Reviewer's report

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.

Version: 1 Date: 4 February 2014

Reviewer: Kelli Allen

Reviewer's report:

This manuscript describes an interesting study that compares different physical activity interventions on psychological health variables among older adult women. Understanding which types of physical activity programs may be most effective is certainly an important research area. I have the following specific recommendations for strengthening and clarifying this manuscript:

Major Compulsory Revisions

1. Abstract Background section could use a bit more of a set up of the specific research question.
2. Abstract methods section: it would help to include a bit more about the interventions. Also include the sample size.
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.
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."
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?
6. Background, 4th paragraph: last sentence doesn't seem to quite fit here.
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.
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 particular interest to look at the effects of WBV (vs. other exercise) on psychological outcomes and in this specific demographic group?
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).
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?

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

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.

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.

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.

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.

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

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

5. Subjects: spell out DMO before abbreviating.

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

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

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

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

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

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.