Reviewer’s report

Title: Modified Pilates as an adjunct to standard physiotherapy care for urinary incontinence: a mixed methods pilot for a randomised controlled trial

Version: 0 Date: 17 Jan 2017

Reviewer: Stephanie Madill

Reviewer's report:

Overall this is a well written manuscript. The study is interesting, largely well designed and adds to our understanding of conservative treatment for urinary incontinence in women.

I have two major concerns regarding the manuscript. My first concern is that the statistical analyses and results do not follow the stated aims of the study. My second concern is that this study includes several significant limitations that are not addressed by the authors. I have detailed the specifics of these concerns below.

1) Results: You list the four aims of this study at the end of the Background section (page 5, lines 8 through 13). You do not identify which outcome measure(s) address each aim. Please make this clear.

The description of the statistical analyses is insufficient. Please describe both the tests used and why they were chosen. As well, the specific tests used is given in the results section for several tests. They should be in the methods.

Why did you test the reliability of the questionnaires? Which aim did these tests address? Please justify their inclusion.

I understand why you stratified the participants for randomisation, but I do not understand why you performed the primary analyses on the stratified data. I would suggest that you first present your between group results on the whole study sample, and then look at the stratified data as post hoc tests. Alternately, you could perform an analysis to look for a group by stratum interaction.

I do not understand the sentence: "Analyses of subgroups such as patients with low/high SSI and QoL were also undertaken in accordance with the study protocol."

As there were a fair number of drop outs, please repeat the baseline characteristic comparison for only those who completed the study. It is important to know if the groups were still comparable.
I do not understand the results that report the trends towards higher QoL and less social impact. Are these as a result of the intervention or just a between group difference? If they are a between group difference, to which group were they compared?

2) Limitations: Please include the mean/median number of SPC sessions completed by each group. Also, please include the mean/median length of time between the first and last sessions. A significant limitation of this study is the inequality, in terms of contact time with the physios and in group support, between the groups. This information needs to be provide so that the reader can evaluate the difference between the two interventions.

For the SPC group, a minimum of three sessions in three months seems insufficient. The strength training literature advices that at least 12 weeks of overload training is required to produce strength gains. It is not clear that the SPC intervention was of sufficient intensity to produce benefit. Please discuss.

A primary rationale for undertaking this study was that adding modified Pilates to PMFT would increase motivation and adherence. The results of this pilot do not seem to support that supposition as there were more drop outs in the Pilates group than in the control. This limitation needs to be addressed.

The ICS recommends that both assessment of leakage and patient reported measures be collected to assess the effects of interventions for urinary incontinence. The authors state that they did not perform a pad test or other direct measure of leakage because it would have increased participant burden. How would this sort of test increase burden? As most intervention trials include a measure of leakage, not including one here limits the ability to compare this study to other intervention trials. Please discuss.

Minor Concerns:

1) The number and ages of participants belong in the results section, not the methods.

2) What is the Public and Patient Involvement Group?

3) What is the NRES?

4) I think that on page 8, line 10, you mean palpation not palpitation.

5) Please provide an appendix with the descriptions of the modified Pilates exercises.
6) What was the length of time between SPC session 1 and session 2?

7) In the text you talk about the descriptive statistics in terms of mean and standard error, but on the tables you give mean and standard deviation. Which is it?

8) In the text you state that you removed 24 women (14 intervention and 10 control) from the full analyses, while on the flow chart it states that that many women dropped out. Please make the two sources consistent.

9) On Table 2, you need to provide a legend to define all the abbreviations.

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

Unable to assess

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.

Unable to assess

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:

Acceptable

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?
2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

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 declare that I have no competing interests.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal