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Protocol 364

Title

A systematic review of the effectiveness of current interventions to assist adults with heart failure to comply with therapy and enhance self-care behaviours.

Reviewers

Bridie Kent (PhD, BSc(Hons), RN)\(^1\)  Emily Cull, (BN, RN)\(^2\), Nikki Phillips (PhD, MNStud., RN)\(^3\)

\(^1\) Deakin University and the Deakin Centre for Quality and Risk Management in Healthcare: a JBI collaborating centre. Contact: bridie.kent@deakin.edu.au

\(^2\) Deakin University

\(^3\) Deakin University and the Deakin Centre for Quality and Risk Management in Healthcare: a JBI collaborating centre. Contact: nikki.phillips@deakin.edu.au

Commencement Date: February 2010
Completion Date: June 2010

Background

Heart failure is a common chronic disease that is one of the leading causes of hospitalisations in many countries around the world\(^1\). It is the leading cause of hospitalisation and death in people over the age of 65\(^2,3\). Heart failure can be defined as an inability of the heart muscle to provide the body with the required amount of oxygen due to decreased effectiveness in the pumping or filling actions of the heart\(^4,2\). The treatment and management of heart failure is very complex and is highly dependent on the patient’s ability and motivation to be involved in self care activities\(^5\). The population prevalence of heart failure is increasing despite advances in treatment options\(^3,6,7\). In Australia, it is estimated that there are over 300,000 people living with heart failure and about 30,000 people are newly diagnosed with this condition each year\(^8\). The ageing population, as well as improved treatment and survival rates among patients with hypertension, has led to the effect of the heart failure population becoming older\(^3\). In Australia, the proportion of people with heart failure will double over the next 50 years\(^7\).

In addition, many patients with heart failure also suffer from multiple co-morbidities which make disease management complex and often difficult\(^3\). Problems with self management, such as poor compliance with medication and diet, rather than the deterioration of the
cardiac condition have contributed to a significant proportion of heart failure exacerbations. Horowitz, Rein and Leventhal also believe that the problems with self management have contributed to deterioration of patients with heart failure. This leads to increased hospital admissions as well as unplanned readmissions to acute care settings. However, Horowitz et al. states that there is little understanding of how self management could be established and/or improved to assist in the care of patients with heart failure. In fact, to successfully manage heart failure and maintain a quality of life, patients must make use of the recommended therapies and treatments suggested. Interventions to encourage self-management of heart failure continue to be a priority. However, to date, no review has been identified which specifically considers interventions related to heart failure self management and their effects on outcomes, such as unplanned readmissions, poor quality of life and low functional status, that can be closely attributed to poor treatment compliance or self care behaviours.

Self care can be defined as a decision making process undertaken by individuals that maintain physiologic stability and respond to symptoms as they occur. Without the appropriate self care, the condition of patients with heart failure deteriorates quickly. It is also important to note that if patients do not initiate self care and recognise early signs and symptoms they are more likely to be hospitalised. As a result it is important to teach heart failure patients the skills needed to be able to self care and manage their condition. Despite the evidence suggesting the benefit of self care, the uptake of self care behaviours is very poor in persons with heart failure. Self care behaviours that are specifically targeted include behaviours such as adherence to medications, eating a healthy diet, regular exercise, daily weighing as well as seeking assistance when they experience symptoms.

The promotion of compliance, extensive patient education and planning upon discharge from hospital can contribute to improved patient outcomes. Many different programs have been implemented over the last few years to improve outcomes. The plan of care for patients with heart failure is highly dependent upon their cooperation and participation in their own care. It is also vital to include the roles of health care professionals; physicians, nurses and other members of the multidisciplinary team.

Interventions and programs targeting the care of patients with heart failure have been shown to contribute significantly to positive patient outcomes. The outcomes achieved through these interventions include; lower rehospitalisation rates, improved quality of life and an increase in functional status. Grady, et al. state that studies to compare the relative
effectiveness of different programs or interventions are needed to establish the most beneficial plan of care in clinical practice.

Interventions that have been used by health care professionals which teach patients with heart failure to self care are mainly based on education of the patient. A recent systematic review by Boren et al.\textsuperscript{14} included 35 studies involving 7413 patients with heart failure who participated in educational interventions aimed at enhancing their ability to self manage their illness. This review focused on the content of heart failure self-management education and concluded that an evidence-based approach is essential. Furthermore they suggested an education topic list, based on the review findings for use by patients and clinicians, which may help to prioritise and also personalise the education needed. Due to heterogeneity, meta-analysis of the data was not possible; comparisons of different techniques were also not made due, primarily, to the poor quality of descriptions given by authors.

However, despite the contribution that Boren et al's review makes to the body of knowledge, there is a gap in understanding around the intervention per-se, The provision of messages, such as those delivered in the 'Heart messages' study, is one such intervention that provides tailored messages for patients related to their beliefs and provides more education in an area where the patient may be more uncertain\textsuperscript{15} but its impact or effectiveness, when compared to other interventions, is unknown or unclear. Other interventions involve providing telephone follow ups of patients from nurses trained in heart failure management\textsuperscript{4,16,17}. Of these, only one\textsuperscript{17} was included in the systematic review by Boren et al. Another intervention involves the use of video education about heart failure to assist in compliance with treatments and promotion of self care\textsuperscript{18}. Many other interventions have been investigated, these include; heart failure clinics, home visits from a heart failure nurse and day hospital services\textsuperscript{19}.

Despite the development of these interventions and studies that show their significant impact on self care behaviours and improved patient outcomes, the prevalence of heart failure hospitalisations is increasing with up to 40\% of avoidable readmissions\textsuperscript{30}. Furthermore, there has been a need identified for further studies that will help determine which intervention or components of an intervention should be incorporated into a disease management program to optimise clinical outcomes for patients with heart failure\textsuperscript{3}. Thus, for these reasons, this review is both timely and necessary.

**Review question and objectives**

This review will systematically examine the evidence to answer the question:
• What are the most effective interventions for helping adults with heart failure comply with therapy and enhance self care behaviours?

The key objectives to be addressed arise from the literature and are:

1. To investigate if one intervention (or a combination where appropriate) is more effective than another in improving self care behaviours as reflected in reductions in hospitalisations and unplanned readmissions.

2. To investigate if one intervention (or a combination where appropriate) is more effective than another in improving the quality of life of the adult with heart failure.

3. To investigate if one intervention (or a combination where appropriate) is more effective that another in enhancing functional status of the adult with heart failure.

4. To investigate if one intervention (or a combination where appropriate) is more effective that another in enhancing compliance with treatments and reported self care over the longer term i.e. over 3 months or longer.

Inclusion criteria

Types of participants

The review will consider studies that include adults diagnosed with heart failure based on documentation by the health care provider in the patients medical records or experienced typical signs and symptoms of heart failure corresponding to New York Heart Association (NYHA) class II-IV. The review will consider studies that include adults (aged 18 and above) with heart failure of any age group; despite the majority of heart failure patients being over the age of 65, there are some people under the age of 65 with heart failure. All participants must have had a recent admission to hospital with the Heart failure diagnosis and may be community living or a resident in a care home setting.

Types of Interventions

The review will consider studies that evaluate interventions that help people with heart failure to self care. Self care behaviours that will be specifically targeted include: adherence to medications, maintaining a healthy diet, daily weighing, reducing salt intake, recognising symptoms and contacting health professionals when assistance may be required. Such interventions include telephone based interventions which involve the frequent follow up via telephone of patients with heart failure to assist with self care behaviours, cardiac clinics, home visits from a trained heart failure nurse, video education, day hospital services and any
other educational interventions that target self care behaviours. These interventions are often initiated or led by nurses but they may be conducted by a variety of health professionals as part of multidisciplinary care.

**Type of Outcomes**

This review will consider studies that include the following outcome measures:

- self care behaviours which impact on the number of hospitalisations and readmissions
- number of hospitalisations and unplanned readmissions
- health-related quality of life of the adult with heart failure, measured by scales such as the EuroQoL scale
- functional status; this can be measured using a variety of scales – those used in heart failure studies include the Self-Care of HF Index (SCHFI), the Heart failure Self-care Behaviour scale or the European Heart failure self care Behaviour scale (EHFSBCS)
- self-reported compliance with treatments and self care over 3 months or more.

**Types of Studies**

The review will consider any randomised controlled trials (RCT), in the absence of RCTs other research designs, such as non-randomised controlled trials and before and after studies, will be considered for inclusion in a narrative summary to enable the identification of current best evidence regarding.

**Search Strategy**

The search strategy aims to find both published and unpublished studies for the time period 2000 to 2010. Only studies reported in English will be included. A three-step search strategy will be utilised in each component of this review. An initial limited search of MEDLINE and CINAHL will be undertaken followed by analysis of the text words contained in the title and abstract, and of the index terms used to describe article. A second search using all identified keywords and index terms will then be undertaken across all included databases. Thirdly, the reference list of all identified reports and articles will be searched for additional studies.

The databases to be searched include:

Medline,
EMBASE
CINAHL,
Psyc Info,
Cochrane Library
JBI
PubMed
Clinical Trials
Informit Health Collection

Grey Literature

- MEDNAR
- Dissertations International
- Google Scholar

Initial keywords to be used will be:

- Heart failure
- Heart failure therapy
- Heart failure nursing
- Heart failure, congestive
- Cardiac patients
- Cardiac failure
- Self care
- Self management
- Education
- Heart failure prevention and control
- Intervention

Assessment of methodological quality

Papers selected for retrieval will be assessed by two independent reviewers for methodological validity prior to inclusion in the review using standardised critical appraisal
instruments from the Joanna Briggs Institute Meta Analysis of Statistics Assessment and Review Instrument (JBI-MAStARI) (Appendix I). Any disagreements that arise between the reviewers will be resolved through discussion, or with a third reviewer.

Data Collection

Data will be extracted from papers included in the review using the standardised data extraction tool from JBI-MAStARI (Appendix II). The data extracted will include specific details about the interventions, populations, study methods and outcomes of significance to the review question and specific objectives.

Data Synthesis

Quantitative data results will, where possible be pooled in statistical meta-analysis using the JBI-MAStARI. Heterogeneity will be assessed using the standard Chi-square. Where statistical pooling is not possible the findings will be presented in narrative form.

Conflicts of interest

No conflicts of interest noted.

Acknowledgements

The reviewer’s would like to acknowledge Eastern Health for their support during this period as they have been very understanding of a demanding work load during Emily’s honours study. They would also like to thank Liz Marrs, Deakin University librarian, for her valuable assistance.

References


Appendices
Appendix I
JBI Critical Appraisal Checklist for Experimental Studies

Reviewer ___________________ Date __________
Author ___________________ Year _________ Record Number _______

1. Was the assignment to treatment groups truly random?  Yes ☐ No ☐ Unclear ☐

2. Were participants blinded to treatment allocation?  ☐ ☐ ☐

3. Was allocation to treatment groups concealed from the allocator?  ☐ ☐ ☐

4. Were the outcomes of people who withdrew described and included in the analysis?  ☐ ☐ ☐

5. Were those assessing outcomes blind to the treatment allocation?  ☐ ☐ ☐

6. Were the control and treatment groups comparable at entry?  ☐ ☐ ☐

7. Were groups treated identically other than for the named interventions?  ☐ ☐ ☐

8. Were outcomes measured in the same way for all groups?  ☐ ☐ ☐

9. Were outcomes measured in a reliable way?  ☐ ☐ ☐

10. Was appropriate statistical analysis used?  ☐ ☐ ☐

Overall appraisal: Include ☐ Exclude ☐ Seek further info. ☐

Comments (Including reasons for exclusion)
## Appendix II: Data Extraction Form (Quantitative Data)

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**Results**

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**Authors Conclusion**

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**Reviewers Conclusion**

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Bridie Kent
Date: 04/02/2010 Version: 1.0
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