Reviewer's report

Title: Neck-specific training with a cognitive behavioural approach compared with prescribed physical activity in patients with cervical radiculopathy: a protocol of a prospective randomised clinical trial.

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Reviewer: Arianne Verhagen

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This paper presents a protocol of a randomised clinical trial on the comparative effectiveness of two different strategies for patients with cervical radiculopathy. The topic is of interest for physical therapists.

General comments

1. The paper presents the protocol of a trial. The reporting of the protocol could follow the guidelines of the CONSORT statement a bit better than it does now. The method section should be revised according to the CONSORT statement. I now miss relevant information, for instance on whether or not trial participants are blinded. You also have to make a statement when they are not blinded and inform the reader of other measures to prevent bias due to non blinding (e.g. assessing patient treatment preferences, appointing caregivers to just one intervention they believe in most, etc). Most comments are made in order to clarify the design and improve the reporting quality.

2. The manuscript includes non English references (e.g. ref 3 and 23), please avoid this because readers cannot find or read these publications.

Specific comments

1. Abstract, method. Please describe the setting and be clearer on the fact that this is a two arm trial. Reading the abstract I got a bit confused about a third arm of no treatment or usual care. I also would like the authors to be clearer about the interventions that will be compared on its effectiveness. Now it is confusing; one intervention is ‘neck specific training and cognitive behavioural approach’ and the other intervention is ‘prescribed physical activity’. Maybe one term for each intervention would make it less confusing?

2. Introduction. The introduction clearly is written in a period of grant application, but needs to be revised using more recently published studies. I miss relevant literature, for instance systematic reviews of Thoomes E (2012 and 2013) and v Middelkoop M (2013) and other trial evaluating conservative care in patients with cervical radiculopathy (e.g. Kuijpers B (2009)).

3. Introduction. I do not understand why the introduction is so strongly focussing on surgery as this is not an intervention under study. Please remove most information on surgery as it does not add anything for this trial. The authors might present information on the value of conservative intervention compared to
surgery (see also v Middelkoop 2013).

4. Method, patient selection, page 7. Patient selection should be done in a valid and reliable way to prevent selection bias. Please clarify first what the clinical symptoms are of patients with cervical disc disease and nerve root compression that needs to be verified by MRI, and what the standard physical examination entails. Please also elaborate on the poor reliability/validity of the Spurling and extension test and how you deal with that. Please be more specific in describing the patient selection strategy and inform the reader about the changes of misclassification.

5. Method, sample size calculation, page 7. I am not sure why the authors perform an additional power analysis; please explain. I am also not sure why the authors powered this study as a superiority trial, instead of an equivalence study; please also explain which intervention one regards as superior over the other.

6. Method, evaluation, page 8. Please follow the CONSORT guidelines and explain here the baseline and follow-up measurements. Please also explain which questionnaires will be used. The statement that all questionnaires have good reliability and validity is not enough.

7. Method, primary outcome, page 8-9. As I see there are three primary outcomes. Based on which of them will the authors concluded about the effectiveness or not? Based on the statements under sample size I assume the VAS will be the outcome on which the conclusions will be based, but VAS neck or VAS arm pain? Please choose one of them combined with the time of outcome measurement.

8. Method, blinding. I miss any information on this aspect.

9. Method, intervention, page 9. To ease reading this part of the method section it would be good to give the interventions a shorter name, now the name of the intervention is rather long and unclear. Please describe more clearly what the contrast is between both interventions. In my opinion both are active interventions and the only contrast that might be there is the behavioural approach. Is that sufficient contrast to find superiority of this intervention?

10. Method, analysis, page 12. Please make clear that you perform an intention-to-treat analysis (see CONSORT statement). The analysis section is rather short and misses relevant information. How do you deal with missing information, what kinds of repeated measurement analysis will you use?

11. Discussion, page 12. Why suddenly discuss gender as a prognostic factor of surgery?

12. Discussion, page 12. What do the authors mean by the risk of this study? Which risk? The risk of not being able to include de necessary number of patients, or the risk of bias, or maybe the risk of adverse events? Please clarify.

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

**Quality of written English:** Needs some language corrections before being
published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

'I declare that I have no competing interests'