Reviewer's report

Title: Cognitive, fear-reducing information or individual symptom-based physical training in chronic LBP. A pragmatic, randomized, controlled trial with 1-year follow-up.

Version: 1 Date: 7 January 2010

Reviewer: Johan Vlaeyen

Reviewer's report:

This manuscript reports on the results of a randomized study comparing the effects of information aimed to reduce fear of pain and an individual symptom-based physical training in patients with chronic low back pain. The study is one of the few that systematically examines the effects of verbal instruction as a fear reduction approach in the area of chronic pain, and the authors are complimented for undertaking such a study. The strengths of the study are the relatively high number of participants and the up-to-date choice of primary and secondary outcome measures. Despite these strengths, there are a number of issues that need to be addressed.

The word “cognitive” is misleading, and would suggest that the authors use the term fear-reducing information.

I was wondering whether one of the key issues in the fear reducing intervention is the difference between pain and disability (it is not because you are in pain that you cannot perform daily activities), and between harm and hurt (it is not because you feel pain that there is something dangerously wrong I your back). If that is correct, the authors might stress this a little more, as it may influence the participants propositional knowledge about the meaning of pain.

The manuscript might be strengthened if the authors would be willing to conduct a mediation analysis, testing whether the difference between both interventions in disability is mediated by a reduction in pain-related fear. Such an analysis might shed some light on why the intervention worked, and not just on which intervention works best. It would also be in line with recent studies also testing mediation [see: Smeets et al. Reduction of pain catastrophizing mediates the outcome of both physical and cognitive-behavioral treatment in chronic low back pain. J Pain 2006;7(4):261-271., Turner et al. Mediators, moderators, and predictors of therapeutic change in cognitive-behavioral therapy for chronic pain. Pain 2007;127(3):276-286. Leeuw M, et al. Exposure in vivo versus operant graded activity in chronic low back pain patients: Results of a randomized controlled trial. Pain 2008;138(1):192-207.]

During the first visit, both groups received a clarification of the pathology causing the patients’ symptoms (page 7). I was wondering whether this explanation was individualized, or whether all patients received the same standard explanation. In the latter case, what was the explanation?
Were both treatments manualized, and if so, is there a source so that readers can consult whenever they wish to. For example, the participants were given a CD with a PowerPoint presentation on general biologic and cognitive aspects of back pain for studying at home (page 8). Is this CD available, and if so please mention the source. For example a footnote can be added with the following text: “The CD is available and can be obtained from the first author.”

Please explain what is meant by “centralization”, as not all readers will be familiar with this concept (page 9).

A 15-item questionnaire covering activity limitations over 2 weeks was utilized, but no information about the clinimetrics is provided in the manuscript. Please provide information about reliability and validity, and if possible also a references. What is the correlation/overlap with the RMQ and why did the authors not restrict to the more known RMQ?

The description of the statistical analyses is unclear, and should be elaborated on more. Did the authors statistically control for gender, duration of pain and MRI findings? Table 3 in the text seems to correspond with Table 2 in the appendix.

In Table 2, does the disability measure correspond to RMQ, or the other disability measure. Why is only one measure reported, whilst there were two measures described?

Discussion: how can bio-feedback be used to investigate whether certain movements induce fear? Do the authors mean EMG recordings, and guarded movements (see: e.g. van der Hulst et al. Back muscle activation patterns in chronic low back pain during walking: a "guarding" hypothesis. Clin J Pain;26(1):30-37.)

How are the results of their study to be interpreted in the context of similar studies, such as: de Jong et al. Fear of Movement/(Re)injury in Chronic Low Back Pain: Education or Exposure In Vivo as Mediator to Fear Reduction? Clin J Pain 2005;21(1):9-17.

There are a number of typos that need to be corrected.

Judgment: Major revision