Reviewer's report

Title: Effectiveness of physiotherapy exercise following hip arthroplasty for osteoarthritis: a systematic review of clinical trials.

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Reviewer: Cindy Veenhof

Reviewer's report:

The manuscript presents a nice effort to collect all information concerning physiotherapy/exercise therapy after hip arthroplasty, which is an important and interesting subject. It is clear that the authors did an extensive literature search to collect all literature which has been written on this subject. In table 4 and 5 nice summaries are given of the included trials, describing the main information.

Major compulsory revisions:

I have two major comments on the methodology of the recent manuscript:

1. Selection of interventions. It is clear that interventions are selected which provide physiotherapy exercise after hip arthroplasty. However, no inclusion criteria are defined concerning the maximum time period between the surgery and the intervention. This leads to the inclusion of interventions which are started 1 year or even 2 years after the surgery. I do not agree with the authors that these interventions are post-surgery interventions! These interventions are exercise therapy interventions and should not be grouped with interventions which are started within a short period after surgery. Therefore, I strongly recommend to include an inclusion criteria that the physiotherapy exercise intervention should be started within 3 months after surgery. This means that the trials of Jan, Sashika and Trudelle Jackson and Patterson need to be left out of the review.

2a. Methodological quality of the trials. The authors clearly state that they choose to present a component approach to check the quality of the included studies. In the discussion they also discuss this approach, which is good. However, I still have concerns about this approach since the authors do not conclude whether a study is of high, moderate or low quality. If I look at the scores of the several items in table 2, I am afraid neither of the studies are of high quality (independent of which quality checklist will be used) and most studies are of low quality and would be excluded in most systematic reviews. I believe this should be more emphasised in the manuscript.

2b. As above stated most included studies are of low quality and therefore I believe that the authors should not present meta-analytic summaries when the trials are of low quality. In figure 1 the authors also present that 2 RCT's are suitable for inclusion in meta-analysis. I do not understand the rationale behind this conclusion. Although I have the opinion that no meta-analyses should be
performed at all, I do not understand why the authors state in figure 1 that meta-analyses can be performed in 2 studies and that meta-analyses summaries are presented on 5 RCT's. I am afraid that readers do not realise the difference between meta-analyses summaries and exploratory meta-analyses and that the figures can be misinterpreted.

I know the authors underline that the meta-analyses summaries are only summaries and should not be interpreted as exploratory meta-analyses but I recommend to leave out these figures. Seen the methodological quality and the diversity in interventions I recommend the authors to describe the results of each study separately. The final conclusion of the manuscript remains the same: insufficient evidence exists to establish the effectiveness of physiotherapy exercise following hip replacement and there is an urgent need for well designed trials.

In conclusion, in my opinion the manuscript must be revised by excluding the intervention which started >3 months after surgery and by summarizing the main results of each trial seperately without trying to summarise in meta-analyses. Also the low quality of the trials need to be emphasised.

Minor essential revisions:
1. In table 2 data is missing on the study of Kaae e.a. In all other tables this study is included.
2 In the introduction it is not clearly explained why the authors specifically focus on the outcome measures function, quality of life, mobility, range of motion and muscle strength. Do patients after surgery especially have problems with these aspects. It seems strange to exclude pain since pain is one of the main reasons to get surgery in the first place.
3. I do not understand the part in future directions: The trials which included out-patient....the temptation to vote count trials should be avoided. Can you rewrite this sentence?

**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.