Reviewer’s report

Title: Evaluation of a tailored, multi-component intervention for implementation of evidence-based clinical practice guidelines in primary care physical therapy: a non-randomized controlled study

Version: 2

Date: 6 November 2013

Reviewer: Henna Hasson

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Comments to the authors

Major Compulsory Revisions

My main concern is still the fact that the study design is too weak for investigating effects of implementation strategies. The authors answered to my previous comment (number 1) with “…. compare different implementation strategies, to see which one are most effective in implementing the intervention….”. I totally agree with this definition. Thus, the comparison of different strategies is missing in this study. Perhaps the aim of the study should be rephrased to for instance following: ...To analyze implementation outcomes after receiving a multi-component implementation intervention, compared with those receiving no intervention (control group). This would imply not using the wording effects which would have consequences for the presentation of the results and the discussion part.

It is stated that the intervention was based on a theoretical model. This model is not presented in the paper. I’m not sure that the reference (number 17) includes any theories. Or perhaps the authors mean a conceptual model or framework rather than a theory? Perhaps there is a different understanding for what consist of a theory and the authors should clarify what they mean with a theory in this case. The basic components of that theory should be presented in the paper. This part should be clarified and the entire paper referring to the theory should be revised in accordance.

It is suggested that a rational for the choice of these intervention components should be more developed. The table 4 presents the findings of the prior survey and the activities provided in the intervention. It seems that most of these aspects deals with knowledge of guidelines rather than for instance facilitation of actual work with guidelines at work practices. Is it possible that the survey lacks relevant items and thus the intervention also lacks some important components? The prior studies that are currently presented in the paper are mostly used to motivate the current intervention components (for instance "educational material (e.g.,guidelines) [22], interactive education [23] and reminders [24]” p. 5). The extensive review by Grimshhow et al (2013) also present other intervention activities that the authors could have used. Thus, a rational is needed for the choice of for instance a seminar. What was the main function of this activity? Or
is the choice of intervention components based on the theory of the intervention? The paper could benefit from at least two things: 1) rational and discussion of other possible implementation strategies (which was also suggested by the reviewer Ilona Autti-Rämö) and 2) a program logic thinking i.e. providing a description of core intervention components together with a short description of expected immediate, short and long term outcomes. This should then also be discussed in the discussion part in terms of what parts of the multi-component intervention were possible affecting the outcomes. In addition, the reviewer Ilona Autti-Rämö raised a concern about alternative strategies (comment 5). It is suggested that the authors take some more time on considering this comment.

The choice of the primary outcomes should be motivated. Are these relevant measures taken into consideration the logic model suggested above? The authors could discuss the outcomes in relation to Proctor’s implementation outcomes and provide a rational for the choice of the outcomes.

It is stated that “This study showed that a tailored, multi-component guideline implementation intervention, based on a theoretical model as well as current evidence, can affect the frequency of guideline use, as well as several determinants of guideline use, among PTs in primary care.” However, the results of the study showed that the intervention group had significantly higher proportion of PTs that reported being aware of guidelines, knowing where to find guidelines and having easy access to guidelines. The use of guidelines between the intervention and control group was only significant when analyzing the sub-groups of the intervention group. Thus, the results showed that the PTs who participated in the implementation seminar reported frequent use of guidelines to significantly greater extent than those in the control group. Would this imply that the seminar (a single intervention components rather than multi-component interventions) had significant effect on guideline use? A program logic (as suggested above) could help to make sense of this.

The first paragraph in the discussion section states that knowledge of guidelines is important for use of guidelines. Knowledge is one component, but later research on implementation has clearly showed that knowledge is not enough for using guidelines/methods (for instance several publications from Michie et al). It is suggested that the authors do not emphasize the knowledge items this much. In addition, more recent references to this part should be used. Many of the references are old and not totally in line with current research. Rather, the discussion should be more balanced in terms of recognizing the limitation of these findings. In fact, even the knowledge increased among intervention participants they still did not use the guidelines to any higher extent.

Minor Essential Revisions

The discussion section is still lengthy and needs to be sharpened. Instead of comparing to several prior studies separately (section Comparison to previous studies) perhaps the studies could be grouped in a meaningful way. This would shorten this part which is necessary. In addition, some of the text under heading “Possible explanations of the results” are more methodological discussion points.
Perhaps these could be organized under a heading methodological discussion. The heading limitation could be removed in that case.

A short discussion about when to measure different implementation outcomes would be fruitful. Is this correct time frame to measure for instance knowledge and use. Should use be measured after knowledge? Kirkpatrick’s model of evaluation might guide this discussion.

The discussion section still lacks a discussion of the most important implications of this study, especially for implementation and intervention research.

Comments concerning the “Implications for research”
"Measuring the effect of implementation interventions as well as guideline use is very complex, but very important.” seem not to add anything to the paper. Could be omitted.

The suggestion that a passive dissemination of guidelines should be evaluated in future studies seems strange. Wouldn’t it be more valuable to evaluate for instance two active interventions with a manipulation on different intervention components based on prior studies and relevant theories? The main suggestion should perhaps be the comparison of active interventions rather than having intervention versus control? This would be in line with Hybrid design type of studies.

Please clarify what "Data should be collected so that individual changes from baseline to follow-up can be analyzed." implies.

Many of the suggestions for future research are important but not in the main scope of implementation researchers (effect on patient outcomes, cost-effectiveness, qualitative studies). It would be more interesting to hear the authors more thorough analysis of need for future research based on the learning from this specific study. What is the next step for multi-component, tailored implementation studies?

**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'.