Reviewer’s report

Title: Validity of simplified, calibration-less exercise intensity measurement using resting heart rate during sleep: A method-comparison study with respiratory gas analysis

Version: 0 Date: 07 Jun 2019

Reviewer: Lucas Helal

Reviewer's report:

Dear authors,

It was a pleasure to take a time and read your manuscript carefully. Although interesting, I didn't think the research question with innovation and a suitable method to be published in the BMC Sports Science, Medicine and Rehabilitation journal in this current version. I will leave few comments below mainly in terms of methods. Anyways, I will be more than glad to appraise your manuscript again if I will have the chance and go more deep on my recommendations. Thank you.

# Language: some grammatical terms needs to be improved. For example: "lying position" is not a standard term. In that case, supine position would be preferable. There are a lot of terms you repeated several times making the wording hard to follow. Please forward the manuscript for a professional proof-reading translator. It would improve the uptake of the information for readers and also ease the job of the editor and reviewers.

# Trial registration: The registration is more than welcome. Even not being a randomized controlled trial, I congratulate you for registering the study. However, please remove the word "Trial" once it induces the reader to think it is an RCT.

# Title and all of the reporting: several terms are lacking in terms of reporting to improve the transparency of your paper. Please use the GRAAS Reporting Guideline for Accuracy Studies (J Clin Epidemiol. 2011;64(1):96-106 PMID: 21130355), that can be found in the EQUATOR Network (www.equator-network.org) website to improve the transparency of your reporting.

# Sample size: how did you calculate your sample size? I'm very concerned with this very low sample size and a Bland-Altman plot. A sample size calculation for a Bland-Altman plot is today well disseminated (https://www.ncbi.nlm.nih.gov/pubmed/27838682). This is a thing you as researchers should think about how to solve or at least on how to acknowledge in your discussion. To collect more data could be a deviation from the protocol and then not doable.

# "Pseudorandom order": what does that mean?

# Blinding and allocation concealment: is there any type of blinding and allocation concealment? If yes, please state YES or NO.
Characteristics of participants and inclusion/exclusion criteria: those informations are poorly reported. You need a Table 1 in which you state all relevant characteristics of participants and, for the eligibility criteria, you should state details that would allow external readers to repeat your study. For example: "participants without diseases" is not sufficient. What diseases?

Data sharing statement: very welcome you are willing to share the data with the authors. However, the details are poorly related. Please follow the ICMJE 2017 Statement for Data Sharing in order to give to external authors the necessary details in terms of your data-sharing policy.

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.

No

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

No

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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If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I don't have any religious, cultural, personal or financial competing interests related to this the review to declare.

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