Reviewer's report

Title: Effects of two exercise protocols in postural balance of elderly women: a randomised controlled trial

Version: 1 Date: 27 January 2015

Reviewer: Tim Henwood

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The study is an investigation of which of Pilates or PNF exercise has the greatest benefit to improve postural strength and common measures of balance capacity. The study has some value regarding the force plate collected outcomes, but has a number of shortcomings in relation to the justification, delivery and outcomes. My primary concern is in relation to the analysis and its description, which is mostly confusing. The statistical methods employed need to be more detailed so the reader can understand better what has been undertaken. I would assume that all measures underwent a pre-post repeated measures analysis? This should be the primary discussion in the results section and tables, not the between two group comparisons. To this end, the wording in the results section should be improved (examples given below.) I also see form the table that within group pre-post data force plate data was by varied analysis, some T-test and some Wilcoxon, but not the other measures? In addition the tables need restructuring and redoing so that the between group comparison is the primary outcome. Figure 2 would be better as a within group analysis. Other comments are given below.

Abstract.

Good, but the results are misleading.

Line 42. No difference between PNF and PG was found, so how can PNF be the only group that showed a significant reduction?

L48. Conclusion needs adjusting.

Introduction.

The section is not well grammatically structured, and lacks sufficient justification for the study and the interventions chosen. In addition, recent evidence (Sherrington et al. 2008 and 2011) is ignored. The authors would be better to reduce physiology descriptors and increase the information about what was lacking in previous investigations that justifies the need for this work. Why these interventions were chosen over other, and why the delivery duration was thought sufficient.

L74. Explain “…..pattern diagonal and spiral…..”?

L80. “….power house”?

L85. PG and CG in full.
L96. “Our ultimate goal……” What is the relevance of this statement?

Methods.

Lacks certain information. How was random assignment undertaken? Is it fair to say based on the exclusion criteria that only health older adults were included, those without any disease? Was PNF by one on one delivery? Why is the PG intervention tabulated but not the PNFG one? The assessment locations, time of day, testers and delivery need more detail. Eg. Was the location, time and tester kept the same between pre and post. Did the intervention delivery time change as repetition and sets increased? How was PNF range of motion tracked to ensure progression? In the PG how was individual capacity allowed for and dealt with?

L103. Avoid the use of the word “subjects”.

L129. Certified in PNF delivery? As an exercise physiologist I am not sure I have heard of a specific PNF certification/course?

L137. How was the platform marker for all 58 participants?

L146. Was TUG at habitual pace?

L155. The Berg also assesses static balance?

L198. See above about requested more detail about analysis. Also how was the sample size calculated.

Results.

A number of concerns are outlined above. Overall this section is confusing and needs a significant rewrite if it is to be improved. Also be consistent with the presentation of data. Some data are to 1 decimal place some to two, significance values are proceeded by a 0 and some are not, some value are separated by a , and some by a ..

L206. Age approached significance.

Discussion.

The discussion is well written and structured, however allot of the information would be better placed in the introduction to justify the study. As stated above I feel the important information in this study is from the force plate, this should be priorities and explored in greater detail. I reiterate, the authors should avoid over emphasising PNF given no difference between PNG and Pilates was found.

Level of interest: An article of limited interest

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

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests