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Care-giver perspectives

Efficacy of a social support and problem-solving intervention on heart failure self-care: A pilot study

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ABSTRACT

Objective: The purpose of this study was to examine the preliminary effects of a coping partnership intervention comprised of social support and problem-solving on HF self-care maintenance, management, and confidence.
Methods: A 3-group randomized controlled pilot study was conducted. The intervention group received 1 home visit, weekly (month 1), and biweekly (months 2 and 3) telephone calls. The attention group received telephone calls starting at week 2, following a similar pattern. The control group received usual care only. The Self-care of Heart Failure Index, was administered at baseline, 5, 9, and 13 weeks. Linear mixed modeling examined intervention effect on study outcomes.
Results: A total of 66 participants completed the study. The participants were mean age 61 years; 54.2% male; 56% Non-Caucasian; and 43.9% New York Heart Association HF Class II. Significant treatment-by-time interaction effects were noted for self-care maintenance ($F = 4.813$; $p = 0.010$) and self-care confidence ($F = 4.469$; $p = 0.014$). There was no significant treatment-by-time interaction effect on self-care management.
Conclusions: Coping partnership interventions that strengthen support and social problem- solving may improve self-care maintenance and confidence in individuals with HF.
Practice implications: Clinicians should consider including these components in HF patient education and clinical follow-up.

1. Introduction

Heart failure (HF) remains a significant burden on the health care system worldwide, with approximately 26 million individuals living with HF [1]. Total HF treatment-related costs have surpassed $30 billon dollars and are expected to increase to over $69 billion dollars by 2030 in the US alone [2]. While HF-related mortality rates have decreased, 50% of individuals diagnosed with HF continue to die within 5 years [2]. Hospitalization rates remain relatively unchanged and are highest in those previously hospitalized for HF [2]. In fact, over half of HF re-admissions are due to disease exacerbation and a direct result of poor self-care [3], illustrating the need for continued efforts to enhance self-care in this population.

Often viewed as a complex process, HF self-care is comprised of physical and cognitive activities and behaviors which influence how individuals maintain physiological well-being and perceive and manage symptoms in a real-world environment. Three successive processes are involved in HF self-care and include maintenance behaviors (e.g., medication and diet adherence, exercise), symptom perception (i.e., how one perceives symptoms and their associated threat), and symptom management (i.e., how one responds to symptoms) [4]. These processes are carried out individually and in consultation with others (e.g., health care providers, family) [4,5]. Several psychosocial factors influence HF self-care (e.g., personal characteristics, environment, knowledge, and experience), with comorbidities, limited physical functioning, and cognitive impairment further complicating this process [4]. Self-care confidence is similar to self-efficacy and refers to an individual's confidence in their ability to perform various self-care activities [6]. Studies suggest that self-care confidence is a moderator or mediator of HF self-care, rather than a discrete component of the process [6], and may actually impact self-care maintenance and management by acting in this capacity [6–8].

However, maintaining adequate self-care is challenging and individuals often encounter barriers which impede self-care (e.g., forgetting to monitor symptoms, failure to adhere to low- sodium

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diet, and knowledge deficit) [9]. Although a variety of interventions have been developed to enhance HF self-care, effectiveness of these interventions vary. Use of motivational interviewing appears to enhance HF self-care confidence [10,11]. Teaching patient-caregiver dyads how to support each other's specific roles may also influence self-care confidence and the motivation to adhere to medication and diet regimen (i.e., maintenance behaviors) [12]. However, cognitive behavioral therapy does not appear to influence either self-care maintenance behaviors or confidence [13]. Thus, more research is needed to explore the effectiveness of other interventional strategies to improve HF self-care.

Given the challenging aspects of HF self-care and frequency of acute episodes requiring hospitalization [2,9], interventions which include coping resources (i.e., social support and problem-solving) may enhance HF self-care. Studies have identified social support as an important coping resource which influences HF self-care [14,15]. Individuals reporting more social support maintain better self-care behaviors [14], and those participating in peer support groups initiate or become more consistent with self-management behaviors [15]. Problem-solving abilities also influence HF self-care [14,16]. Those who use more adaptive problem-solving strategies and actively engage in problem-solving report better self-care behaviors [14,17]. Although HF interventions commonly include social support [18], few studies incorporate problem-solving components [18,19], but are primarily comprised of educational and motivational elements [10,11,15,18,20–22]. Further, problem-solving content, when included, is often standardized [18,19] and does not address individual HF-related problems. Thus, tailored interventions targeting social support and problem-solving may improve HF self- care.

The Coping in Heart Failure (COPE-HF) Partnership intervention was developed based upon the Theory of Stress, Appraisal and Coping [23] and included select coping resources and strategies. Coping resources (i.e., social support [belonging and appraisal support]) [24] and strategies (i.e., social problem-solving [problem orientation and rational problem-solving]) [25] are used by individuals to reduce or manage stressful situations [23]. Social support acts as a buffer to stressful situations [24], while social problem-solving involves affective, behavioral, and cognitive processes that influence how individuals define, view (i.e., problem orientation) and solve problems (i.e., problem-solving style) [25]. Daily disease related stressors requires adequate coping [23]. Individual characteristics influence the use of coping resources and strategies [23]. The provision of belonging and appraisal support, plus problem- solving training and reinforcement of rational problem-solving strategies may improve HF self- care (Fig. 1).

The purpose of this randomized controlled pilot study was to determine the preliminary effectiveness of the COPE-HF Partnership intervention on HF self-care in patients with HF. The primary aim of this study was to evaluate intervention effectiveness on HF self-care maintenance, management, and confidence at 13 weeks.

2. Methods

The COPE-HF Partnership pilot study was a prospective, 3-group, randomized, controlled study with repeated measures at baseline, 5, 9, and 13 weeks. The Florida State University Institutional Review Board and participating sites approved all study protocols and informed consent. The target recruitment size was 90 participants and was based upon attrition rates reported in previous studies ($\geq$35%) and the number of participants needed to provide trend data in preparation for a larger, more adequately powered clinical trial [26–28].

Recruitment and enrollment occurred between April 2015 and February 2016. Potential participants were undergoing medical treatment for HF at two North Florida hospitals which serve a predominantly rural 5-county area. Staff nurses on medical-telemetry floors identified eligible participants and a trained research nurse explained the study, conducted inclusion/exclusion screening, and obtained informed consent. Criteria for inclusion/exclusion are shown in Table 1. All potential participants were screened for cognitive impairment using the Six Item Cognitive Impairment Test (6CIT), with scores >8 suggesting possible cognitive impairment [29] and for decreased life expectancy (<12 months) using the Charlson Comorbidity Index [30].

Those who met the inclusion criteria and agreed to participate were enrolled in the

study and provided written informed consent. Baseline data were gathered via self-report by a trained research nurse prior to randomization. Following baseline data collection, participants were randomly assigned to one of three groups using a computerized table of random numbers to assign participants to groups. The intervention phase began one week post hospitalization and lasted 12 weeks. The attention intervention began 2 weeks post hospitalization and continued through 12 weeks. All groups received usual care, with the control group receiving usual care only.

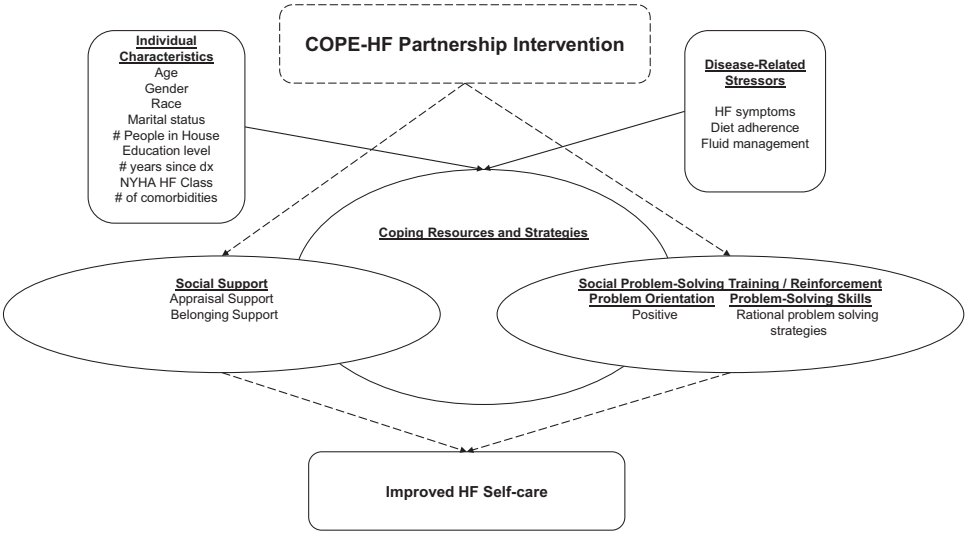

Fig. 1. Theoretical Framework based upon [23].

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