Reviewer's report

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

Version: Date: 28 November 2013

Reviewer: Daniel Bossen

Reviewer's report:

This is a very relevant study. The paper provides interesting results from a web-based exercise intervention among patients with knee and hip osteoarthritis. The preliminary results underscore the importance of web-based exercise programs as self-management tools. Causality, however, cannot be drawn since this is a prospective cohort study without a control group.

Abstract Minor Essential Revisions:

- Results: “knee function scores decreased”. This is confusing.

Background

Minor Essential Revisions:

- Paragraph 2: Reference 8 concerns only patients with hip OA.

- Paragraph 3: The need for a web-based exercise intervention is highlighted by the fact that a low percentage of rheumatologist and physicians provide exercises. However, in my opinion (which is also described in the discussion section) physical therapists have a more important role in the provision of exercises. Can you elaborate on this? What is known about the provision of exercises in the physical therapy practice?

- Last sentence introduction: “as part of treatment for knee OA” What do the authors mean with “treatment”? Is the application a tool to stimulate self-management or is it used as part of a treatment by healthcare providers?

Discretionary Revisions:

- Paragraph 4: A suggestion for an up-to-date reference for the effectiveness of a web-based physical activity intervention in patients with knee and hip OA, see doi: 10.2196/jmir.2662.

Methods

Minor Essential Revisions:

- Paragraph 2: What do the authors mean with general good health? What kind of questions are used to measure this?
- The website www.helpmyknees.com is not accessible. Please, make a copy and archive the URL through WEbCite (www.webcitation.org).

- In the description of the intervention, please explain how the initial level of exercise difficulty is determined. How does this take place? Are aerobic recommendations also tailored to patient’s physical condition?

Discretionary Revisions:

- Provide more details in the heading ‘study design’ (e.g. follow-up time, ethics approval)

- Primary/secondary outcomes are not indicated

- Statistical analysis: Most of the content in paragraph 3, 4 and 5 is redundant.

Results

Major Compulsory Revisions:

- Are differences between the two measurements normally distributed? This is an important assumption for using a paired t-test.

- In contrast to GEE analysis or random coefficient analysis, t-tests can only analyze complete datasets. Of the 65 participants, 13 patients did not complete any of the two assessments. Please provide information about this group. Who are these people? (e.g. gender, age).

Minor Essential Revisions:

- Please, provide a flow diagram illustrating the study design and flow of participants.

- First paragraph: “at the start of the study…..to some degree”, what do the authors want to say with this sentence? Are they excluded from the study? And, how many participants were excluded based on which criteria?

- In table 3 and results section, the total WOMAC score is presented. I think it is more informative when authors present both total scores and scores for subscales (stiffness, pain and daily function). Moreover, reductions in pain scores are described in the discussion and conclusion sections but not in the results section.

- Were there any side effects captured? e.g. exercise related injuries

Discussion

Major Compulsory Revisions:

- The discussion needs to be considered more in the view of the study design,
i.e. a non-randomized one arm pilot study.

- Please, give suggestions for future studies in regard to your findings. What are the next steps. Implementation? A randomized controlled trial?

- Exercise adherence: Since program usage is strongly associated with drop-out (Eysenbach, The law of attrition 2005), it is obviously that adherence rates in this study are overestimated. Please, elaborate on this in the discussion.

Minor Essential Revisions:

- Paragraph 3: What is meant with directed and non-directed. Guided?

- Exercise adherence: Adherence is a typical problem in this field (for example: Eysenbach, 2005). Given the fact that the TERC intervention is an unguided web-based intervention, adherence rates are high when compared to other non-guided interventions and even higher than most guided programs. Do the authors have an idea which intervention characteristics (e.g. communication with staff, design, email reminders) may have led to these high adherence rates?

**Level of interest:** An article of importance in its field

**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