The value of individual or collective group exercise programs for knee or hip osteoarthritis: elaboration of French clinical practice guidelines

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CRD summary
This review proposed exercise therapy for knee and/or hip osteoarthritis. A lack of evidence meant that no conclusions were drawn about relative benefits of individual and group exercise modalities. Various potential methodological limitations made the reliability of the authors’ conclusions unclear.

Authors’ objectives
To evaluate the effectiveness of individual and group exercise therapy for patients with knee or hip osteoarthritis.

Searching
PubMed, Pascal Biomed and unspecified Cochrane Library databases were searched for articles published in English or French from January 1966 to January 2006. Reference lists of all relevant articles were checked. Search terms were reported.

Study selection
All studies that investigated exercise as a rehabilitation intervention in adult patients with knee or hip osteoarthritis were eligible for inclusion in the review.

Included studies were heterogeneous with respect to the study population, interventions and outcome measures used. The different modalities of exercise studied included static or dynamic, resistive, isokinetic, with immersion, global or analytical lower-limb muscle strengthening, endurance training, balance training, passive mobilisation, muscle and tendon lengthening.

Outcome measures used included analytical evaluations (range of motion, isokinetic or isometric maximal voluntary force, balance tests and posturography, VO₂ (oxygen uptake) max, level of spontaneous pain or pain while walking); functional evaluations (six-minute walk test, timed get-up-and-go test, ascending and descending stairs), self-reported measures (Western Ontario and McMaster Universities Osteoarthritis Index, Arthritis Impact Measurement Scale, Activities of Daily Living) or non-steroidal anti-inflammatory drug therapy. Some studies evaluated individual and group exercises separately; others used a combination of group and individual sessions. Some of the exercise programmes were delivered in the community or in the home. The frequency of exercise sessions was one to three per week with a duration of 20 to 90 minutes over a period of five weeks to 24 months.

Two reviewers selected the included articles.

Assessment of study quality
The study validity was assessed using the grading scale of French Agency for Accreditation and Evaluation in Healthcare. Low-quality studies with inadequate randomisation, insufficient number of subjects and/or unclear interventions were excluded.

The authors did not state how many reviewers performed the validity assessment.

Data extraction
The authors appeared to have extracted data on a number of different outcome measures, which included analytical evaluations, functional evaluations, self-reported measures, non-steroidal anti-inflammatory drug therapy and intervention characteristics. These outcomes were reported as direction of trend (for example, low, moderate) or percentage improvement.

The authors did not state how many reviewers extracted the data.
Methods of synthesis
The results were synthesised narratively.

Results of the review
Twenty-nine studies (n=4,762) were included: 21 on knee osteoarthritis; one on hip arthritis; and seven on knee and hip arthritis. Of these, 12 were of evidence level 1. The authors did not report the specific aspects of quality assessment.

There was low to moderate benefit of individual exercise in improving pain (up to 36% on visual analogue scale), walking ability and muscle strength following treatment (11 studies). One year after treatment these benefits had decreased (two studies). One study showed benefits for pain, muscle strength and range of mobilisation at two years.

Group exercises showed a moderate benefit for pain, muscle strength, walking, balance and function (nine studies). Quality of life was not significantly improved. One study investigated a combination of group exercise followed by individual programme and showed that exercise prevented deterioration of function during early knee osteoarthritis.

Studies that compared group with individual exercise programmes gave mixed results. Two studies found no significant difference in effectiveness. One study found that supervised group exercise programs were beneficial compared with unsupervised individual exercises. Another study found that individual isokinetic exercises provided a greater strengthening compared with group exercise therapy.

No important adverse events or complications were reported.

Authors’ conclusions
The authors concluded that exercise therapy was indicated for lower-limb osteoarthritis and that exercise programmes must be developed. There was little evidence to suggest superiority of either individual or group exercise modalities and no conclusions were drawn regarding the relative benefits of these modalities.

CRD commentary
The review question was clear and well defined. However, inclusion criteria appeared loosely defined (especially in study design). The literature search appeared to be adequate, although no apparent attempts were made to identify unpublished studies and this meant that relevant studies may have been missed. There was no formal assessment of publication bias. The restriction to English and French articles could have introduced language bias. Some details of the review process (such as how many reviewers assessed the study validity and performed the data extraction) were poorly reported. Therefore, it was difficult to assess whether appropriate steps were taken to minimise the bias and errors. Given the heterogeneity of studies included, the narrative synthesis was appropriate. But, detailed results from individual studies were not reported and so it was impossible to verify the authors' summary results. Given the various potential methodological limitations identified above, the extent to which the authors' conclusions are reliable is unclear.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.

Research: The authors stated that high-quality randomised controlled trials were required to compare the effectiveness of individual versus group exercise therapy for knee and hip osteoarthritis.

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Bibliographic details
Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.