Reviewer’s report

Title: Effectiveness of a theory-based multicomponent intervention (Movement Coaching) on the promotion of total and domain-specific physical activity: a randomised controlled trial in low back pain patients

Version: 0 Date: 04 Aug 2017

Reviewer: Gustavo Almeida

Reviewer’s report:

This manuscript is well written and brings interesting information on the effectiveness of a comprehensive Movement Coaching intervention to promote physical activity in subjects with low back pain. However, this reviewer is very concerned with the methodology, in particular, the statistical analysis and interpretation of the results. See my comments below:

ABSTRACT
- page 3 (line 53): results showed a decline in both groups combined? Needs clarification.

METHODS
- page 12 (line 248): Why didn't you use the threshold of 90 minutes in moderate physical activity that is cited in the sample size calculation? That would make much more sense than having zero as threshold - somebody who increased their physical activity by 5 min/week is an ignorable improvement.

A recent publication by Dunlop et al (doi: 10.1002/acr.23181) suggests a minimum threshold of 45 min/week of moderate to vigorous activity in individuals with knee osteoarthritis. Maybe, this threshold will give you a better idea of those who changed or not their physical activity.

RESULTS
- page 12 (line 260): What is 44%? 44% of the patients screened? Needs clarification.

- page 12 (line 265): 65% of follow-up data missing? So, your results are mostly based on baseline data, as those data were carried forward? That's intriguing.

- page 17 (line 332): I suggest that a post hoc sample size calculation be determined to verify if you were powered for the base case analysis. The significant finding may be misleading.
- page 17 (line 334): the decline was in total physical activity from the movement coaching group. Please revise

DISCUSSION

- page 19 (line 400): This is intriguing! Maybe you should describe what type of work most of the subjects were performing. If most of them work at their desk I believe that they will be more sedentary.

- page 20 (line 409): "the substantial decrease..." - this is certainly because 65% of the follow-up data were inputed from baseline, which implies no change. Additionally, you are probably not powered to detect changes in the base case analysis done. Therefore, this information may not be true.

- page 21 (line 447): "the high number of dropouts..." - this should be your main limitation.

- page 21 (line 455): how about the many other studies that did not have this problem? Furthermore, this reviewer was wondering if the authors took all necessary measures to follow-up with the subjects to collect the questionnaires. Maybe the authors should comment on that.

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.

Yes

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

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