Reviewer’s report

Title: Evaluation of pain and function after two home exercise programs: A randomized controlled trial on women with chronic neck pain

Version: 2 Date: 16 September 2013

Reviewer: Petri Salo

Reviewer’s report:

Dear authors

This is a well written manuscript. The language is good with only minor misspelling and the text flow is enjoyable. However, the study seems to lack power and thus it should be considered more like a descriptive study.

Major Compulsory Revisions (which the author must respond to before a decision on publication can be reached)

1. Did the authors perform power calculation to assess the sample size? It seems that the number of subjects in this study is rather low to reach statistically significant differences between groups (as the authors admit). If not, this and reason for that should be stated in the study limitations.

2. Lack of power affects the conclusions drawn from the data. In the discussion the authors state that their findings that both groups STRENGTH and STRETCH showed similar improvements, contradict the findings of Ylinen, Andersen and Zebis. However if the authors study was unable to find differences between STRENGTH and STRETCH due to lack of power (type II error), this conclusion is misleading. Strength training and stretching might be able to produce significant differences between groups, but this data was not able to show it. Thus assimilation of studies that show adequate power with studies that do not show adequate power misleads the reader. This applies also to the sentence “Our results that no difference exists between high-intensity strength training and low-intensity exercise with respect pain intensity and function….”. And also to the sentence “This conclusion agrees with the results in our trial where significantly increase strength in the STRENGTH group was not linked to……”.

3. Were the physiotherapists that did the clinical examination and outcome measures blinded.

4. In Methods, Subjects is stated “The participants also had to agree to follow the treatment plan as prescribed”. What does this mean? Informed consent also states that one can stop to participate in the study at any time without any reason.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1. In abstract the training frequency of the STRETCH group should be added.

2. In abstract results: correct the spelling with ….outcomes between the groups….
3. In abstract results: correct the spelling with ….reporting clinically important…
4. In Methods, Subjects: add a reference to Numeric Rating Scale (NRS)
5. In the intervention section description of the stretching exercises states that …comprised retraction of the neck by stretching of the following muscles: m. trapezius…. This gives an idea that retraction of the neck was done by stretching all those muscles. Perhaps the authors mean …comprised retraction of the neck and stretching of the …..

Discretionary Revisions (which are recommendations for improvement but which the author can choose to ignore)

1. In results concerning both 4 to 6-month follow-up and 12-month follow-up, difference between groups could be presented before within group differences. I assume that differences between groups were the authors’ main interest.
2. The authors chose to present the results in table 1 and 2 using median values instead of mean values. Could you explain why? In table 2 statistics make it look a bit confusing when median neck pain in STRENGT drop from 6 at baseline to 2.5 in 12 months without being statistically significant and in the same time in STRETCH from 5 to 3 with p-value .009.
3. Is it relevant to present p-values for comparisons between completers and responders when there are only 2 to 6 (or up to 19 at the most) subjects in each group? See comments above concerning power. Thus the nature of this study should be more like descriptive and presenting % -values among completers and responders would be appropriate means for that.
4. The progression of lifting head up from the supine position is not described in the interventions section.

Level of interest: An article of limited interest

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'