
The effectiveness of exercise in the management of post-natal depression: systematic review and meta-analysis

Daley A, Jolly K, MacArthur C

CRD summary

This review concluded that it was uncertain whether exercise reduced symptoms of post-natal depression. The review was well conducted and the conclusions are likely to be reliable.

Authors' objectives

To evaluate the effectiveness of exercise in the management of post-natal depression.

Searching

The authors searched Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE, PsycINFO, Science Citation Index and Social Science Citation Index, CINAHL and SPORTDiscus to March 2008. There were no language restrictions and some details of search terms were reported. The authors searched trial registries and bibliographies of relevant studies and review articles, and contacted authors for information about ongoing trials.

Study selection

Randomised and quasi-randomised trials that compared exercise interventions of at least six weeks' duration with other treatments or no treatment were eligible for the review. Eligible participants were women between four weeks and 18 months post-partum who had been diagnosed with depression using a clinical interview, screened for probable depression using a recognised tool or diagnosed by the clinical judgement of a health professional. The primary outcome was depression assessed using a validated instrument. Most included trials compared exercise (pram walking, individual programme or stretching) with usual care. One trial compared exercise plus social support with social support alone. All the interventions lasted 12 weeks. Use of antidepressants and/or psychological therapies varied between trials. All the trials used the Edinburgh Post-natal Depression Scale for screening and/or assessment of the outcome.

Two reviewers independently selected studies for the review.

Assessment of study quality

Validity was assessed using seven criteria that covered randomisation, similarity of treatment groups, eligibility criteria, blinded outcome assessment, allocation concealment, reporting of primary outcomes and use of intention-to-treat analysis. Trials were scored by the number of criteria met. Two reviewers independently assessed validity; any disagreements were resolved by consensus with a third reviewer.

Data extraction

Group means and standard deviations in depression scores were used to calculate standardised mean differences in effect size of exercise relative to the comparator for post-natal depression symptoms and weighted mean differences in effect size of exercise relative to comparator for Edinburgh Post-natal Depression Scale score. Data were extracted by two reviewers using a standard form. Authors were contacted for additional data if required.

Methods of synthesis

Studies were pooled by meta-analysis using a random-effects model. Heterogeneity was assessed using the I^2 statistic. Sensitivity analysis was used to assess the effect of excluding trials where exercise was included as a co-intervention or as part of a multi-intervention. Risk of publication bias was assessed using funnel plots.

Results of the review

Four randomised trials and one quasi-randomised trial ($n = 238$) were included in the review. Quality scores ranged from 4 to 6 (out of 7). Exercise significantly reduced post-natal depression symptoms (pooled standardised mean difference -0.81, 95% confidence interval (CI): -1.53 to -0.10) and Edinburgh Post-natal Depression Scale score (pooled weighted mean difference -4.00, 95% CI: -7.64 to -0.35). Heterogeneity was significant for both outcomes.

When a trial that included exercise as a co-intervention with social support was excluded, the effect of exercise on both outcomes was not significant and significant heterogeneity was no longer present. No evidence of publication bias was found.

Authors' conclusions

It was uncertain whether exercise reduced symptoms of post-natal depression.

CRD commentary

The review had clear inclusion criteria. The search for studies was thorough and there were no language restrictions. Risk of publication bias was assessed and no evidence of bias was found. Validity was assessed using appropriate criteria. Measures were taken to minimise errors and bias during the review process. Studies were pooled by meta-analysis. Heterogeneity was investigated and the results were reflected in the authors' conclusions. Overall this was a well-conducted and reported review. The authors' conclusions reflected the limitations of the evidence and are likely to be reliable.

Implications of the review for practice and research

Practice: The authors stated that guidance that recommended exercise should be considered as a treatment for mild or moderate post-natal depression may have been somewhat premature.

Research: The authors stated that a large trial with long-term follow up should be performed to compare exercise with standard treatments.

Funding

None.

Bibliographic details

Daley A, Jolly K, MacArthur C. The effectiveness of exercise in the management of post-natal depression: systematic review and meta-analysis. *Family Practice* 2009; 26(2): 154-162

PubMedID

19126829

DOI

10.1093/fampra/cmn101

Original Paper URL

<http://fampra.oxfordjournals.org/cgi/content/full/26/2/154>

Indexing Status

Subject indexing assigned by NLM

MeSH

Depression, Postpartum /psychology /rehabilitation; Exercise; Female; Humans; Motor Activity; Randomized Controlled Trials as Topic; Treatment Outcome; Walking /psychology; Weight Gain

AccessionNumber

12009104133

Date bibliographic record published

22/07/2009

Date abstract record published

23/09/2009

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.