Reviewer’s report

Title: Does attending an exercise class with a spouse improve long-term exercise adherence among people aged 65 years and older: A 6-month prospective follow-up study

Version: 1 Date: 12 Jan 2017

Reviewer: Maria Horne

Reviewer's report:

General comments: Thank you for the opportunity to review this manuscript. The manuscript is within the scope and remit of BMC Geriatrics. The manuscript is only fairly well written as it contains numerous syntax and tense errors, which have led to a loss of clarity, as well as a number of sweeping statements that I do not feel are supported by the results of the study. The study question is clear and the manuscript has some originality, but what new evidence to the evidence base the findings bring should be emphasized more clearly. The manuscript title suggest that this is a revision, yet no comment as to how the previous reviewers comments have been dealt with has been provided - is this an error? If this is a revision, I cannot assess whether the previous reviewers comments have been addressed.

Abstract: This is fairly clear and succinct and the main aspects of the study appear to be accounted for.

Background: The literature review is a little brief and could set the context better. It is assumed that spousal relationships are good? What if this is not the case? There are a number of statements made that are always supported by the literature/evidence base e.g. page 5 lines 68-70 and page 5 lines 73-75. In addition, some sentences require further clarity e.g. page 5 lines 75-76 and page 5 lines 84-85 - how is this relevant to couple based exercise programmes? When you say one couple, do you mean live alone? This is not very clear. Also there are some dated references e.g. Dishman 1988. Exercise and physical activity appear to be used interchangeably. Terms and concepts need to be defined.

Method: There are a number of syntax errors and poor sentence construction which have led to a loss of clarity i.e. inclusion criteria - when you say without exercise habits, do you mean without regular exercise habits? If so, what is regular?; page 7 lines 130-132 poorly constructed sentence. The sample size is small to detect any significance, but this has been stated. However, state why you decided to continue with an underpowered study? What other recruitment strategies were tried?

Appropriate data collection tools have been used, but greater clarity is required i.e. page 9 line 168 - walking for how long and six items of the strength exercise programme out of how many?
Why was self-efficacy not discussed in the introduction? Do couple have greater self-efficacy than single people? More context of this is required in the background.

Statistical analysis appears to be appropriate, but will need oversight by a statistician.

Results: Main results discussed and presented by two tables and four figures. Analysis of results reflects the intended outcomes of the study. Results expressed with Confidence intervals and p values where appropriate. Significant outcomes considered.

Discussion: The participation in strength based exercise showed no significant difference, so I do not think that your statement about maintaining 'exercise' adherence holds true. What you can say is that walking, a physical activity, is maintained at 6 months. Otherwise, the discussion provides an impartial summary of the results, but does not always appear to be supported by the data presented. Some comparison with the existing literature has been provided, but could be enhanced. The manuscript needs to highlight what new evidence this study adds to the evidence base more clearly. The study strength and limitations have been discussed.

Conclusion:

I am not convinced that the conclusions are supported by the data presented.

References: In house style.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**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 recommend additional statistical review.
Quality of written English
Please indicate the quality of language in the manuscript:

Not suitable for publication unless extensively edited

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