Reviewer's report

Title: Six-week high-intensity exercise program for middle-aged patients with knee osteoarthritis - a prospective, randomized, and controlled study

Version: 3 Date: 11 March 2005

Reviewer: Marlene Fransen

Reviewer's report:

General
Throughout the manuscript you need to eliminate all within group results. They are misleading. You need to compare to the control group at all times, and not simply conclude a positive results when the intervention group demonstrated a significant improvement and the control group did not. This is not a valid analysis for a RCT. You need to compare statistically either the outcomes scores at 6 weeks or 6 months(independent comparison)or the change scores (paired comparison).
The latter is often more appropriate with small sample sizes and when you are not adjusting for baseline differences. When you do this you will probably find (looking at the 95% CIs) that there are no significant differences between the groups in any of the outcome measures.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
Abstract: Do not understand 'measures of aerobic capacity and functional performance were used to ensure the effectiveness of the intervention'. What is the explanation that there were no differences.
Drop all within group results - they are very misleading. For example, while aerobic capacity improved in the exercise group, it also equally improved in the control group!!
Randomised numbers belong in methods, not results

Background: Needs rewriting - poor English language. 2nd last sentence not justified.

Methods: Drop outline of exercise intervention details (1-6). This information is provided in the appendix.

Again, the section the physical measures to 'ensure the effectiveness of the intervention' is not correct. The main outcome was KOOS. The exercise program may or may not result in changes in these physical measures. The assumption that if patients exercised sufficiently, these physical measures would improve is very tenuous. Depends on too many other factors and is not a simple linear association. Better just to include these measures as secondary outcome measures, rather than 'tests of compliance'.

Statistics: Need to use tests to 'compare' changes rather than 'study' changes.

Results:
Limit analysis (and p values) to two group comparisons (either independent or paired). Drop the with-in (one) group differences. This analysis should, in fact, be comparing within group differences between the two groups not just assessing changes within one group.

Add some text about Table 4

Discussion:
Will probably need revision when eliminating the 'within (one) group' results.
Tables: Need revision in light of above. P values should be limited to differences between groups, not within one group.

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

Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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: No

Declaration of competing interests:

I declare that I have no competing interests