Reviewer's report

Title: Web-Based Therapeutic Exercise Resource Center as a Treatment for Knee Osteoarthritis: A Prospective Cohort Pilot Study

Version: 1 Date: 8 November 2013

Reviewer: Soren Thorgaard Skou

Reviewer's report:

This manuscript focuses on the effects of an Internet-based intervention in knee osteoarthritis. The strengths of the study are the improvements in clinical outcomes and the applicability of the Internet-based intervention while the major limitations are the short-term follow-up and the lack of control group.

Several other limitations should be addressed before the manuscript can be considered for publication.

Major Compulsory Revisions (MCR)

MCR 1: Background. The background is well-written, however it could benefit from being a bit shorter, thereby leading to the purpose faster.

MCR 2: Background, fourth paragraph. If possible please be more clear on how TERC is different from the previous studies on Internet-delivered treatment in knee OA you mention. This is not clear at this point.

MCR 3: Methods, second paragraph. The following inclusion criteria is a bit strict “living independently; considered themselves in general good health; able to walk without an assistive device” (and the exclusion criteria “a fall more than 2 times in past 6 months”), since you would think that all people with knee OA, perhaps especially those without the possibility to leave their home to do exercise, would benefit from internet-delivered treatments. Please discuss this lack of ability to generalize your findings to all patients with mild/moderate knee OA in the Discussion.

MCR 4: Methods. Second paragraph. You need to be more specific on, how the participants were enrolled. It is not clear to me, if the participants contacted you if interested or if you contacted them or both.

MCR 5: Methods. You end up with 65 participants, how many were screened, and due to which criteria were they excluded. Preferably do a figure showing this. You could find inspiration for the figure in the CONSORT statement.

MCR 6: Methods. Even though your study is not a RCT, using the CONSORT checklist could in general improve the manuscript further, since it would assure that every part of the study was reported thoroughly.

MCR 7: Methods. TERC Intervention. The exercise is individualized, however to improve the strength and reproducibility of the study a more comprehensive
description of the exercise is needed. Which exercises, focus, intensity, how many times a week etc.

MCR 8: Methods. TERC Intervention. How did you ensure that the participants performed the exercises according to your description of each individual exercise routine. Perhaps a lack of improvement in symptoms was simply due to the fact that the participant performed the exercise wrongly?

MCR 10: Methods. Your sample size calculation shows that 37 participants are needed to detect the changes you expect a priori. However, you include 65 participants, why? Is it to account for drop outs/missing data? This needs to be clarified.

MCR 11: Results, first paragraph. Only 80% (52 out of 65) completed both the baseline and 8-week follow-up. Please address this as a potential limitation to the results. Perhaps the last 20% did not improve in symptoms and was not satisfied with the internet-based intervention?

MCR 12: Results, first paragraph. If receiving physical therapy was an exclusion criteria, how was it possible that 21 participant continued exercising as prescribed by the physical therapy? How can you be sure that this was not the reason for their improvements?

MCR 13: Table 1. Please provide information on OA severity, specifically radiographic and symptomatic severity and duration of symptoms. Furthermore, I am not sure, why you present BMI distribution and not only mean (SD).

MCR 14: Table 1. I guess the reason for presenting the distribution of age and education levels is to show that the use of Internet-delivered interventions is possible across age and educational levels? However, this is not mentioned in the discussion.

MCR 15: Table 2. Please explain what the mean is expressing in the table.

MCR 16: Results, second paragraph. Please include educational level as a between subject factor in the analysis (as you have done with age) and discuss it. Since your intervention involves educational aspects and “self-learning” the level of education could affect the results.

MCR 17: Discussion, third paragraph. A recent meta-analysis by Fransen et al. (http://www.ncbi.nlm.nih.gov/pubmed/19447940) showed that supervised exercise sessions were twice as effective as non-supervised sessions. Please include this in your discussion.


Minor Essential Revisions (MER)

MER 1: Registration of the trial. Was this trial registered in a public trial registry or similar as supported by ICMJE:
http://www.icmje.org/publishing_10register.html
If so, please provide the registration number.

MER 2: Methods, Participants. Why did you set the inclusion criteria at 25 years? The ACR Clinical plus Radiographic Classification Criteria for OA, which you are referring to, are using 38 years as their age criteria.

MER 3: Methods, Participants. It seems a bit redundant to have an additional inclusion criteria of pain, since The ACR Classification Criteria for OA, includes: “One must have articular knee pain for most days of the prior month”

MER 4: Methods, Outcome Measures. You are using the short-form WOMAC function scale (reference [37]). Please state this explicitly under outcome measures and in the abstract. Currently you are only referring to it as: “a short form knee function scale”.

MER 5: Results, second paragraph. You have already written this sentence in the methods: “Outcome differences were also examined with respect to patient gender, age, BMI, and duration of symptoms by including a between subject factor into a repeated measures analysis of variance model (ANOVA) examining baseline to 8-week follow-up scores.”

MER 6: Discussion, Fourth paragraph. You state: “compliance with the recommended exercise regimen showed very high engagement with the program, with patients performing knee exercises on average 4-5 times per week.” How can you be sure about this? Since the exercise was not supervised, it would probably be better to write something like: “patients reported” instead of “patients performing” and even “soften” the sentence before a bit more.

Minor issues not for publication (MIP)

MIP 1: Methods, second paragraph. In “American College of Rheumatology’s Clinical plus Radiographic Classification Criteria for OA” “’s” should be deleted after Rheumatology.

MIP 2: Methods, second paragraph. You state: “The radiographs were not conducted as part of this study but were been obtained as part of the patient’s routine care.” I think “had been obtained” is a better expression.

Discretionary Revisions (DR)

DR 1: Background, second paragraph. You are citing the EULAR recommendations. Later in the manuscript you are citing the updated paper on non-pharmacological core management (http://www.ncbi.nlm.nih.gov/pubmed/23595142; still recommending exercise). Why not cite the updated paper in the background.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.

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