adolescent”[MeSH Terms] OR “minors”[MeSH Terms] OR “adolescent”[Title/Abstract] OR “minors”[Title/Abstract] OR “Youth”[Title/Abstract] OR “juvenile”[Title/Abstract] OR “teen”[Title/Abstract] OR “teenager”[Title/Abstract] OR “Childhood”[Title/Abstract] OR “adolescence”[Title/Abstract] OR “schoolchild”[Title/Abstract] OR “Schoolchildren”[Title/Abstract] OR “young”[Title/Abstract])

This example is from the following article which may help you:

<https://tp.amegroups.com/article/view/60947/pdf>

Reply: Thank you for your kind suggestions, we have revised the search strategy accordingly, besides, we have read and cited this study(Ref 9) in the revised manuscript.

Comment 5: Line 79: "obese adolescents (6-18 years old) were included". This phrase is wrong. WHO determines that adolescent is from 10 years old to 19. This is very serious, as all results depend from this inclusion criteria.

Reply: Thank you for your kind consideration, the age of adolescents may vary between different countries, the age variations details are presented in Table 1. As you considered, the WHO determines that adolescent is from 10 years old to 19, we have included this for discussion, please see the revised limitations section.

Comment 6: Level of quality and risk of bias were not check? Why not?

Reply: Thank you for your kind consideration, we adopted Cochrane's risk of bias assessment tool for the quality evaluation of included RCTs, and conducted the bias risk assessment on the random sequence generation, allocation concealment, blinding of participants and personnel, blinding of outcome assessment, incomplete outcome data, selective reporting and other biases, each item was rated as "high risk, low risk, and unclear" based on related criteria. Please see the revised methods and results section.

Comment 7: How was the Methodological Quality and Data Synthesis? It was any Training of the Reviewers? How many reviewers perform the analysis?

Reply: Thank you for your kind suggestions, we have provided more information about the data collection and analysis, please see the revised method section.

REFERENCES

Comment 8: Some recent articles from could be cited in the introduction and discussion sections.

I suggest 3 below:

Weston KS, Wisløff U, Coombes JS. High-intensity interval training in patients with lifestyle-induced cardiometabolic disease: a systematic review and meta-analysis. *Br J Sports Med* 2014;48:1227-34.

Narrative review of the influence of high-intensity interval training on adolescents' bone health: commentary and perspectives. *Transl Pediatr* 2021;10(1):160-164. doi: 10.21037/tp-20-166

<https://tp.amegroups.com/article/view/60947/pdf>

Farooq A, Martin A, Janssen X, et al. Longitudinal changes in moderate-to-vigorous-intensity physical activity in children and adolescents: A systematic review and meta-analysis. *Obes Rev* 2020;21:e12953

Reply: Thank you for your kind suggestions, we have read and cited those three reports(Ref 9, 26,30,) for discussion, please see the revised manuscript.

