Reviewer’s report

Title: Effectiveness of internet-delivered education and home exercise supported by behaviour change SMS on pain and function for people with knee osteoarthritis: A randomised controlled trial protocol.

Version: 0 Date: 24 Apr 2019

Reviewer: Martin Behrens

Reviewer’s report:

General comments:

The present study protocol deals with the effect of SMS support to an online-based physical activity and strengthening exercise program vs. the same exercise prescription without SMS support. It is thought that SMS support would increase adherence to the program and therefore improve subjective outcome measures to a greater extent than the exercise program without SMS support.

We know the global adaptations in different subsystems of the human body to different interventions (strength training, endurance training, balance training etc.). However, knowledge about the benefits of physical activity for different musculoskeletal disorders does often not translate into practical realization. Therefore, increasing adherence to exercise programs is of great interest with the aim to promote lifelong physical activity in mind. Thus, the following study protocol is of interest. However, there are some minor issues that should be clarified before this manuscript can be considered for publication (see specific comments).

Specific comments:

1. Title

The title is very bulky. I would suggest to shorten the title but I have no good idea. Maybe you have one.

Please check if you mean osteoarthritis or osteoarthrosis. The introduction indicates that you mean the latter one. This is of particular interest because there is a long discussion about the appropriate use of these terms. Please check this aspect for the whole manuscript.

2. Background

l37: With regard to the appropriate use of the terms osteoarthritis and osteoarthrosis, please give a short definition of the joint disorder you mean here.
3. Methods

1149-153: I have seen that you provide a sample size calculation elsewhere. However, a small hint, that a sample size calculation was done, could be inserted here.

1226-228: What is the rationale behind the number of repetitions the number of sets and the frequency of training? Which rest interval will you recommend between sets and exercises? What is the focus of the exercise prescription, e.g. hypertrophy, muscle coordination, muscle activation, multi-modal etc. Please give more (physiological) justifications for the chosen exercise characteristics.

1262: Please insert a space character between numbers and operators and do this in the whole manuscript.

1277-289: Will nutritional information also be provided on the respective home page? Do you control for nutritional changes? This might have impact on your results since nutritional interventions have been shown to alter the extent of inflammation, pain etc.

1297: Please use "sex" instead of "gender"

1319: doubling "quality of life"

4. Discussion

Why do you expect a better outcome regarding your primary and secondary endpoints due to SMS support? Do you think that an increased adherence in terms of more exercise sessions per week translate into increased adaptive responses?

Please provide more information regarding the effect of your training intervention (number of repetitions, sets, rest interval, additional loading etc.) on potential physiological and psychological adaptations and how these could translate in a superior outcome in your self-reported assessments.

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

Yes
**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

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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

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