A systematic review of community-based health interventions on depression for older adults with heart disease

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CRD summary
The authors concluded that evidence for the impact of community-based heart disease intervention on depression in older adults was mixed and further research was needed with different follow-up periods, common depression outcome measures and subgroup analysis by demographic characteristics. Given the possibility of publication bias and uncertainties regarding the analysis, the authors’ cautious conclusions are justified.

Authors' objectives
To evaluate the impact of community-based health care interventions on depression in older adults with heart disease.

Searching
Ageline, PsycINFO, MEDLINE, ClinicalTrials.gov, Cochrane Central Register of Controlled Trials (CENTRAL) and CINAHL were searched for studies published between 1998 and 2008. Search terms were reported.

Study selection
Randomised controlled trials (RCTs) that evaluated the impact of community-based health care interventions delivered in out-patient or home settings on depression in adults aged 64 or older with a diagnosis of heart disease were eligible for inclusion.

Included studies evaluated T’ai Chi Chuan and Chi Kung exercise, a cardiac rehabilitation exercise programme, telehealth interventions, self-disease management programmes, transcendental meditation and a secondary prevention clinic. Where stated, control conditions were usual care or education only. Intervention durations ranged from six weeks to 16 months. Participants had a range of diagnoses of cardiac disease. Mean age ranged from 64 to 80 years. Where reported, most participants were white. Depression was assessed using a variety of standardised scales suitable for an older population. The studies were conducted in USA, Sweden, Japan, UK and Finland.

Two reviewers selected the studies for review.

Assessment of study quality
Methodological quality of the included studies was assessed using Cochrane Collaboration Review of Randomised Controlled Trials criteria and graded from 1 to 10 using Gellis and Kenaley's methodological quality rating scale. Criteria were: randomisation; power analysis; prevention of performance and detection bias; explanation of treatment protocol; use of intention-to-treat analysis; description of interventionist training; and description of measures to collect data on treatment fidelity.

Two reviewers independently assessed the methodological quality of included papers.

Data extraction
Mean difference in depression outcomes between intervention and controls groups was extracted and used to calculate effect sizes (ES) with 95% confidence intervals (CI) for individual studies using Hedges g.

Two reviewers extracted the data for review.

Methods of synthesis
A pooled effect size of the intervention on depression was calculated.
Results of the review
Fifteen RCTs were included for review (n=3,545 from text and 3,602 from tables). Ten studies reported data in a format suitable for meta-analysis (n=2,600). Sample sizes ranged from 23 to 1,173. Two studies scored 7 on the validity assessment, three scored 6, four scored 5 and six scored 4 or less. Attrition rates of included studies ranged from 6% to 28%.

Community health interventions had a small effect on depression in older adults with heart disease (effect size 0.11, 95% CI -0.53 to 0.75). It was unclear whether this effect was statistically significant. Three of the seven home-base studies and two of the five outpatient-base studies found that community health interventions were significantly superior to controls for improved depression.

Authors' conclusions
Evidence for the impact of community-based heart disease intervention on depression in older adults was mixed. Further research was needed with different follow-up periods, common depression outcome measures and subgroup analysis by demographic characteristics.

CRD commentary
The review addressed a clear question. Inclusion criteria were well-defined, although broad for intervention. Several relevant databases were searched. It was unclear whether appropriate steps were taken during the search to minimise risks of language and publication biases. Validity assessment was conducted by two reviewers independently. It was unclear whether study selection and data extraction were conducted independently and so reviewer error and bias could not be ruled out. A suitable validity assessment was conducted. Study quality was variable, which may have impacted the reliability of the findings. It did not appear that tests of statistical heterogeneity were carried out and there was evidence of clinical heterogeneity between studies. Therefore, the suitability of pooling studies was unclear. The absence of confidence intervals or p-values for the main analysis made it difficult to ascertain the statistical significance of the findings. Given the possibility of publication bias and uncertainties regarding the analysis, the authors’ cautious conclusions are justified.

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

Research: The authors stated that further research was needed to evaluate the impact of community-based health intervention on depression in a more diverse population of older adults with heart disease over longer time periods. Studies should report according to CONSORT guidelines.

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