CRD summary
This review concluded that self management programmes for patients with heart failure decreased both all-cause hospital readmissions and readmissions due to heart failure. The effects on mortality and quality of life were inconclusive, although benefits in health behaviour were shown. In view of the limited reporting of study details and the validity assessment, the authors' conclusions should be treated with caution.

Authors' objectives
To evaluate the effectiveness of self-management interventions on hospital readmission rates, mortality and health-related quality of life in patients with heart failure.

Searching
MEDLINE (from 1966) EMBASE (from 1980), CINAHL (from 1982), ACP Journal Club, Cochrane CENTRAL Register and the Cochrane Database of Systematic Reviews were searched to November 2005 with no language restrictions; the search terms were reported. In addition, the bibliographies of retrieved articles were screened and experts in the field were contacted.

Study selection
Randomised controlled trials (RCTs) assessing self-management interventions for patients aged 18 years or older and diagnosed with heart failure were eligible for inclusion. To be included, studies had to assess patients hospitalised for heart failure who were enrolled in self-management programmes either during hospitalisation or at discharge. Studies assessing patients in a community setting were excluded. In the included studies, the mean age of the patients ranged from 56 to 76 years and the proportion of females from 24 to 47%.

Self-management interventions were defined as those in which patients had the primary role in managing their health condition. Studies were excluded if they assessed educational interventions, unless these explicitly reported self-management to be the primary objective of the intervention, or if physicians or nurses were involved in medical assessment or therapy optimisation. The majority of the included studies assessed educational interventions encouraging beneficial health practices, with follow-up ranging from 6 months to 1 year; one study assessed a nurse-led tailored message intervention with follow-up of 3 months. The included studies had differing degrees of medical contact as part of the intervention. Some control groups also received some educational information.

Studies assessing all-cause hospital readmissions, hospital readmissions due to heart failure, mortality, quality of life, compliance with treatment and adherence to self-management intervention were eligible for inclusion.

Three reviewers independently selected studies from full papers and resolved any disagreements through discussion.

Assessment of study quality
The validity assessment considered method of randomisation, allocation concealment, blinding, intention-to-treat analysis and method of outcome assessment.

Three reviewers independently assessed validity and resolved any disagreements through discussion.

Data extraction
Data from individual studies were used to calculate odds ratios (ORs) for dichotomous variables.

Three reviewers independently extracted the data and resolved any disagreements through discussion.
Methods of synthesis
The results from individual studies were combined using the Mantel-Haenszel fixed-effect model. Pooled odds ratios (ORs) with 95% confidence intervals (CIs) were calculated separately for all-cause hospital readmission, heart failure readmission and mortality. The results for quality of life could not be pooled in a meta-analysis because of the different variables and measurements used to assess quality of life. Therefore, quality-of-life trends were described in the text, together with health behaviours such as adherence to medical advice. Heterogeneity was assessed using the Q-test. Publication bias appears to have been assessed using a funnel plot.

Results of the review
Six RCTs (n=857) were included.

The quality of the studies was reported as being variable, with one study not reporting allocation concealment and another not reporting blinding (no further data presented). No evidence of publication bias was found (data not reported).

There was a significant decrease in all-cause readmissions with self-management programmes (5 RCTs, n=787; OR 0.59, 95% CI: 0.44, 0.80, p=0.001). The results did not differ when the study not specifying allocation concealment was removed from the analysis. There was no evidence of statistical heterogeneity in the analysis.

There was also a significant decrease in the risk of readmission due to heart failure with self-management programmes (3 RCTs, n=381; OR 0.44, 95% CI: 0.27, 0.71, p=0.001). There was no evidence of statistical heterogeneity.

There was no significant reduction in mortality with self-management programmes (3 RCTs, n=385). No evidence of statistical heterogeneity was found.

There were no significant improvements in quality-of-life scores using self-management programmes (3 RCTs, n=439). Two RCTs (n=330) reported improvement in compliance with treatment and prescribed health behaviours with self-management programmes.

Cost information
Three studies reported that self-management interventions resulted in savings in comparison with standard care, owing to reduced resource utilisation. Three studies reported that, after deducting the cost of the intervention, savings per patient in one year were US$7,515, US$1,300 and US$2,823, respectively.

Authors’ conclusions
The review found that self-management programmes for patients with heart failure decreased both all-cause hospital readmissions and readmissions due to heart failure. The effects on mortality and quality of life were inconclusive, although benefits in health behaviour were shown.

CRD commentary
The review question was clear in terms of the study design, intervention, population and outcomes. Several relevant sources were searched with no language restrictions and efforts were made to contact experts, thereby reducing the potential for publication and language bias. Authors reported no evidence of publication bias, but supporting data were not reported. Three reviewers independently selected studies, assessed validity and extracted the data, thus reducing the potential for reviewer bias and error. The validity assessment was not transparent, so it is not possible to adequately comment on the reliability of the results presented. Although there was no evidence of statistical heterogeneity, the lack of study details means it is not possible to assess whether pooling was appropriate. It also appears that some control groups received educational material, which confounds comparison with the intervention group. In addition, since all the participants were hospitalised the results may not be relevant to other settings. In view of the limited reporting of study details and the validity assessment, the authors’ conclusions should be treated with caution.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.
Research: The authors stated that further studies are needed to assess whether self-management programmes can improve mortality and quality of life, and to determine which components of self-management are essential to improve clinical outcomes.

Funding
Ontario Ministry of Health and Long-term Care; St Michael's Hospital and University of Toronto Knowledge Translation Program; a Canada Research Chair; University of Toronto Trimmer Chair in Geriatrics; Premier Research Excellence award.

Bibliographic details

Original Paper URL
http://www.biomedcentral.com/1471-2261/6/43

Indexing Status
Subject indexing assigned by NLM

MeSH
Health Status; Heart Failure /mortality /physiopathology /therapy; Patient Compliance; Patient Readmission /statistics & numerical data; Quality of Life; Randomized Controlled Trials as Topic; Self Care; Treatment Outcome

AccessionNumber
12006004216

Date bibliographic record published
03/08/2007

Date abstract record published
23/12/2008

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.