Heart failure self-management education: a systematic review of the evidence

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CRD summary
This review concluded educational interventions should be based on scientifically sound research evidence. These conclusions did not follow directly from the results and so are unlikely to be reliable.

Authors' objectives
To identify educational content and techniques that lead to successful patient self-management and improved outcomes in congestive heart failure education programmes.

Searching
MEDLINE, CINAHL and Cochrane Central Register of Controlled Trials (CENTRAL) were searched from inception to 2007 for English-language studies. Search terms were reported. References of included studies and relevant reviews were screened.

Study selection
Randomised controlled trials (RCTs) that compared a congestive heart failure self-management education programme against a control group were eligible for inclusion. Studies needed to include patient-specific outcome measures (not just knowledge) and report details of the education programme.

Education interventions were provided by nurses or though a multidisciplinary approach through differing combinations of nurses, pharmacists, dieticians, health educators and physicians. Most studies used verbal communication and presentations by the educators. A variety of education topics were covered, grouped as: knowledge and management; social interaction and support; fluids management; and diet and activity. Outcomes were categorised as satisfaction, learning, behaviour, medications, clinical status, social functioning, mortality, medical resource utilisation and cost. All studies targeted patients with congestive heart failure; some also targeted in-home caregivers. The average duration of the intervention was eight months (range three to 18 months). The number of intervention sessions ranged from one to 24. Duration ranged from five minutes to two hours. The average age of patients with congestive heart failure was 71 years; 59% were male. Included studies were conducted in Australia, Canada, Ireland, Netherlands, New Zealand, Spain, Sweden, UK and USA.

Two reviewers independently assessed titles and abstracts for inclusion. It was unclear how final decisions on inclusion were made.

Assessment of study quality
Study quality was assessed using the Jadad scale. The authors did not state how many reviewers performed the quality assessment.

Data extraction
Two reviewers independently extracted results into a spreadsheet. Disagreements were resolved through discussion.

Methods of synthesis
A narrative synthesis was used to discuss study findings, grouped according to outcome category. A $\chi^2$ analysis was used to assess the association between content topic and outcomes. Each of the 20 educational content topics covered by the studies was grouped into four categories. The authors determined whether intervention that incorporated the educational topic was significant more likely to succeed than interventions that lacked the topic.

Results of the review
Thirty-five studies (n=7,413, range 36 to 1,069) were included in the review. Fourteen studies used an appropriate method to generate the sequence of randomisation. Seven papers provided a description of withdrawals and dropouts.
None of the studies provided information on blinding.

Of a total of 113 unique outcomes assessed, 60 (53%) showed significant improvements in at least one study. At least one study showed significant beneficial effects for each of the nine outcome categories assessed. All studies that assessed learning or behaviour showed beneficial effects on at least one outcome in these categories. Some of the studies that assessed outcomes in the other categories (satisfaction, medications, clinical status, mortality, medical resource utilisation, social functioning and cost) failed to show significant beneficial effects on these outcomes.

The only education programme component associated with a significant outcome was discussion of fluids, which was associated with increased hospitalisation (p=0.01).

Cost information
Cost was evaluated as an outcome in 11 of the included studies.

Authors’ conclusions
Educational interventions should be based on scientifically sound research evidence. The education topic list developed in this review can be used by patients and clinicians to prioritise and personalise education.

CRD commentary
The review addressed a clear question and inclusion criteria were defined in terms of study design, intervention and outcome. Relevant sources were searched to identify published studies. But, no specific attempts were made to locate unpublished studies and the review was restricted to English-language studies, so there was a possibility of language and publication biases. Some steps were taken to minimise bias and errors in the selection of studies and extraction of data. It was unclear how quality assessment was undertaken. Study quality was assessed with appropriate criteria and the results reported, but these were not considered in the synthesis. The synthesis was mostly narrative and there was a lack of numerical and statistical data, which made it difficult to interpret the results. The authors’ conclusions did not follow directly from the results and so are unlikely to be reliable.

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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.