CRD summary
This review examined the efficacy of interventions to reduce depressive symptoms in people with osteoarthritis. The authors concluded that cognitive-behavioural therapy, integrated depression care and exercise therapy can reduce depression in the short term. The included studies lacked methodological quality and mostly did not use depression as the primary outcome, which suggest that the authors' conclusions should be interpreted tentatively.

Authors' objectives
To evaluate the effectiveness of interventions to reduce depressive symptoms in older adults with osteoarthritis.

Searching
PubMed, CINAHL, SCOPUS, PsycINFO and Web of Knowledge were searched from 1990 to July 2009 for studies in English. Search terms were provided. Reference lists of identified articles were searched. Relevant journals and conference abstracts were handsearched.

Study selection
Experimental studies that evaluated the effect of patient education programmes, cognitive-behavioural therapy (CBT), depression care and pharmacological interventions and exercise therapy on depression in participants with osteoarthritis were included. Studies of people with arthritis were included if most participants had osteoarthritis. The primary outcome of interest was depression.

Study designs included uncontrolled, controlled and randomised controlled trials (RCTs). Included interventions comprised educational, physical, psychological (such as CBT) or pharmacological therapy combined with depression care. Exercise programmes employed included Tai Chi, strength training, aquatic exercise, kinaesthesia and balance exercises. The number of sessions ranged from four to 20. Where reported, mean age of participants ranged from 50 to 69 years. Various tools for assessment of depression were used and included Center for Epidemiological Studies - Depression (CES-D) scale, Hospital Anxiety and Depression Scale (HADS), Beck Depression Inventory (BDI), SF-36 and Hopkins Symptom Checklist; cut-offs varied.

Two reviewers independently screened articles for inclusion.

Assessment of study quality
No validity assessment was reported.

Data extraction
Data were extracted on depression-related findings. Statistical and clinical significances were noted. Statistical significance was calculated using previously published methodologies.

The authors did not state how many reviewers performed data extraction.

Methods of synthesis
A narrative synthesis was performed with results grouped by types of intervention.

Results of the review
Fourteen studies (n=4,679 patients) were included. Eleven studies were RCTs.

Eleven of the 14 studies showed some short-term improvement in depressive symptoms.

Patient education programmes (three studies): Patient education was beneficial for the reduction of depressive症状.
symptoms over the short-term for patients with osteoarthritis.

**CBT (two studies):** Two RCTs both showed statistically significant improvements in depression, but the authors did not consider these improvements to be clinically significant.

**Exercise (seven studies):** Four RCTs showed statistically significant reductions in depressive symptoms.

**Depression care and pharmacy interventions (two studies):** One controlled trial and one uncontrolled study both showed clinically significant improvements of reduced depressive symptoms and pain up to six months after the intervention.

**Authors' conclusions**

The authors concluded that CBT, integrated depression care management and exercise therapy reduced depressive symptoms in the short term. Long-term benefits of depression management in patients with osteoarthritis and comorbid depression were unknown.

**CRD commentary**

This review had a clear aim and inclusion criteria. An attempt was made to handsearch journals and conference abstracts, which reduced the risk of publication bias. Only studies in English were included, which risked language bias. Study selection was performed independently by two authors, which reduced the risk of reviewer bias. The authors did not describe their methods of data extraction so bias may have been introduced at this stage.

No formal quality assessment of studies was reported, which made it impossible to assess the reliability of individual study results and their synthesis. Study details were provided. Most studies did not use depression as the primary outcome and may have been underpowered. A narrative synthesis was appropriate because of variation among the included studies.

The included studies lacked methodological quality and mostly did not use depression as the primary outcome, which suggest that the authors' conclusions should be interpreted tentatively.

**Implications of the review for practice and research**

**Practice:** The authors stated that only two of the included studies that reported a benefit of interventions implied clinical significance for patients with osteoarthritis and comorbid depression.

**Research:** The authors stated a need for research to clarify the importance of exercise programmes in terms of duration, intensity and frequency and how exercise therapy may influence the link between pain and depression. Future research could explore the benefits of a course of aerobic exercise prescription by general practitioners or consider a combined intervention approach for depression and pain, such as aerobic exercise with psychological support. Studies should be adequately powered and have depression as the primary outcome measure.

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