Author's response to reviews

Title: PAHA Study: Psychological Active and Healthy Ageing. Psychological well-being, proactive attitude and happiness effects of whole-body vibration vs. multi-component training in aged women: study protocol for a randomized controlled trial.

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Author's response to reviews: see over
PAHA STUDY: PSYCHOLOGICAL ACTIVE AND HEALTHY AGEING. PSYCHOLOGICAL WELL BEING, PROACTIVE ATTITUDE AND HAPPINESS EFFECTS OF WHOLE-BODY VIBRATION VS. MULTI-COMPONENT TRAINING IN AGED WOMEN: STUDY PROTOCOL FOR A RANDOMIZED CONTROLLED TRIAL.

POINT-BY POINT RESPONSE TO REVIEWER’S COMMENTS

We wish to thank the editor and the reviewer for their appreciation of the study and the fruitful comments. A response to their comments is provided below and has been included in the new version of manuscript. Changes in the manuscript have been marked in red.

**Major Compulsory Revisions**

1. Abstract Background section could use a bit more of a set up of the specific research question.
   
   **RESPONSE:** Major information about the specific research question have been added in abstract background section.

2. Abstract methods section: it would help to include a bit more about the interventions. Also include the sample size.
   
   **RESPONSE:** Major information about the interventions and the sample size have been added in abstract methods section.

3. Abstract Discussion section: last sentence seems to have grammar issues and is also very general. It would help to make this concluding sentence more specific to the study.
   
   **RESPONSE:** The discussion section has been made a bit more specific to the study. The last sentence has been modified in order to correct grammar issues.

4. Background, 3rd paragraph: 1st sentence, it is not entirely clear what the following means in the context of this sentence: "...so several concurrently implemented regimes need to be performe."
   
   **RESPONSE:** this sentence has been removed.

5. Background, 4th paragraph: It’s not completely clear why these to specific studies (Kemmler et al & Kukujian et al) were chosen to highlight. What kind of interventions were involved, and how was it determined that these two studies had the "greatest improvements" relative to other studies in this area?
   
   **RESPONSE:** the paragraph has been modified.

6. Background, 4th paragraph: last sentence doesn't seem to quite fit here.
   
   **RESPONSE:** this sentence has been removed.
7. Background, 5th paragraph: I'm also not sure how this whole paragraph really fits into the discussion and set-up of this specific study.

RESPONSE: this paragraph has been modified in order to make it more understandable. It aims to underline the importance of social activities (such as group training activities), proactive attitude and positive emotions in affecting health outcomes.

8. Background: overall, while there is a lot of good information included, more is needed to really set up the study. For example, what is the prior evidence about WBV, what gaps does this study fill, why is it particularly of interest to look at the effects of WBV (vs. other exercise) on psychological outcomes and in this specific demographic group?

RESPONSE: major information to set up the study have been added in background section.

9. Hypotheses: 1st sentence, clarify whether this is in comparison to both other study groups (as is mentioned in the next sentence for the secondary outcomes).

RESPONSE: the sentence has been modified in order to clarify it.

10. Setting: Clarify why WBV and multicomponent exercise are conducted in 2 different settings. Particularly since the outcomes are psychological in nature, couldn't these different settings have a differential impact?

RESPONSE: yes were different settings, due to the nature of the exercise. Could not be standardized because each setting need different training instruments and method (vibratory vs high intensity walking).

11. Subjects section: provide some information about how participants are recruited or identified prior to the psychological screening.

RESPONSE: this section has been modified.

12. Measurements: clarify why the control group does not have T2 measures. If T2 measures will be used in statistical models, it would be problematic if they are only collected in 2 out of the 3 study groups.

RESPONSE: has been modified. All participant will be assessed at T1, T2, and T3

13. Conclusion section: This seemed very general to me and I wasn't sure how all of it really pertained specifically to this study. Consider revising this section to emphasize the specific contributions this study will make.

RESPONSE: a revision of conclusion section has been made in order to emphasize the specific contribution of the study on prevention programmes for ageing women.
Minor Essential Revisions.

1. Although most of the grammar is fine in this manuscript, there are minor grammatical errors throughout. I suggest a thorough review for grammatical issues.

RESPONSE: Thanks for the suggestion. A review for grammatical issues has been performed.

2. The manuscript also changes back and forth in verb tense (e.g., much of it in future or present tense, but some of the Interventions section is in past tense). I suggest a thorough review to make sure the tense is consistent throughout the paper.

RESPONSE: A review for verb tense issues has been performed.

3. Spell out WBV before first using the abbreviation in the abstract.

RESPONSE: Done.

4. Setting: 1st sentence seems like it should be split into 2 sentences.

RESPONSE: Done.

5. Subjects: spell out DMO before abbreviating.

RESPONSE: the paragraph has been modified. Change DMO (Spanish concept) for BMD-bone mineral density-. A bone mineral density test measures the density of minerals in the bones using a special scan. This information is used to estimate the strength of your bones.

6. Design section is very brief - consider combining with the hypotheses at the beginning of the methods section.

RESPONSE: Done.

7. Interventions section - 1st sentence can be removed since it is stated elsewhere.

RESPONSE: 1st sentence has been removed.

8. Interventions, 2nd paragraph may be better placed earlier, perhaps in the opensins section with hypothese and study design, since ethical approvals pertain to the whole study and not just the Interventions.

RESPONSE: 2nd paragraph has been placed in the Hypotheses/design section.

9. Statistical Analysis: 1st sentence, shouldn't this be "three" rather than "two" study groups?

RESPONSE: Yes. The sentence has been modified.