Title:
Health Failure Self-Management Support

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Session Title:
Research Poster Session 1
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References:
Abstract Summary:
The purpose of this abstract is to summarize a literature review on current approaches and outcomes of heart failure disease management support programs, with a focus on multidisciplinary teams, telemonitoring, and patient adherence.

Learning Activity:

<table>
<thead>
<tr>
<th>LEARNING OBJECTIVES</th>
<th>EXPANDED CONTENT OUTLINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Summarize the current literature on heart failure disease management support programs.</td>
<td>a. Review and synthesize the literature. i. Current data on patient outcomes. ii. Evidence-based recommendations on management of heart failure.</td>
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<tr>
<td>2. Identify three themes in the literature that characterize findings regarding self-management support programs.</td>
<td>a. The intensity of the multidisciplinary team approach is not necessarily better. b. Telemonitoring alone is not an effective self-management support tool. c. Patient adherence is important for improved clinical outcomes and should be a focus of self-management support programs.</td>
</tr>
</tbody>
</table>

Abstract Text:

**Purpose:** Heart disease is the leading cause of death for both men and women in most ethnicities in the United States. It accounts for one in four deaths and costs $32 billion annually (CDC, 2016). Heart failure (HF) is the final common pathway for heart disease and all cardiovascular diseases and 50% of individuals diagnosed with HF die within five years (CDC, 2016). Despite the advances in medical knowledge and technology, HF continues to be a major burden to the healthcare system due to the high rates of morbidity, mortality, and cost. This literature review synthesizes current approaches and outcomes of HF disease management support programs, with a focus on multidisciplinary teams, telemonitoring, and patient adherence. The goal of this review is to identify components of HF self-management support programs that can be incorporated into the health systems to improve key patient outcomes, including hospital readmissions and mortality. A second focus is to identify gaps in the literature that will be explored in future research.

**Methods:** The literature review was conducted using relevant electronic databases and search engines, including, PubMed, CINAHL Plus, and Web of Science, to locate appropriate articles for “health failure self-management support” or “self-management support for heart failure.” Search filters were set for Humans, English language, and date range of five years. However, some older articles were later discovered in the readings of original research as landmark studies and were also included. The search criteria yielded 429 articles, in which the following keywords were used to narrow down the search: heart failure, chronic disease model, self-management support, self-management, self-care, disease management, disease management program, quality of life (QOL), outcome measures, telehealth, and telemonitoring. From the 429 articles, 43 were selected for analysis based on the above criteria.
Results: The intensity (number of clinic visits and provider contacts) of the multidisciplinary team approach is not necessarily better. The landmark study by Rich et al. (1995) highlighted the significant impact of nurse-led, multidisciplinary disease management intervention for HF patients by demonstrating improvements in readmission rates, quality of life, and cost (Rich et al., 1995). Since then, many programs have adopted evidence-based practices by instituting a comprehensive education plan for patients prior to discharge, and adopting ambulatory, multidisciplinary, self-management support programs (Otsu & Moriyama, 2011, 2012). Despite the general agreement that HF disease management programs work in improving outcomes, some questions remain about operationalizing the interventions for all patients (Desai, 2012). Specifically, the lack of standardized definitions and the variability of program design limit the generalizability and actionable evidence for self-management program development (Sochalski et al., 2009). Furthermore, many of the trials are not statistically powered to evaluate clinical outcomes, and consequently, large numbers of studies are aggregates of individual or single site trials (Desai, 2012).

While telemonitoring is an emerging trend in health care delivery and has potential to be cost-effective, telemonitoring alone is not effective as a self-management support tool in the context of HF. Most HF self-management support programs require face-to-face follow-ups with an outpatient provider and/or care coordinator (Fonarow et al., 2010). However, this becomes a limitation for some patients due to time, access, and cost. In the last decade, Internet Technology (IT) solutions have become popular health care tools for patient self-management. Nonetheless, all the latest HF trials of IT-based interventions have revealed mixed results in patient outcomes. Numerous systematic reviews continue to show improved outcomes in mortality and hospitalization (Inglis, Clark, McAlister, Stewart, & Cleland, 2011; Inglis, Clark, Dierckx, Prieto-Merino, & Cleland, 2015), but these studies tend to be in single centers with smaller sample sizes (Ong et al., 2016). The larger RCTs on telemonitoring in the United States (1653 and 1437 patients) and Europe (710 patients) have shown little or no significant benefits (Chaudhry et al., 2010; Koehler et al., 2011; Ong et al., 2016), but patient adherence rates seem to be low (ranges 40-60%) with device usage.

Patient adherence to self-management recommendations is important for improved clinical outcomes. Patient adherence is a problem for many self-management support program studies. Unfortunately, evaluating the influence of patient adherence on other variables, such as family support, psychosocial factors, and disease severity scores, has been minimal (Fountain, 2016). Most chronic disease management programs are designed to increase adherence to evidence-based treatment therapies because there is evidence that patients’ knowledge and acceptance of their condition improved their adherence to recommended. Providing too much information at the time of diagnosis is not helpful to patients because they experience disruption and need time to process their diagnosis (Desai, 2012). Some patients require seven months to process the information given to them, which can be an issue for patients’ in following through with discharge instructions and follow-up appointments (Otsu & Moriyama, 2011). Therefore, it is important to provide patients with ongoing self-management support and individualized evidence-based treatments for improved adherence.

Conclusion: The focus of this review was to synthesize the state of the science regarding effectiveness of HF self-management support programs with potential to be incorporated into health systems and to improve patient outcomes, such as, hospital readmissions and mortality. However, the literature review yielded mixed results. Numerous studies failed to improve key patient outcomes, including readmissions and mortality. These results may be due to multiple causes, including low adherence rates to the recommended therapy, the type of technology used, and lack of patient engagement in self-care. Future research should identify sub-populations of HF patients, who are most likely to benefit from specific self-management support interventions.

This review led to the identification of several gaps in the existing literature. Specifically, none of the studies in this review looked at risk tools to identify individual HF patient’s likelihood to respond positively to specific self-management support interventions, such as telemonitoring and to test stratification (high to low responsiveness). Most studies did infer that stratification is needed for decision support and targeted self-management support interventions, but none really suggested specific study designs or tools. Future
studies should investigate risk stratification of patients based on the combination of medical and social scores as an approach to 1) identify specific subgroups who are likely to benefit from specific self-management support interventions, and 2) test the effect of stratification strategies on improvements in patient outcomes.