THE ROLE OF EMPOWERMENT IN HEART FAILURE AND ITS EFFECTS ON SELF-MANAGEMENT, FUNCTIONAL HEALTH, AND QUALITY OF LIFE

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ABSTRACT

RESEARCH PAPER: The Role of Empowerment in Heart Failure and Its Effects on Self-Management, Functional Health and Quality of Life

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Heart Failure impacts millions of patients daily, resulting in impaired quality of life and billions of dollars spent on treatment. To decrease hospital readmissions and enhance patient quality of life a patient sense of control must be attained. Empowerment can lead to a sense of control; enabling patients to actively participate in goal setting and attainment, seek available resources for self-management, gain a perception of functional health, and achieve an acceptable level of quality of life. The purpose of this study is to evaluate the effects of a nurse-delivered empowerment intervention on the clinically and theoretically relevant outcomes in patients with Heart Failure; including purposeful goal setting, self-management through resource utilization, and perceptions of functional health and quality of life. This descriptive comparative repeated measures design study is a modified replication of a study by Shearer, Cisar, and Greenburg (2007). The framework is based on Roger’s Science of Unitary Human Beings person-environment process. Roger’s theory proposes that empowerment can lead to purposeful participation in change. As nurses educate and care for patients they build patient empowerment by
assisting with development and achievement of outcomes consistent with the individual’s values. The study will take place with patients recruited from a Heart Failure Clinic based at a 220-bed Midwestern community hospital. The anticipated sample will include 50 Heart Failure patients with 25 receiving the proposed intervention and 25 receiving traditional Heart Failure education and follow-up. Evaluation of both groups will be performed at baseline and twelve weeks utilizing the SF-36 questionnaire to measure participants’ functional health, The Self-Management of Heart Failure Scale to measure participants’ abilities to maintain illness stability through symptom management and The Minnesota Living with Heart Failure questionnaire to measure quality of life. Re-admission rates will be attained from clinic records. Anticipated results in patients receiving the proposed intervention will show improved self-management, perceived improved functional health and quality of life, and decreased hospital re-admission rates.
Chapter I

Introduction

Heart failure has become a huge public health concern in the United States and is expected to continue to grow as baby boomers age. Reports from The Centers for Disease Control (CDC) (2012) identify that currently 5.8 million United States citizens are diagnosed with heart failure. Annually, 670,000 are diagnosed with this disabling disease with a reported cost of 39.2 billion dollars in 2010 to the United States in health care services, medications, and lost productivity (CDC, 2012). Duffy, Hoskins, and Dudley-Brown (2009) reported re-hospitalizations related to heart failure as the “single most costly health expenditure in the United States” (p. 56). Heart failure also carries a high death toll with 282,754 deaths reported in 2006 (CDC, 2012). Multiple signs and symptoms can lead to difficulty with self-management and repeated hospital readmissions due to exacerbation of the disease. Britz and Dunn (2010) reported significant associations between self-care deficits and negative outcomes among patients with heart failure. Quality of life then declines. The ability of patients with heart failure to provide competent self-care is crucial for a positive perception of overall quality of life (Britz & Dunn, 2010).
Background and Significance

Quality of life is something that is often poorly perceived by patients with heart failure. Heo, Lennie, O’Kali, and Moser (2009) reported that the multitude of physical and emotional symptoms associated with heart failure can lead to limitations in daily social and physical activities, resulting in a poor quality of life. Dyspnea, edema, decreased ability sleeping with resulting fatigue, discomfort and chest pain with resulting inability to tolerate activity, frustration, lack of a sense of control, and depression are common signs and symptoms patients with heart failure suffer. While quality of life is a subjective measure, it can have a huge impact on daily life and has been reported to be related to increased hospitalization and mortality rates (Heo et al., 2009). A sense of control is necessary to enhance perceptions of quality of life.

Education, resources, and support can provide patients with chronic illnesses with the knowledge, abilities, and sense of control to better self-manage their disease state. Empowerment measures have been identified as possibly leading to a sense of control. Shearer, Cisar, and Greenberg (2007) reported that “a patient empowerment approach to the management of chronic disease has been suggested as one that may nurture both purposeful participation in goal attainment and self-management in individuals with chronic illness” (p. 160). Empowerment involves self and environment change through pattern recognition and inner resource engagement that can lead to well-being (Shearer et al., 2007). Adherence to treatment plans can lead to lesser symptoms and improved perceptions of functional health, thus leading to improved perceptions of quality of life.
Problem Statement

The symptoms that patients with heart failure experience can significantly affect an individual’s functional status and quality of life and lead to frequent costly hospital readmissions. While medical management may be sufficient a lacking piece of overall patient care often includes support and education of self-management techniques that promote adherence to treatment. More research is needed to identify interventions that can successfully lead to the empowerment patients with heart failure need to develop self-management techniques that can ultimately improve their perceived functional status and quality of life.

Purpose of the Study

The purpose of this study is to evaluate the effects of a nurse-delivered empowerment intervention on the clinically and theoretically relevant outcomes in patients with heart failure; including purposeful goal setting, self-management through resource utilization, and perceptions of functional health and quality of life. Through a telephone empowerment intervention heart failure nurses will strive to enhance patient participation in self-management that will lead to achievement of mutually determined health goals and perceived improvements in functional health and quality of life.

Theoretical Framework

Rogers’ Science of (Man) Unitary Human Beings (1970) person-environment process will be utilized as a theoretical framework.
Definition of Terms

Definitions of quality of life are subjective and based on the individual’s perceptions about how their lives are affected by a clinical condition (Heo et al., 2009). The key dimensions of quality of life include emotional, physical, social, and physical causal factors. Illness can cause physical symptoms such as shortness of breath or pain, social factors such as the inability to socialize with others, mental factors such as memory clouding or loss, or emotional factors such as feeling like a burden to others. When any one or more of these factors are present the individual’s quality of life can be perceived as being affected. According to Coelho et al. (2005), health-related quality of life is a measurement of “the illness experience as opposed to the disease”, and reflects the patient’s point of view in opposition to professional medical knowledge of the reality of the disease.

Functional status is defined as the ability to carry out activities of daily living, including participation in life situations and social events (National Committee on Vital and Health Statistics, 2000). Functional status is inclusive of such activities such as being able to bathe independently, prepare meals, shop, drive, participate in family gatherings or attend a community event. When an individual cannot carry out these activities due to physical, developmental, behavioral, emotional, social or environmental factors they encounter functional limitations (National Committee on Vital and Health Statistics, 2000).

Self-Management or self-care is defined by Gardetto (2011) as an “individual’s ability to undertake and manage day-to-day tasks, inherent lifestyle changes, physical
symptoms, and the psychosocial consequences of health and well-being over the lifetime of an illness” (p. 41). Gardetto (2011) also further defines ability as “problem solving, decision making, resource utilization, formation of patient-provider partnerships, action planning, and tailoring of daily activities” (p. 41). Self-management is a measurement that can be affected by family intervention however, Gardetto (2011) notes that the ultimate influence on self-management comes from the responsibility the patient takes for their illness care. American Heart Association recommended behaviors for heart failure management are used routinely as a basis upon which self-management is measured in heart failure patients and will be individualized with each participant as self-management goals are determined.

Limitations

Possible limitations to this study are anticipated to be the sample size as affected by attrition, the effects of co-morbidities on participants, and possible difficulties with participants understanding the Power as Knowing Participation in Change Tool VIII (PKPCT). Due to the study location being limited to one hospital and heart failure clinic it may be difficult to find a sufficient number of participants. The number of participants may be affected by attrition due to increased severity of illness, cessation of participation at the clinic, or death. Co-morbidities may affect participants’ ability to distinguish their heart failure-related functional and self-management limitations and the effects of the heart failure on their quality of life. The original study by Shearer et al. (2007) that this research project is based upon found that some participants might have had difficulties in understanding directions for completion of the PKPCT and that concern may also extend
to this study. The addition of the Minnesota Living with Heart Failure questionnaire (MLWHF) and identification of New York Heart Association classification at the end of the study are intended to reduce the limitations found in the study by Shearer et al. (2007).

Assumptions

1. Nurses have the knowledge and skills to provide education and support that can lead to patient empowerment.
2. Patients with heart failure have the desire to improve their functional health and quality of life.

Summary

The incidence of heart failure in the United States continues to grow with devastating effects on human lives and the healthcare system. Development of self-management by those individuals with heart failure is an area that has traditionally not received much attention and yet has been found to have a positive influence on reducing the problems these patients experience. Nurses are eminently well-suited, through their theory and evidence-based practice-driven knowledge and skills, to provide interventions that can empower patients with heart failure to develop the self-management skills necessary to adhere to treatment regimens. Once treatment adherence occurs, improved perceived functional status can result in improved perceptions of quality of life and decreased hospitalizations.
Chapter II

Literature Review

Theoretical Framework

Rogers’ Science of (Man) Unitary Human Beings (1970) person-environment process will be utilized as a theoretical model for this study. The (Man) Unitary Human Being is identified by Rogers (1970) as a continuous, undividable, all encompassing energy field that exhibits patterns and characteristics individual to that entire being and is unable to be identified from individual parts. Rogers (1970) identifies the environment as also being a continuous, undividable and all encompassing energy field that exhibits identifiable patterns and is essential to the human field. Both the unitary human being and the environment are constantly exchanging energy. The focus of nursing is the result of what happens during that energy exchange. Patterns occur and are re-patterned with change. Health and illness are part of the same continuum. As life occurs the patterns of health and illness emerge and can be influenced by nursing in regard to assistance with re-patterning. Holism encompasses the bio-psycho-social-cultural-spiritual aspects of a human being as a unitary whole and Rogers identifies the environment as part of that unitary whole because of the energy exchange occurring between both humans and environment. Nurses strive to provide care in a holistic manner. All information gained by nurses from experiences with or perceptions about a patient result from the nurses’ identification of the patterns occurring between the individual and their environment.
Existence and knowing are linked through deep connections of awareness, intentionality, and interpretation. A patient with heart failure may be aware of their disease process and may be aware that whatever actions they do can have an effect on their overall state of wellness. The patient with heart failure may not however, believe that they have any control over their disease state, dependent upon the interpretation they make of it. Pandimensionality is inclusive of naturally occurring energy pattern changes and the processes of becoming more aware of those changes. Intentionally participating in a mutual process with an overall potential of developing new energy patterns, or in the case of the patient with heart failure changes in self-management behaviors, are representative of pandimensionality.

In order to become empowered a human being must purposefully participate in change. Through purposeful participation with nurses a patient can make changes in their self-management behaviors that can lead to achievement of mutually determined self-management goals (Shearer et al., 2007; Rogers, 1970). The attainment of self-management goals can then lead to perceptions of improved functional health and quality of life. Shearer et al. (2007) explained that empowerment is a relational and inherent process when utilized with a patient, encompassing more than providing information. When empowerment is utilized nursing brings knowledge to the patient and assists the patient in identifying opportunities and methods of change consistent with the individual’s values and goals (Shearer et al., 2007). Focus on how the patient wants to change is essential in achieving change. Knowing and intentional participation in change
will only occur if the patient feels empowered to make the changes that will work with their values and environment.

**Self-Care Beliefs and Quality of Life**

A need for creative nursing-driven interventions resulting in improved self-care behaviors and decreased readmissions for heart failure patients due to the high costs to quality of life and extensive burden on healthcare was identified as the initiative for a study by Sethares and Elliot (2004). A tailored message intervention that would decrease readmission rates, improve reported quality of life, and change beliefs of self-care in persons with heart failure served as the purpose of this study. The Health Belief Model was chosen as the framework.

The northeast United States served as the setting for this randomized controlled trial. The sample population included adults admitted to a community hospital with a chronic heart failure primary diagnosis over a one year and two month period. Inclusion criteria for the sample of 70 consisted of a primary diagnosis in the medical record of either systolic or diastolic heart failure as confirmed by symptom presence for three months or longer, echocardiography for ejection fraction confirmation, freedom from serious cognitive deficits, English speaking, and anticipated return to a community setting. The subjects were asked about their current level of activity and when symptoms occurred in order to determine heart failure stage per the New York Heart Association (NYHA) criteria. The treatment group consisted of 33 subjects while the control group included 37. Mean age of subjects was 75 with a NYHA classification of III, ejection fraction of 41%, an average of three co-morbidities, and an 11th grade education. The
majority of subjects in both groups were widowed or married and white while gender was almost evenly split between females and males. Sethares and Elliot (2004) found both groups to be almost equal as to receiving VNA (Visiting Nurse Association) services.

Sethares and Elliot (2004) used a self-developed tool for demographic data and medication information obtained from subject interviews and medical record review. The total number of admissions for heart failure for both groups was performed to determine readmission rates. The nonparametric Kruskall-Wallis statistic was utilized to determine differences in heart failure readmission rates between control and treatment groups because of data skewing. The Minnesota Living with Heart Failure (MLHF) questionnaire was used to determine quality of life as based on subject perceptions. For 83 of the subjects with left ventricular dysfunction heart failure significant correlations between MLHF scores and the NYHA functional classifications were found, thus supporting construct validity. Cronbach’s alpha supported internal consistency reliability for the MLHF. Repeated-measures analysis of variance (ANOVA) was performed to compare the quality of life scores at baseline and one month for both groups. The investigators utilized Bennett’s Health Belief Scales to measure benefits and barriers of use of heart failure medications, sodium-restricted diet, and fluid overload self-monitoring. These scales were found to be internally consistent through evaluation with a convenience sample. Lower consistency was found for the dietary barriers subscale. The investigators performed a confirmatory factor analysis on the dietary and medications scales with a group of 234 individuals with heart failure and found a 2-factor solution resulting from the analysis that accounted for 41% of the variance with the
dietary scale (Sethares & Elliot, 2004). During three time points a repeated-measures ANOVA was conducted on the benefits and barriers scores as a measure to determine any significant differences in benefit and barrier beliefs over time.

Subjects were recruited during hospitalization after their heart failure had stabilized. Interviews were conducted with the hospitalized subjects to complete the MLHF and Health Belief Scales and identify demographic data while medical records and hospital databases were reviewed for additional demographic and medication information. A follow-up visit in the subjects’ homes seven to ten days after hospital discharge was performed to re-interview the patient with the Health Belief Scales. A tailored message intervention that focused on perceived benefits and barriers to self-care of heart failure was provided for all subjects during their hospitalization, at one week, and one month post-hospitalization visits unless the patient scored via a benefit question a four or above or below three for a barrier question; scoring indicative of presumed understanding. Medications were reviewed for changes and analyzed to determine if those changes might lead to exacerbations requiring readmission. A final follow-up visit at one month post-hospital discharge was performed with medication reviews and evaluation of quality of life scoring.

Sethares and Elliot (2004) utilized a blinded data collector to interview subjects via telephone at one and three months using the MLHF tool to determine if any readmissions to hospitals had occurred and to evaluate quality of life. Control group subjects received standard care consisting of unit-based discharge teaching with half receiving visiting nurse referrals.
Findings revealed that group assignment had no significant relationship to heart failure readmission rates even though the subjects in the treatment group had fewer readmissions than the control group. Sethares and Elliot (2004) identified readmission rates for both groups to be comparable to other studies and related readmissions to the fact that it often takes time for fluid stabilization and medication adjustment. Identification was made that close home monitoring and visiting nurse care can help in these areas and the investigators noted that home follow-up was slightly more than half for study subjects. Readmission rates were not found to be significantly affected by the tailored message intervention. Since medical management of heart failure patients is crucial, the investigators concluded that educational interventions may not prevent readmission unless appropriate medical management is also provided. Both groups were found to have improved quality of life at one month; comparable with findings from other studies.

One month follow-up revealed the highest scoring in benefits of medications, diet and self-monitoring while barriers were identified lowest at one month. This proved to be the greatest finding in the study and supported Sethares and Elliot (2004) in their hypothesis regarding these variables.

Conclusions were that a tailored message intervention can change the perceived benefit and barrier of self-care in a group of individuals with heart failure. This type of intervention was found to be less effective in regard to readmission rates or quality of life. Sethares and Elliot (2004) identified that more research with larger sample groups is
necessary if better determination of effectiveness of such an intervention with varied individuals with heart failure is to be achieved.

Multiple factors can cause non-adherence with prescribed treatment for patients with heart failure. These factors can then lead to disease exacerbation and costly hospital admissions and readmissions. Examination of the lived experience of heart failure patients as they attempted to adhere to a prescribed regimen of care served as the purpose of a phenomenological qualitative study by Scotto (2005).

An outpatient heart failure clinic served as the setting for this study with a sample of fourteen patients. The group consisted primarily of married males with a mean age of 63. Time frame for diagnosis was an average of four and a half years. Three lived alone with the majority being retired. All participants had experienced at least two hospitalizations for heart failure. Those individuals, regular participants in evaluation and education at the clinic, who were agreeable in sharing their heart failure experiences with Scotto (2005), were approached to participate. Education provided at the clinic included symptom management, diet, and medication counseling.

Participant inclusion criteria, field notes, and the use of bracketing to examine personal biases and preconceived ideas about the subject matter were used as instruments. After interview questions were developed, Scotto (2005) utilized methods to reduce bias by removing ideas and reducing the possibility of leading participants. Private interviews were audio taped and focused on five questions about the participants’ diagnosis with heart failure, their last heart failure-related hospitalization, daily self-care practices, practices that make self-care easier, and what makes self-care harder.
Consideration of how the diagnosis affected the participants’ lives and factors influencing adherence were the basis of the questions with avoidance of terms of adherence or compliance that might cause influence. Interview transcriptions were compared with field notes to link body language, facial expressions, and affect as support for interpretation. Analysis was performed with identification of significant or substantive phrases and tentative meanings while overriding and similar themes were grouped. Experienced consultants confirmed theme identification and member checking to gain feedback of preliminary findings was also performed.

Scotto (2005) found that adherence is dependent upon acceptance of diagnosis and resulting changes in an individual’s self-concept and adherence behaviors stem from decisions related to self-care behaviors. When acceptance occurs the integration of appropriate self-care behaviors result as part of the individual’s new self-image and daily lifestyle. Reports from participants that acceptance is a necessary first step were not a surprising finding to investigators.

Daily decisions concerning adherence to the prescribed treatment must be made and are influenced by personal beliefs and values, support from others, unusual circumstances, and temptation (Scotto, 2005). Participants revealed that integrating adaption to their disease process was difficult and often took time to occur. Personal beliefs and values exerted a big influence upon adherence as some participants revealed they didn’t want to disappoint others by not being able to participate in activities as they had in the past or were embarrassed by their limitations. Some expressed that they believed they were at an age where they couldn’t change certain habits. Perceived
support was found to have a positive influence on participants’ adherence to treatment while lack of support had a negative influence. Despite best intentions, unusual circumstances had a negative effect on participants’ adherence by distracting them from their treatment regime. Even if a participant had been adherent with treatment and had strong motivation to succeed, temptation was found to have a negative effect on adherence.

Scotto (2005) concluded that the participants’ revelations about acceptance, integration of the disease process into their daily lives, and factors influencing adherence matched research reporting that of others dealing with health status changes. This provides an important and common theme for those who work with individuals with chronic illness. Adherence to treatment is often difficult. The better understanding a caregiver has of influencing factors; the more likely they may be able to work with patients to find ways of coping successfully with those factors and achieving or maintaining adherence.

Disease specific patient education and monitoring of adherence to treatment plans are a crucial part of gaining optimal outcomes in those with chronic illness. The purpose of a quantitative quasi-experimental study by Kutzleb and Reiner (2006) was “to evaluate the impact of a nurse-directed approach to patient education, focused on lifestyle modification, daily weight management, diet, and medication compliance to improve quality of life and functional capacity in people with heart failure” (p. 115). The investigators also evaluated patient education about self-care disease management to
determine the extent of influence on quality of life and functional capacity in individuals with heart failure. No framework was identified for this study.

The study took place within the United States with patients at a community-based hospital clinic with a physician with a cardiology sub-specialty and a cardiac nurse specialist providing nurse-directed care interventions while a second group received regular medical management by a cardiologist and cardiac fellows at an inner city cardiology clinic. The population included patients between 18 and 75 years of age, English speaking, who had been referred for treatment after evaluation at a cardiology clinic, and with a primary diagnosis of heart failure that had been based on echocardiography with evidence of left ventricular systolic dysfunction or diastolic dysfunction. Those individuals with heart failure present with myocardial infarction, unstable angina, heart failure as a secondary diagnosis to multiple chronic co-morbidities, illness presence that could compromise survival during the study, cognitive impairment, or using mood-altering medications were excluded. The study sample consisted of 23 patients (13 receiving nurse-directed care and 10 receiving medical management) with 65% female and 35% males, average age of 58 years, average ejection fraction of 47%, and receiving an average of six medications (Kutzleb and Reiner, 2006).

Participants in the nurse-directed care group received physical examinations at every visit, a baseline echocardiogram and electrocardiogram, and were provided protocol-driven medical care along with individualized educational plans. Education included daily weight documentation and provision of an educational pamphlet about heart failure and management techniques inclusive of signs and symptoms of condition
changes requiring attention. The nurses provided counseling on medications with compliance monitoring, diet and exercise, smoking cessation, and alcohol avoidance. Participants also received a baseline echocardiogram and electrocardiogram and baseline, three and nine month evaluations of a six-minute walking test and quality of life index survey. Weekly telephone calls and monthly clinic visits for one year provided monitoring, education, and motivational support. The medical management group was monitored by every three month clinic visits where medical management, a quality of life survey, a six-min walking test, and counseling on smoking cessation, medications, diet and nutrition were provided. Kutzleb and Reiner (2006) utilized a quality of life survey by Ferrans and Powers (1992) to evaluate satisfaction and importance of various aspects of life. The survey evaluated the domains of health and functioning, psychological/spiritual, social and economic, and family with higher scores indicative of better quality of life. The investigators noted that the survey has reported high levels of reliability, validity, and sensitivity per Cronbach’s alphas across 26 studies with results ranging from .84 to .98. The six-minute walking test was utilized to measure functional capacity with patients walking a brisk pace as far as possible in the time period with rest periods allowed. This test was noted by the investigators to be objective due to the inability to standardize step length and pace. The investigators minimized differences by using the same walking area, standardized directions, and the same observer during all tests.

Kutzleb and Reiner (2006) found participants in the medical management group to be greatly lacking in illness management with poor medication compliance, 80% never
having been placed on or following a low-sodium diet, and only 40% participating in weekly exercise with 60% managing their illness through frequent rests and restricted activities. The nurse-directed care group reported 84% engaging in weekly exercise with two in cardiac rehabilitation programs and a 73% overall improved functional capacity occurring over the study period while the medically managed group only reported a 9% increase.

Improvements in quality of life were statistically significant for the nurse-directed care participants overall and in all domains. Even though investigators could not find statistical significance between the two groups in regard to functional capacity, the improved functional capacity noted supported a correlation between it and quality of life (Kutzleb & Reiner, 2006). The ability to self-manage diet and medications was reported by participants in the nurse-directed care group as leading to the most important change in their quality of life. This had additive effects on exercise tolerance and the ability to maintain independence. Investigators also noted that several patients in the nurse-directed care group were able to avoid emergency department visits or hospital readmissions due to improved monitoring, follow-up, immediate access to the caregivers, self-identification of clinical warning signs and symptoms, and medical management compliance.

Kutzleb and Reiner (2006) concluded that nurse-directed care can make significant improvements in patient quality of life and functional capacity as well as prevention of emergency department visits and hospital readmissions. While the investigators have noted that more research is necessary, this study provides important
information supporting nurse-delivered interventions that are inclusive of education, support, and monitoring in regard to heart failure, quality of life, and functional capacity.

As the population of older adults who suffer from heart failure is expected to increase over the next several years, self-care deficits in this population remain of concern for increased incidence of disease exacerbation and costly hospital readmissions. The purpose of a study by Britz and Dunn (2010) aimed to determine if there were specific self-care deficits in recently hospitalized patients with heart failure that could be related to a decreased quality of life. This cross-sectional, descriptive study utilized Orem’s Self-Care Deficit Theory of Nursing as a framework.

A Midwestern selective-care hospital unit served as the setting for the study which focused on a convenience sample of heart failure patients. Those included were 18 years old or greater, had an admitting diagnosis of heart failure, and were able to read, write, and understand English. Britz and Dunn (2010) excluded individuals with disorientation, confusion, new onset of heart failure and/or acute, transient heart failure resulting from recent myocardial infarction or surgery. Those who had been admitted from long-term care facilities because of the possibility of their self-care needs being met by healthcare providers were also excluded (Britz & Dunn, 2010).

The SCHFI (Self Care of Heart Failure Index) scale was utilized by Britz and Dunn (2010) to measure self-care via subscales of self-care maintenance, management, and confidence. This scale measures self-care maintenance through questions about compliance with daily weights, physical activity, diet, and medications. Questions include recognition of symptoms of worsening heart failure and how to reverse these
symptoms while identification of success of the interventions measure self-care management. Patients’ responses to questions about their confidence with following instructions about heart failure treatment and recognition of health changes measure self-care confidence. Psychometric testing by Riegel et al.’s (2004) study revealed a coefficient alpha of 0.76 for this instrument. The Minnesota Living with Heart Failure (MLHF) questionnaire was used to evaluate the physical, mental, emotional, and social components of quality of life as affected by heart failure and associated treatment over the previous month for study participants. Investigators reported that the MLHF was found by its developers to have adequate consistency per Cronbach’s alpha. Britz and Dunn (2010) recoded the questionnaire items in the bivariate analysis to associate higher values with higher ratings of quality of life. Demographic data, New York Heart Association (NYHA) functional classification, and left ventricular systolic function with ejection fraction were obtained through participant interviews, discussions with the participants’ rounding cardiologists, and medical record review.

The average age of the 30 participants was 71 years with a majority being male, married, high-school graduates in self-reported poor health. Sixty per cent of participants were former smokers with 17% still smoking. Health conditions most frequently reported were angina, myocardial infarction, hypertension, high cholesterol, and arthritis. Britz and Dunn (2010) found that participants reported use of pill systems, checking ankles for edema, self-weighing, and seeking care from a physician as self-care maintenance behaviors. Participants reported they managed symptoms by calling their
doctor or nurse for guidance and were moderately self-confident in treating their heart failure symptoms (Britz & Dunn, 2010).

Findings concerning self-reported quality of life included heart failure-related shortness of breath and fatigue that caused interference with activities, difficulty with walking and stair climbing and the need for frequent daytime rest periods. Britz and Dunn (2010) identified that symptoms related to heart failure had little effect on loss of control, family burden, or worries and depression. Length of hospital stays and decreased recreational pastimes were reported to be directly related to heart failure symptoms. Outcomes found to be statistically significant were noted between total self-care and gender. Females felt more confident than males concerning heart failure management and maintenance. Those who were older were found to have a better quality of life than younger participants. More self-care confidence was found in those who viewed their health as better than those who perceived poorer health. Those reporting better health also were found to have less co-morbidity. Britz and Dunn (2010) identified that better physical, emotional, total quality of life and emotional well-being were significantly associated with higher self-care confidence.

Results of this study provide important information reinforcing the concept of ongoing self-care education for patients with heart failure to increase their self-confidence. Britz and Dunn (2010) identified that confidence in self-care can lead to improved quality of life and reduced disease exacerbations resulting in hospital readmissions. The need for future research targeting development and testing of educational discharge instructions supportive of and focused on self-care confidence
development for improved quality of life in individuals with heart failure was identified by the investigators (Britz & Dunn, 2010).

Information about the impact of heart failure on health related quality of life can be used to assist with clinical decision-making. Calvert et al. (2005) chose to assess the impact of advanced heart failure, based on New York Heart Association (NYHA) levels III or IV, on patients’ quality of life. No framework was identified for this study.

Calvert et al. (2005) based their study in Europe and assessed baseline results from those individuals who were already participating in the CARE-HF (Cardiac Resynchronization in Heart Failure) study. Effects of bi-ventricular resynchronization and optimal medical treatment on morbidity and mortality were assessed in the CARE-HF study. Eighty-two clinical outpatient centers in twelve countries served as the locations of care for participants. A total of 813 patients comprised the study group in this randomized, controlled trial. A generalized population of the United Kingdom and patients with other chronic diseases served as the control group. Mean age of study participants was 65 years with 74% males and 26% females. Ninety-four per cent of participants were designated a NYHA classification of III with six per cent designated class IV. The majority of participants were receiving diuretics and ACE or angiotension II inhibitors while 72% were receiving beta-blockers, 56% aldosterone antagonist therapy, and 42% Digoxin.

Investigators evaluated patient demographics, medical history, and quality of life at baseline. Physical and echocardiographic exams and blood tests were also performed prior to randomization. At baseline, the EuroQol instrument (EQ-5D) was utilized to
measure health quality of life for clinical and economic effects. The EQ VAS (EuroQol visual analog scale) provided participants with the ability to rate their health from full to worst imaginable. The Minnesota Living with Heart Failure (MLHF) questionnaire was also used in the CARE-HF study. Both are validated instruments with the EQ-5D focusing on patients’ self-assessed health generically while the MLHF is a disease-specific self-assessment tool. The EQ-5D assesses an individual’s current problems with mobility, self-care, usual activities, pain or discomfort, and anxiety or depression utilizing three severity levels. Health states are classed into 245 groups and then can be converted into a score that ranges from full health to deceased. Patients rate the extent of impact heart failure has had on their quality of life through the MLHF questionnaire. Responses are rated from no effect to very much an effect and are then summed with higher scores indicative of poorer quality of life. While normally a total score is used to determine results of the MLHF tool, Calvert et al. (2005) chose to utilize individual question responses for detailed determination of what impact heart failure had on the different aspects of quality of life. NYHA status, gender, age, quality of life, and effect of country on the EQ-5D were all evaluated utilizing a mixed linear model with an identity link, normal error, and with clinical centers determined as random effects (Calvert et al., 2005). Mixed modeling with the clinical centers identified as random effects was used to evaluate the relationship between the EQ-5D and MLHF scores (Calvert et al., 2005).

Findings revealed a non-significant relationship between age and the EQ-5D score while there was a significant association between EQ-5D score, NYHA classification,
and gender. Females were found to have a worse quality of life than males; a finding that supports previous studies. An expected finding revealed that class IV patients reported a poorer quality of life than those classified as level III. Another expected finding was that poorer quality of life was found per the MLHF scoring as associated with an EQ-5D poorer imaginable state of health. Comparisons of participants’ EQ-5D and EQ VAS scores with the control group were age stratified. Calvert et al. (2005) found that the CARE-HF group had significantly lower EQ-5D and EQ VAS scores than the general population for all age groups and that age did not decrease scores for the CARE-HF group. CARE-HF participants had a greater proportion of problems with quality of life across all age groups with 15% of the participants reporting beliefs that the problems were extreme. A greater number of intervention participants had mobility issues than did those in the control group with two-thirds reporting pain or discomfort and half reporting anxiety or depression (Calvert et al., 2005). Problems with self-care, such as washing or dressing, were identified by almost a quarter of those in the CARE-HF group. These findings were comparable with those from other studies of individuals with several chronic disease states such as Parkinson’s disease, ischemic stroke, mild to moderate motor neuron disease, and non-small cell lung cancer.

The study group reported increased physical problems that interfered with their quality of life as measured through use of the MLHF. Problems with usual activities were reported by 76% of participants via the EQ-5D while 50% reported via the MLHF that their recreational activities were affected by their disease state. According to Calvert et al. (2005) emotional problems were not found through the MLHF results to have as
much of an effect on quality of life as the physical problems. Responses by participants in regard to their overall health and quality of life showed that four per cent of patients reported a state worse than dead while seven per cent reported full health. The majority of participants fell in between.

Calvert et al. (2005) concluded that patients with heart failure have major problems in many aspects of their quality of life even when pharmacological treatment is being provided at optimum levels. Quality of life varies widely in those with heart failure and use of routine assessment of this dimension could be helpful in gaining better understanding and with clinical decision-making. The investigators also noted that, based on other trials which showed improvement in quality of life scores following cardiac resynchronization, the participants in the CARE-HF study may eventually experience improvements in their morbidity and mortality, leading to improved quality of life.

**Social Support and Self-Management**

Research in the utilization of nurse management to improve quality of life care for heart failure patients has been lacking in studies of minority populations. An Agency for Healthcare Research and Quality (AHRQ) study by Sisk et al. (2006) evaluated ethnically diverse patients with heart failure in a randomized controlled trial that compared the effects of nurse-led intervention focused on specific management problems to the usual medical care. The goal was to reduce hospitalizations and improve functionality which then would lead to improved quality of life. No framework was identified for the study.
Four not-for-profit hospitals in Harlem, New York served as the setting with the hospitals ranging from a large private academic medical center to a small private community hospital. Sisk et al. (2006) recruited 406 non-Hispanic African American or Hispanic adults, age 18 years or greater, English or Spanish-language speaking, with systolic dysfunction as documented through a cardiac test, living in the community at the time of enrollment, and currently followed in general medicine, geriatrics, or cardiology clinics or offices at the participating institution. Those who could not interact with the nurse due to medical conditions or who required individualized management that differed from standardized protocols were excluded. The study took place over a two year period.

Patients randomized to the usual medical care group received federal consumer guidelines on systolic dysfunction management. National evidence-based guidelines for the nurse-managed protocol were developed by a clinical advisory committee and approved by a group of participating site clinicians. Nurse-managed patients received counseling one time with one of three nurses. The counseling included dietary information about the relationship between sodium intake, fluid retention and symptoms along with foods to avoid, information about heart failure physiology through language-specific materials and discussions, self-management assessment and education about monitoring of symptoms, reporting of symptoms, daily weights, physical activity, smoking cessation, alcohol avoidance or limitations, medication adherence, and identification of the nursing role in telephoning patients for regular monitoring. Contact information for nurses and instructions about when to contact a usual clinician for care was provided. Patients in the nurse-managed group received mailings that identified their
food-frequency preferences from a questionnaire at two, four, eight, twelve, and twenty-four weeks. Follow-up telephone calls were made weekly to check patient progress, record any emergency department visits or hospitalizations, and reinforce initial education. Study nurses communicated with participants’ clinicians to discuss medications and protocol-driven changes and examinations. Each clinician received a written note from the nurses after each patient contact. Nursing care was monitored by an internist and an overseeing cardiologist through initial weekly, then biweekly meetings. Bilingual nurses provided the intervention at most of the settings with the exception being an English-language speaking nurse at the academic organization.

Sisk et al. (2006) utilized The Short Form-12 (SF-12) physical component score and the Minnesota Living with Heart Failure (MLHF) questionnaire to evaluate functional status. No reliability or validity was stated for these instruments. A Stanford University program questionnaire adapted to include frequency of culture-specific foods eaten by the population group was utilized. Hospitalizations were measured through billing data and blinded interviewers telephoned participants to ask about hospitalizations at non-participating organizations. Deaths were measured through the National Death Index along with patient family reports for those who had no hospital billings for readmissions.

Sisk et al. (2006) found that nurse-managed patients had fewer cumulative heart failure-related hospitalizations overall than the comparison group. The nurse-managed group also was found to have better functioning following intervention than the comparison group. At the end of the intervention participants in the nurse-managed
group were identified to have a functional status of New York Heart Association (NYHA) classification of stage II, slight physical activity limitations, compared to the usual medical care group who demonstrated a NYHA classification of stage III, marked physical activity limitations. While the nurse-managed patients maintained their functional status, the usual care patients reported worsened functional status. Changes in the percentage of participants for whom medications were changed showed no differences between groups. While each group had the similar amount of deaths of participants, 22, over a 12 month period, at 18 months the nurse-managed group had three fewer deaths.

Minority patients with systolic dysfunction heart failure, a group that suffers high burdens of this disease process, were concluded by Sisk et al. (2006) to benefit from culturally appropriate nurse-managed care in ambulatory settings. The method of providing care in collaboration with usual clinicians vs. in a clinic setting and initially meeting personally with the participants in their usual practice setting was attributed by the investigators to have possibly provided important bonding experiences between nurses and participants. This could have led to overall improved participant self-management skills due to the social support provided. The investigators noted that following the end of nurse-participant contact the participants showed declining functionality that was deemed at a rate to be similar to those patients in the usual medical care group.

Thailand is known to rank cardiovascular disease as the top non-communicable disease state in the country, thus leading to questions as to causal factors and their
relationship to health related quality of life (HRQOL). A study by Krethong, Jirapaet, Jitpanya, and Sloan (2008) investigated development and testing of a hypothesized causal model of HRQOL in Thai heart failure patients. No framework was described for this study.

The descriptive, correlational, cross-sectional design study was performed with 422 patients with heart failure. Nine hospital clinics in five Thailand regions served as the setting for the six month study. Those studied included patients with heart failure diagnoses aged 18 years or greater who had undergone medical testing for left ventricular ejection fraction in the prior month. Krethong et al. (2008) excluded those who had experienced a large myocardial infarction in the previous 8 weeks, or had cancer, HIV/AIDS, renal failure, or other chronic conditions that could cause an impact on HRQOL. Individuals with hyperthyroid conditions causing curable heart failure were also excluded.

The principal investigator and three research assistants collected data by meeting with participants. A personal information questionnaire was utilized to gather demographic information and medical records were reviewed for co-morbidities, left ventricular ejection fraction and heart failure etiology. The New York Heart Association (NYHA) functional classification for heart failure was utilized to classify participants’ tolerance of daily activities. The NYHA findings were also supported through peak exercise oxygen consumption and six-minute walking distance testing. General health perception (GHP) was measured through a 100-mm horizontal visual analogue scale. The Cardiac Symptom Survey (CSS) was utilized to evaluate frequency and severity
ratings of physical and psychological symptoms including chest pain, dyspnea, fatigue, leg edema, palpations, depression, anxiety, poor appetite, and difficulty sleeping. The Minnesota Living with Heart Failure (MLHF) questionnaire measured physical, emotional, social, and mental dimensions in regard to HRQOL. The Enhancing Recovery in Coronary Heart Disease Social Support Instrument (ESSI) was utilized to measure social support. Reliability and validity of the Thai-converted versions of the MLHF, CSS, and ESSI were confirmed by Krethong et al. (2008).

The investigators identified the majority of participants as married, Buddhist females with an elementary school education and low monthly income. Coronary artery and valvular heart disease were the most common etiologies of the participants’ heart failure with approximately one-third diagnosed in the previous year and one-quarter diagnosed from one to three years prior. Co-morbidities were found in about half the participants with hypertension in 20.4% and diabetes mellitus in seven per cent. Krethong et al. (2008) identified participants as mostly NYHA classes II and III and their GHP was found to be moderate. HRQOL was also perceived to be moderate with social support perceived as moderate to high.

Participants in this study were found by Krethong et al. (2008) to have HRQOL affected by all variables that were tested. Left ventricular ejection fraction (LVEF) values were found not to be predictive of symptom status as most of the participants had a LVEF of 40% even when experiencing heart failure symptoms. The investigators identified an indirect effect on HRQOL by LVEF with increases in LVEF associated with decreases in functional limitations. These decreased functional limitations resulted in
improved HRQOL. Significant negative direct effect from social support on HRQOL was identified. Those who were identified to have more social support reflected feeling as though they were more of a burden to others and were found to have lower HRQOL scores even though their symptoms of heart failure were less. The investigators concluded that increased social support led to decreased symptom status. The increased social support had a low indirect effect on functional status because of lesser symptoms. HRQOL was found to be most greatly affected by symptom status with those with high symptom distress experiencing higher functional limitations. This was identified as leading to decreased GHP and HRQOL.

Krethong et al. (2008) concluded that biomedical and social factors influence HRQOL and the importance of addressing those factors in Thai patients with heart failure. The investigators’ findings may be applicable to other populations and support the need to develop and test symptom control measures that are cost-effective. While the Thai patients’ perceptions in regard to social support diminishing HRQOL may be more of a culture-specific finding, these types of considerations may be something that should also be considered for those of other cultures. The investigators noted that additional studies in other international populations could help to broaden the understanding of nurses caring for patients with heart failure in regard to cultural effects on HRQOL.

Impaired quality of life in patients with heart failure is a subjective and common experience due to the progressive state of the disease process. Seongkum, Lennie, Okoli, and Moser (2009) chose in a qualitative study to evaluate patients’ perceptions about
heart failure in an effort to help those individuals maintain an optimal state of quality of life. No framework was identified for this study.

The study was conducted by Seongkum et al. (2009) in a Midwestern city in the United States with a convenience sample of 20 heart failure patients. Those participating had a medical record review-confirmed diagnosis of heart failure with functional classes II to IV per the New York Heart Association (NYHA) tool and were English speaking. Those with severe psychiatric or cognitive problems were excluded. Primarily white males with co-morbidities, a mean age of 58 years, and living with someone comprised the sample.

Semi-structured, open-ended, audio taped, individual interviews were conducted utilizing content analysis. Analysis of the interviews was performed by three investigators along with the primary investigator for accuracy. Questions were developed by the investigators and reviewed and revised by two heart failure experts. Seongkum et al. (2009) asked subjects about issues related to the impact of heart failure on their daily life, their definition and self-evaluation of quality of life, and factors affecting their quality of life. The primary investigator analyzed transcriptions by content analysis numerous times for overall impressions and coded and named them utilizing shared concepts. Additional review of the transcriptions and coding scheme were reviewed by two other investigators for confirmability and minimalization of personal biases for the first three interviews. Following consensus on the coding scheme the primary investigator conducted the rest of the interviews. Two other investigators reviewed the interviews for trustworthiness and then grouping of codes into larger categories based on
content was performed along with reduction to major themes as determined through investigators’ discussions. Classification of functional status utilizing NYHA classification was made based on the interviews and a demographic questionnaire provided data concerning age, education level, ethnicity, gender, marital status, and living arrangements.

Findings of definitions of quality of life were based on performance of physical and social activities, maintaining happiness, and engagement in fulfilling relationships (Seongkum et al., 2009). Factors affecting quality of life included health status based on physical symptoms, condition and health-related behaviors such as self-care, psychological factors such as good mood and positive outlook, and the impact of heart failure on economic status. Social factors such as social support and activities were evaluated and participant descriptions of use of prayers and faith in God reflected spirituality.

While Seongkum et al. (2009) found that a few patients reflected negative feelings about their quality of life due to functional limitations on a daily basis as compared to pre-disease, most believed their quality of life was good or very good. Being able to do some activities that they wanted to, feeling emotionally happy, and the consideration that things could always be worse were the basis of those positive feelings.

Conclusions by Seongkum et al. (2009) found that the subjects’ active pursuit of happiness and relationships with others, along with their heart failure symptoms and daily limitations, affected their definition of quality of life. The majority of subjects’ self-evaluation of quality of life was reflective of the perception they held in regard to their
condition and how positive their outlook was. The investigators recommended that researchers and clinicians evaluate what measurements of quality of life might be best suited to identifying the most accurate picture and also determine how quality of life is related to other clinical outcomes.

**Telephone Interventions**

Telephone interventions have been found beneficial as a means of achievement of desired outcomes for those with complex disease processes. A controlled comparison study by Wheeler and Waterhouse (2006) aimed to reduce hospital readmissions and decrease overall symptoms by utilizing nursing students to deliver telephone interventions to heart failure patients over a 10 to 12 week period following home care. The investigators also proposed that students would benefit from experiencing same-patient extended intervention (Wheeler & Waterhouse, 2006). No framework was identified for this study.

The mid-Atlantic region of the United States served as the setting. Students participating were enrolled in a final medical-surgical clinical course of their senior year of a baccalaureate nursing program at an area university. Wheeler and Waterhouse (2006) chose 40 individuals with primary diagnoses of heart failure who were patients with a home health care agency for participation in this pilot study. Both the telephone intervention and convenience comparison group included 20 patients each. Each student was assigned to two patients in the intervention group. No other inclusion data was noted.
Home visits by student nurses and a registered home health care agency nurse at the beginning of the study included assessment of both groups of patients’ conditions, environment, and social support along with education about medical treatment. Patients were followed by the home health care nurses for one to four weeks. Following home care discharge the students followed the intervention group for another eight to twelve weeks utilizing a detailed protocol that was delivered via telephone. The protocol included reinforcement of prior education and encouragement of compliance.

Instruments utilized during the initial visit and again at end of the semester included The Minnesota Living with Heart Failure (MLHF) questionnaire, the Problem Rating Scale of Outcomes, and the Perception of Health Status and Quality of Life Scales. Demographic data was obtained by investigators from participants’ medical records for the intervention group while the comparison group data was obtained from medical records and an initial patient visit. New York Heart Association (NYHA) classification, number of co-morbidities, age, gender, caregiver, and number of medications were all noted. The MLHF was identified as a reliable and valid tool based on prior testing in research studies. The MLHF queried participants as to if they found in the previous week, prior to survey, that their limitations prevented them from living as they wished. The intervention group participants were asked to rate their perception of health status at that time and their quality of life in the previous week by utilizing Likert-type scales (Wheeler & Waterhouse, 2006). No reliability or validity of these instruments was noted. The Problem Rating Scale of Outcomes also utilized a Likert-type scale to identify patient status in accordance to specific problems; in this case diet, nutrition, physical activity,
and prescribed medication regimen. This tool was utilized as nursing interventions are assumed to be affected by the patient’s knowledge, behavior and status (Wheeler & Waterhouse, 2006). While no specific validity or reliability of the tool was noted in the article the investigators stated that it is based on the Omaha system which assesses and documents patient outcomes and is clinical and research-based.

Both the intervention and comparison groups were primarily female with an average age of 72 years. Participants had been diagnosed with heart failure an average of five years and the majority had a NYHA classification of II or III. Most had three or more co-morbidities. The intervention group took more medications than the comparison group while the comparison group had more diagnoses of hypertension. Wheeler and Waterhouse (2006) found that the comparison group had more hospital readmissions, but the difference was not deemed significant. MLHF scores were found to be better for the intervention group at study end as compared to beginning but, were not deemed significant. Despite the insignificance in the scores for the MLHF Wheeler and Waterhouse (2006) noted patients receiving the telephone interventions showed improvement over the study period and deemed that this finding as encouraging. No differences were found to be significant for the Perceptions of Health Status or Quality of Life scales for those in the intervention group however, the satisfaction with care that was experienced by those in the intervention group was also noteworthy and supportive of previous studies.

Students were noted by Wheeler and Waterhouse (2006) to have benefitted from the learning experience. While no specific evaluation of the learning experience was
described, the ability to gain experience in community health care and through participation in a research project was identified as a positive factor.

This study was concluded by Wheeler and Waterhouse (2006) to achieve positive outcomes for community-dwelling individuals with heart failure while utilizing efficient and effective interventions. The study also was concluded to have provided a positive student learning experience. The investigators stated plans to conduct more research with larger sample sizes, including patients experiencing other types of chronic illness, in order to provide studies that are stronger and more externally valid (Wheeler & Waterhouse, 2006).

Chronic illness can cause feelings of helplessness and hopelessness in patients who may not understand the role they can play in managing their illness by accessing helpful resources, thus hindering achievement of positive outcomes. Shearer et al. (2007) conducted a study that examined the effects of a telephone-delivered empowerment intervention on clinically and theoretically relevant outcomes in patients with heart failure. The study included measurement of purposeful participation in goal attainment, self-management, and functional health perception with the goal of providing a basis for enhancement of these outcomes in patients. Rogers’ Science of Unitary Human Beings person-environment process was utilized as a framework to support the theory that empowerment can lead to purposeful participation in change.

A southwestern United States large, metropolitan hospital unit served as the setting. Shearer et al. (2007) studied 90 heart failure patients, aged 21 years or greater, who had a diagnosis of systolic or diastolic heart failure as documented by the health care
provider, were able to read and understand English, and had access to a telephone following hospital discharge. Three nurse clinicians identified candidates from the daily census and obtained permission and support from the candidates’ physicians prior to approach. Participants were mostly married, white, well-educated males, mean age of 76 years, with a New York Heart Association (NYHA) classification of stage III heart failure.

The study was conducted as a randomized controlled trial. Shearer et al. (2007) assigned participants to an intervention or control group with all completing demographic information and a questionnaire about the identified outcome measures. The control group received standardized heart failure education and completed a packet of information 12 weeks post-hospitalization. The intervention group received the standardized heart failure education along with six telephone-delivered empowerment interventions by expert heart failure nurses. These interventions provided support that utilized standardized questions and sharing of concerns and possible solutions. They also took into account the patient’s values and beliefs to raise awareness of purposeful participation in change that could lead to goal attainment. Patients in the intervention group received a questionnaire following the intervention to measure their progress.

The Power as Knowing Participation in Change Tool VII (PKPCT) was utilized by Shearer et al. (2007) to measure each intervention with the patient’s purposeful participation in attaining health goals through the use of a one to seven point interval rating scale. Reliability was tested for this study using Cronbach’s alpha and was identified as slightly less than prior reliability estimates for the total scale. The SF-36
(Ware) was utilized to measure functional health including both physical and mental health components. This tool was validated utilizing Cronbach’s alpha with acceptable ranges for the eight SF-36 subscales and an overall 36-item measurement slightly above prior content validity through factor analysis of item loadings on the physical and mental dimensions of health. The Self-Management of Heart Failure (SMHF) scale measured the patients’ abilities to maintain illness stability and manage symptoms as they occurred. Pre-test validity was confirmed through use of Cronbach’s alphas with acceptable results for maintenance, decision-making, and self-confidence subscales that correlated with prior validity of content from literature review, discussions with heart failure nursing experts, and patient interview assessment of face validity. Demographic data and hospitalization or three month prior physiologic measures of cardiac ejection function along with NYHA heart failure classifications were also gathered.

Eighty-seven of the participants completed the study. Shearer et al. (2007) found that there were no significant differences at 12 weeks between the two groups in regard to the PKPCT or SF-36 functional health physical or mental health components. Post-test, the mental health component scoring was higher for both groups, revealing a perceived moderate limitation to performing normal activities due to mental health.

The SMHF scores increased significantly from pre to post-test in the intervention group with those participants better able to manage their heart failure through self-care activities. No significant differences between the study and control groups were noted by Shearer et al. (2007) in demographic and physiologic measures at baseline. The study and control group also lacked baseline significant differences in ejection fraction, NYHA
heart failure classification, measures of purposeful participation in attaining health goals, functional health, and self-management.

Conclusions were that opportunities exist for the use of theory-guided nursing interventions in assisting patients with chronic diseases to purposefully participate in self-care management strategies and attainment of goals. Empowerment initiated through nursing-led telephone interventions is an easy to deliver cost and outcome effective method to enhance self-management and improved function. While the results gained from this study are helpful in providing nursing and other healthcare providers with knowledge of this type of self-management facilitation, Shearer et al. (2007) acknowledged that more research is needed in regard to the conceptualization of health empowerment in relation to chronic disease management.

Studies utilizing telephone interventions for patients with heart failure have shown some improvements in patient outcomes. However, these studies have not been widespread, encompassed large groups or shown survival benefits. Because of the large amounts of resources utilized by patients with heart failure, Copeland, Berg, Johnson, and Bauer (2010) chose to assess, through a prospective randomized controlled study, the effects of a telephone intervention to improve quality of life and clinical outcomes among patients with heart failure. Minimal effects on care costs also were a focus of this study. The researchers examined compliance, satisfaction with care, and survival rates. No framework was identified for this study.

A Veterans Association (VA) medical setting in the Southwest United States served as the setting. Participants were 458 English speaking adults, aged 18 years or
greater with a diagnosis of heart failure following receipt of inpatient or urgent care or experiences of more than 12 outpatient visits in the previous 12 months. Participants who suffered from end-stage renal disease or congestive dialysis, end-stage or terminal illness in addition to their heart failure, severe dementia, had received a heart transplant, lived in a nursing home, were participating in other research or care management programs, or had relocated from the area were excluded from the study (Copeland et al., 2010).

Interventions and data were collected over a one year period with retrospective one year pre-intervention data collected for a baseline. A telephone survey was conducted by Registered Nurses at time of intake and then was repeated at six and twelve months. Questions focused on participants’ knowledge, behavior, and health status. A patient-specific self-management plan was delivered by the disease management nurses during scheduled telephone calls. During the interventions education and coaching for behavior change for fluid weight management, medication adherence, diet, early treatment for symptoms, vital signs monitoring, and discussion of recent laboratory values were reviewed. Motivational interviewing principles were incorporated into the interventions. Participants had access to a nurse advice line for symptoms and counseling at all times, received medication compliance and vaccination reminders, printed literature and post assessment letters. Calls were more frequent during the first six months of the interventions and then tapered off over the remaining months. Copeland et al. (2010) gathered data from patient self-report during the interventions, review of medical records, and reports on costs from a resource allocation center. Co-morbidity was calculated via
the modified Charlson-Deyo co-morbidity index for both pre and post intervention periods. A questionnaire assessing patient satisfaction was validated using Cronbach’s alpha. The questionnaire focused on quality of information, reassurance, the healthcare provided, daily weight checks, dietary and medication compliance and regular exercise. The Short Form Health Survey measured health-related quality of life in both physical and mental components. No reliability or validity was stated for this tool.

In both groups 99% of participants were male with a mean age of 70 years and half were white. Copeland et al. (2010) found more than half of the intervention group classified as moderate risk followed by high risk in heart failure-related risk stratification. High risk patients in the intervention group were found to have higher mean heart failure costs than those with moderate risk while the differences in cost between those of moderate and low risk were not deemed significant. Higher total costs were also found for the intervention group as compared to the control group. Race/ethnicity and a co-morbidity of Chronic Obstructive Pulmonary Disease (COPD) were found to be significantly different between intervention and control groups. Mental component scoring, heart failure-related and other admissions, 30-day readmissions, medication costs and cost subcategories were found to be insignificant in difference between those in the intervention vs. control groups.

Satisfaction with care showed no significant differences between both groups at the end of the one year intervention. The intervention participants were found by Copeland et al. (2010) to have better compliance with checking daily weights and following regular exercise programs as directed. Health-related quality of life, inpatient
utilization measures and survival did not show any difference at this time period for the intervention group as compared to the control group.

Copeland et al. (2010) speculated that while cost-neutral care was not achieved for the intervention group, additional associated costs from increased healthcare utilization may have been attributed to the participants’ easier access to care, leading to the higher care costs. Since Medicare reimbursement to cover costs were not evaluated due to unavailability, the investigators stated there may be differences in cost for patients receiving that type of care access and reimbursement. The investigators admitted that cost-neutral care may not be an achievable goal. Improved physical well-being along with improved self-care is something the investigators concluded to be a possible solution to improving care and outcomes for those suffering from severe chronic illness. While this study holds important information for VA patients, Copeland et al. (2010) noted that these particular methods may not be applicable with other populations due to the greater amounts of co-morbidities found in the VA patients studied.

A significant need for a comprehensive, low-cost intervention that would assist in improving patient outcomes, preventing readmissions, and maximizing quality of life for heart failure patients was a driving factor for Duffy et al. (2010) in developing a theory-guided telephone and in-home visit intervention. This randomized controlled pilot study evaluated two groups consisting of patients who received the usual home visits compared to those who received the combined intervention of home and telephone visits. The Quality-Caring Model was utilized as a framework due to its focus that the foundation of
care is independent and collaborative relationships are grounded in specific caring factors.

Thirty-two patients participated with an intervention group of 15 and a control group of 17. Patients were chosen initially from a home health agency that received patients from three referring hospitals in suburban Maryland. Three additional home health agencies were later added to the study by Duffy et al. (2010). Subjects were 65 yrs. or older, alert and oriented (with a score of six or higher on the Short Portable Mental Status Questionnaire), had a primary diagnosis of Class III or IV heart failure per the New York Heart Association (NYHA) system, were recently referred to the home health agency pending hospital discharge, were English speaking, and had a telephone available for use.

A group of nurses provided a series of in-home visits and telephone interactions with homebound older adult patients diagnosed with severe heart failure over a six-week period and focused on cultivating and sustaining caring patient-nurse relationships. Mutual agreement on a schedule of telephone interactions was made at the study beginning and patients were given weight scales and symptom logs. Structured telephone scripts focused on symptom recognition and reporting while education and emotional support were provided by the nurses during calls. During the first two weeks the nurses spent more time with visiting and telephone calls and then gradually decreased that time. The nurses completed evaluations of interactions after each call. Duffy et al. (2010) aimed to describe the patient population, assess the study methods, evaluate the results of the intervention on intended patient outcomes, examine the resources that were required
to implement the intervention, and identify unanticipated problems or operational difficulties.

The OASIS Start of Care form (Outcomes and Assessment Information Set) was utilized to obtain baseline patient descriptors. The OASIS Transfer and Discharge form provided information about hospital readmission, reasons for hospitalization and emergent care, length of stay, and length of time prior to transfer. These two tools were found by Duffy et al. (2010) to have excellent to substantial interrater reliability estimates for the majority of items with fair to moderate reliability for a few items. The Short Portable Mental Status Questionnaire was used initially to determine the cognitive function of the patient and no reliability was noted. The Living with Heart Failure Questionnaire measured quality of life and was found to be reliable and valid through testing with Cronbach’s alpha. The Home Care Client Satisfaction Instrument-Revised measured patient satisfaction with care and was found to have some criterion-related validity and reliability per Cronbach’s alpha. Patient/caregiver and nursing utilization of the intervention and evaluation of the major components of the intervention were measured via an investigator-developed telephone log. The achievement of pathway-defined goals including controlling pain, maintaining a stable cardiac status, achieving an optimal respiratory function, maintaining adequate fluid, nutrition and elimination status, demonstrating effective coping, being knowledgeable about vital signs, and demonstrating an established daily/weekly weight log were all gathered from the Nursing Discharge Summary/Last Clinical Visit medical record note. Telephone logs and patient records provided information for measurement of resource consumption that was tallied.
from the number and length of home visits and telephone interactions in minutes. Potential cost of the intervention as based on this information was then calculated.

There were no significant differences noted between groups concerning demographic variables, activities of daily living, number of comorbidities, or severity of illness. The symptoms of patients were found to be controlled, although at times with difficulty and often affecting their daily functioning. Ongoing monitoring was required for all subjects. Duffy et al. (2010) found subject recruitment challenging due to problems with referral patterns and admission criteria that led to exclusion of some potential study subjects who didn’t meet Medicare reimbursement limitations focused on episodic, homebound, symptom-based heart failure. This excluded a group who could have benefitted from the study. The addition of more home health agencies to the study allowed for a larger number of patients from which to recruit. The instruments chosen were found to perform well with reliability and validity. Data analysis occurred as planned although Duffy et al. (2010) found that the decreased sample size provided limitations in the initially planned statistical procedures, thus leading to the need for re-designation as a pilot study.

Improvements were noted in the homebound intervention group patients in regard to hospital readmissions, quality of life, and patient satisfaction. The intervention group had more in-home visits, length of stay in home care, and greater potential costs with no significance noted for the differences. Duffy et al. (2010) deemed the intervention effective and efficient for symptom monitoring, facilitation of learning, and provision of emotional support in regard to nursing capacity. Subjects proved to be receptive and able
to participate with increasing recognition and reporting of their symptoms. Leadership support was found to be essential and proved problematic at one agency after resignation of a leader and replacement by another who was disengaged regarding the study. Staff support was found to be crucial to the study. Despite voluntary participation many of the nurses described the study to be challenging in regard to time spent; with 29% noting that they believed the intervention to be an obstacle to normal routine.

Duffy et al. (2010) concluded that a theory-guided continued nursing services intervention utilizing the Quality Caring Model is beneficial in reducing hospital readmissions and improving patient satisfaction and quality of life for homebound heart failure patients who have recently been hospitalized. This study proved that with some refining and additional research in use of this approach with a larger, more diverse sample of heart failure patients interventions can result in positive outcomes.

Summary

Sethares and Elliot (2004) identified that a tailored message intervention can result in changed perceived benefits and barriers to self-care in individuals with heart failure and that close home monitoring and visiting nurse care can reduce hospital readmissions. Understanding influencing factors on adherence to treatment was found by Scotto (2005) as important in assisting caregivers in finding methods that can lead to more successful coping and adherence to treatment by patients with heart failure. Kutzleb and Reiner (2006) identified nurse-directed interventions, such as education, support, and monitoring in regard to heart failure, quality of life, and functional capacity, can lead to significant improvements in quality of life, functional capacity, and
prevention of hospital emergency department visits and readmissions for patients with heart failure. Culturally appropriate nurse-managed care in collaboration with usual clinicians in an ambulatory setting for patients with heart failure was found by Sisk et al. (2006) to be beneficial in improving self-management skills due to the bonding that occurred between the nurses and patients. Social support, symptoms and daily limitations, and overall outlook on the illness experience in patients with heart failure was found by Seongkum et al. (2009) to have effects on participants’ perceptions of quality of life.

Wheeler and Waterhouse (2006) found telephone interventions an effective and efficient method in achieving positive outcomes in community-dwelling individuals with heart failure. Empowerment initiated through nursing-led, theory-guided telephone interventions utilized with patients with heart failure was found by Shearer et al. (2007) to provide an easy to deliver cost and outcome effective method that can lead to enhanced self-management and improved function. Theory-guided nursing interventions were also found by Duffy et al (2010) to be successful in reducing hospital readmissions and improving patient satisfaction and quality of life for homebound patients with heart failure. Through literature review it was identified that continued research is needed to identify the most effective interventions for increasing self-management, improving functional status and quality of life, and decreasing hospital readmissions. Much of the literature focused on studies performed several years ago, thus reinforcing the need for more current research showing evidence of effective nursing interventions leading to
improved outcomes for those individuals experiencing the devastating disease process of heart failure.
Chapter III

Methodology

Setting, Population, and Sample

The setting for this descriptive comparative repeated measures study will take place in a 220-bed Midwestern community not-for-profit hospital heart failure clinic. The population will include 50 adult patients with heart failure who will be recruited from a pool of approximately 100 patients between January 2013 and March 2013. Criteria for inclusion will be age 21 years or greater, ability to speak, read, and understand English at an eighth-grade literacy level, a diagnosis of heart failure with systolic or diastolic dysfunction as based on health-care provider documentation in the medical record, and access to a telephone for follow-up post-discharge.

Protection of Human Subjects

The organization and university institutional review boards will be approached for approval of the study. All participants will be asked to sign an informed consent following explanation of the study, reading of the informed consent, and responses to any questions they may have.

Procedure

Patients will be identified from the Heart Failure Clinic census by the primary investigator and the medical record will be reviewed for eligibility for participation. Each patient’s cardiologist will be contacted by the investigator to gain approval for
patient recruitment. Following physician approval, patients will be approached by the investigator and the study will be explained. Informed consent will be obtained at that time.

Random assignment of participants to either the intervention or a control group will proceed at the time of enrollment. Participants will be asked to complete a demographic data form and questionnaire packet containing tools to collect data about the primary outcome measures; purposeful participation in attaining health goals, functional health, and quality of life. All participants will continue to receive the usual clinic care which includes standardized heart failure written and verbal educational information about the individual’s heart failure etiology, signs and symptoms of heart failure, and the management techniques of adherence to low sodium diet, medications, daily weights, exercise, avoidance of alcohol consumption and smoking, and when to call their physician. Educational information will be provided to all participants at time of intake with reinforcement at every clinic visit; approximately every two weeks during the first month and then monthly thereafter.

**Control Group**

At the time of enrollment the control group will be informed that they will receive another packet of information at their nine month clinic visit from the investigator. Explanation will include that the participants will be asked to complete and submit the packet during that visit.
**Intervention Group**

The intervention group will receive at the time of enrollment a magnet with a stop light printed on it. The stop light will include signs and symptoms associated with the need for emergent heart failure care next to the red light along with instructions to proceed to the nearest emergency department. The yellow light will include signs and symptoms associated with the need for urgent care and instructions along with the phone number to contact the Heart Failure Clinic nurses. The green light will include signs and symptoms that indicate the patient is maintaining disease stability along with encouragement to continue their current practice.

Intervention participants will receive a weekly phone call during the nine-month study period from clinic nurses who will deliver an empowerment intervention. The empowerment intervention will provide support and information that will assist participants in recognizing their signs and symptoms, maintaining mutually set goals, self-managing their disease process, and improving or maintaining their functional health. A standardized script will provide guidance for nurses during these calls. The telephone call will begin with the nurse asking, “Tell me where you are at with your signs and symptoms today according to the stop light magnet”. If the participant relates that they are in the red or yellow zone the nurse will then ask further questions about the related signs and symptoms and guide them in identifying measures that they need to take in response to their condition report. If the participant relates they are in the green zone they will be asked, “What interventions have you been doing to maintain or improve your condition?” This question will be followed with the nurse asking, “What concerns you
most at this time about your health?” Through the empowerment interventions the participants will be encouraged to share concerns and potential solutions along with any questions they may have. The empowerment interventions are expected to assist in making the participant more aware of their self-management in regard to what is or is not successful, solutions to their health concerns, and available resources for assistance. As participants work with the nurses in this manner to self-manage their disease process it is theorized that awareness of their purposeful participation will result in attainment of self-management goals and improved or maintained functionality resulting in improved quality of life.

Clinic nurses will receive training prior to the beginning of the study in regard to the theory of the intervention and importance of consistent delivery of the empowerment intervention as compared to the standard care. Telephone calls will be audio taped for monitoring of intervention integrity and consistency. Clinic nurses will document a summary of the telephone discussion in the patient’s medical record and will be instructed to review prior documentation before each call to build consistently on the participant’s care goals. At the end of the nine-month study period each intervention participant will receive a questionnaire packet at their clinic visit that they will be asked to complete at that time. The investigator will be onsite and available at the time of completion of the questionnaire packet.

**Instruments**

The Power as Knowing Participation in Change Tool VII (PKPCT) will be utilized to identify purposeful participation in attaining health goals through awareness
that the individual has the ability to participate in goal attainment. Consisting of 48-items
the PKPCT utilizes a semantic differential scaling technique. Four sub-scales are
presented in the form of semantic choices including awareness, choices, freedom to act
intentionally, and involvement in creating change. A one to seven-point interval rating
scale anchored by bipolar adjectives is used to score items with a total scale score from
48 to 336. Higher scores indicate greater degrees of awareness in one’s ability to
purposefully participate in change. Cronbach’s alpha reliability estimates to establish
internal consistency have been reported for the total scale from 0.80 to 0.97 (Shearer et
al., 2007). Factor analysis with item loadings identified from 0.56 to 0.70 provided
verification of content validity in previous studies (Shearer et al., 2007). A reliability
estimate using Cronbach’s alpha for the total scale was reported at 0.72 for a study by
Shearer et al. (2007).

Ware’s Short Form-36 (SF-36) will be utilized to measure the participants’
physical and mental dimensions of functional health. Functional health is defined as “the
extent to which individuals currently perform their normal activities without limitation
from health problems” (Shearer et al., 2007). The SF-36 consists of 36 items that address
aspects of personal health status in a Likert-type measurement. This instrument will
identify physical functioning, role-physical, bodily pain, and general health for the
physical health component and vitality, social functioning, role-emotional, and mental
health for the mental health component. The SF-36 has composite scores ranging from 0
to 100 with higher scores indicating better self-reported personal health and well-being
(Shearer et al., 2007). Cronbach’s alpha to establish internal consistency of the two
summary scores were reported in previous research studies as 0.92 for the physical health component and 0.90 for the mental health component (Shearer et al., 2007). Content validity of 0.56 to 0.90 supported through factor analysis with item loadings on the physical and mental dimensions of health have been identified through previous research (Shearer et al., 2007). Shearer et al. (2007) reported Cronbach’s alpha for their study from 0.72 to 0.86 for the eight SF-36 subscales and 0.93 for the overall 36-item measure.

The Self-Management of Heart Failure (SMHF) scale will be utilized to identify participants’ abilities to maintain illness stability through symptom management. Shearer et al. (2007) define self-management as “the ability to make decisions in response to signs and symptoms. The SMHF includes 22 items that reflect patients’ abilities to maintain illness stability and manage symptoms when they occur. Self-care maintenance behaviors that promote the avoidance of symptoms through treatment adherence and symptom management as they occur are reflected through the scoring of the items. Subscales of maintenance, decision-making, and self-confidence are included. Better self-management is identified through a maximum total score of 27. Shearer et al. (2007) identified Cronbach’s alphas for the SMHF at pretest in their study at 0.62, 0.86, and 0.88 for the maintenance, decision-making, and self-confidence subscales. Content validity was verified by Shearer et al. (2007) through literature review and discussions with heart failure nursing experts while face validity was assessed through patient interview.

The Minnesota Living with Heart Failure (MLHF) questionnaire will be utilized to measure quality of life. This instrument evaluates the effects of heart failure and its treatment on the physical, mental, emotional, and social components of quality of life.
Twenty-one items are scored on a six-point Likert scale (0 = not at all to 5 = very much) to determine over a designated period of time how much each of the 21 items had prevented the heart failure patient from living as they would have liked to (Britz and Dunn, 2010). Higher values are consistent with higher ratings of quality of life. Britz and Dunn (2010) reported findings in previous research of adequate internal consistency with a Cronbach’s alpha of 0.94.

Demographic data concerning gender, age, ethnicity, marital status, education, ejection fraction, and New York Heart Association (NYHA) classification will be obtained from the participants’ heart failure clinic medical records. NYHA classification medical record information will be reevaluated following the intervention period. Readmission rates will also be obtained from the clinic records.

**Statistical Analysis**

Statistical analysis will be performed to evaluate effects of the telephone-delivered empowerment intervention by utilizing two-sample group, repeated-measures analysis of variance (ANOVA). Outcomes of purposeful participation in attaining health goals, functional health, self-management, and quality of life will be examined. The Statistical Package for the Social Sciences (SPSS) will be utilized with Mixed procedure for ANOVA models with random and/or fixed effects and repeated-measures designs. The Mixed procedure allows for within-subjects missing data and differs from ordinary least squares repeated-measures analysis that require complete data for all cases (Shearer et al., 2007).
Limitations

Possible limitations to this study are anticipated to be the sample size as affected by attrition, the affects of co-morbidities on participants, and possible difficulties in participants understanding the Power as Knowing Participation in Change Tool VIII (PKPCT). Due to the study location being limited to one hospital and heart failure clinic it may be difficult to find a sufficient number of participants. The number of participants may be affected by attrition due to increased severity of illness, cessation of participation at the clinic, or death. Co-morbidities may affect participants’ ability to distinguish their heart failure-related functional and self-management limitations and the effects of the heart failure on their quality of life. The original study by Shearer et al. (2007) that this research project is based upon found that some participants might have had difficulties in understanding directions for completion of the PKPCT and this concern may also extend to this study. The addition of the Minnesota Living with Heart Failure questionnaire (MLWHF) and identification of New York Heart Association classification at the end of the study are intended to reduce the limitations found in the study by Shearer et al. (2007).

Summary

The purpose of this study is to evaluate the effects of a nurse-delivered empowerment intervention on the clinically and theoretically relevant outcomes in patients with heart failure; including purposeful goal setting, self-management through resource utilization and perceptions of functional health and quality of life using Rogers’ Science of (Man) Unitary Human Beings (1970) person-environment process as a theoretical framework.
Utilizing a descriptive comparative repeated measures design, the study will take place with 50 adult patients in a 220-bed Midwestern community not-for-profit Heart Failure Clinic. Tools to be utilized will include the PKPCT, SF-36, SMHF, and MLHF questionnaire. Statistical analysis of the effects of the telephone-delivered empowerment interventions will include use of two-sample group, repeated-measures analysis of variance utilizing the SPSS with mixed procedure with examination of outcomes of purposeful participation in attaining health goals, functional health, self-management, and quality of life. Findings from this study will be utilized to provide evidence to be added to the already existing international database.
References


