SELF-CARE BEHAVIORS OF INDIVIDUALS WITH HEART FAILURE
FOLLOWING AN EDUCATIONAL PROGRAM

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ABSTRACT

RESEARCH PAPER: Self-Care Behaviors of Individuals with Heart Failure Following an Educational Program

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Older patients with Heart Failure (HF) are often frail, have limited mobility, and socially isolated, limiting ability to manage self-care and access clinic-based services. Patient self-management programs motivate patients to collaborate in care by teaching self-management. The purpose of this study is to describe elderly heart failure patients’ perceptions of self-care behaviors following an educational program on HF for two groups of HF patients, one with traditional care, and one attending a self-care support educational program. This is a replication of Jaarsma et al.’s (2000) study. The framework is Orem's Self-Care Deficit Theory of Nursing. The anticipated sample will be 50 elderly patients from a heart failure heart failure clinic in Northern Indiana. The Heart Failure Self-care Behavior Scale will measure self-care behaviors of patients with heart failure heart failure. The study will provide information on theory-based behavioral strategies to assist elderly people in recognizing and managing manifestations of heart failure.
Heart failure (HF) is a growing problem worldwide. Around 5.7 million people in the United States have heart failure (Kochanek, Xu, Murphy, Miniño, Kung, 2011). HF is the primary cause of more than 55,000 deaths each year (Kockanek et al.). HF was identified as a contributing cause in more than 280,000 deaths (1 in 9) in 2008 (Roger, Lloyd-Jones, Benjamin, Berry, Borden, 2012). About half of the people who have HF die within 5 years of diagnosis (Roger et al.). The prevalence of heart failure is increasing, consequent to an increased number of older individuals. After age 65, 10 of every 1,000 people have heart failure (American College of Cardiology, 2012).

Heart failure costs the nation $34.4 billion each year (Heidenriech et al., 2011). Hospital readmissions less than 30 days after discharge for the diagnosis of HF, are not fully reimbursable by the Centers for Medicare and Medicaid (CMS) effective October, 2012. This further adds the already staggering financial burden. Strategies to combat heart failure readmissions are essential for organizations to remain financially viable.

Diseases that contribute to heart failure include coronary heart disease, high blood pressure, and diabetes (American Heart Association, 2012). Other factors include smoking, being overweight, eating foods high in fat, cholesterol, and sodium, and Heart Association, 2012). Early diagnosis and treatment can improve quality of life and
life expectancy for people who have heart failure. Treatment usually involves taking medications, reducing salt in the diet, and getting daily physical activity. People with heart failure need to track daily symptoms and follow up with doctors. Self-management is crucial to avoid readmission to the hospital for HF exacerbations.

Adequate self-care behavior related to HF reflects the actions that a patient undertakes to maintain a healthy lifestyle and well-being. Self-care behaviors includes adherence to medication, diet, and exercise, monitoring and self-management of symptoms, daily weighing to assess fluid retention and seeking healthcare when symptoms occur. Patients who are actively involved in care and treatment, and adhere to the regimen, have improved survival rates, and decreased dependence on healthcare providers. The European Society of Cardiovascular (ECS) guidelines stress the importance of self-care as part of successful treatment (Lainscak et al., 2011). The ECS guidelines recommend that health professionals provide comprehensive HF education and counseling that is not only focused on knowledge, but also on skills and behavior (Lainscak et al., 2011).

Older heart failure patients face a number of risks due to lack of mobility, social isolation, and increased frailty. It is important to recognize that this patient population is not always prepared to provide self-care to meet the self-care needs. Self-care is a complex requirement that is very difficult for many older patients to understand; therefore, must be provided with the support and guidance that is necessary to ensure that HF needs are met accordingly. Self-care is an important and influential practice in the ability of patients of all ages to maintain stable health outcomes for a variety of conditions (Koelling, Johnson, Cody, & Aaronson, 2005; Krumholz et al., 2002).
Koelling et al. (2005) argued that the effective promotion of discharge education is a highly useful tool in demonstrating the importance of self-care for HF patients. This population faces a level of vulnerability that is grounded in fear, isolation, and self-doubt, particularly when the patient population is older and without a large social support system (Koelling et al., 2005). Therefore, it is necessary for nurses working with this patient population to share knowledge of self-care, and to demonstrate a level of support (Koelling et al., 2005).


Background and Significance

Heart failure (HF) is a serious and often debilitating condition, especially for older patients who face frailty, limited mobility, and social isolation. For this patient group, it is important to provide adequate patient education programs to promote successful self-care in the home environment (Jaarsma & Van Veldhuisen, 2008; Koelling et al., 2002; Krumholz et al., 2005). However, this group may face critical challenges in administering self-care, based upon diagnoses. Self-care behaviors provide patients with a greater sense of security, and the knowledge necessary to ensure that health is preserved as best as possible (Artinian, Magnan, Sloan, & Lange, 2002). This perspective is significant because quality of life in many older patients is generally poor, and is particularly difficult for HF patients (Jaarsma et al., 2002).
Little understanding of the nature of the HF existed until William Harvey described the circulation of the heart in 1628. Improvement in the investigation of HF followed the invention of x-rays and electrocardiography in 1890’s (Davis, Hobbs & Lip, 2000). The development of echocardiography, cardiac catheterization, and nuclear medicine further improved the diagnosis, and treatment of patients with heart failure. (Davis et al., 2000). Today, techniques to determine HF available include electrocardiography, stress testing, ejection fraction, blood work, and Cardiac computerized tomography (CT) or magnetic resonance imaging (MRI).

Self-care is a complex practice that requires nurses to explore strategies with older HF patients who must administer self-care in the home environments (Chriss, Sheposh, Carlson, & Riegel, 2004). For this group, hospitalization is a difficult process; however, upon discharge, the work to promote recovery and healthcare maintenance remains (Chriss et al.) Therefore, it is necessary that nurses not only provide comprehensive and detailed discharge instructions, but engage follow up and self-care training in the home environment (Chriss et al.).

The educational needs of this group must be identified, and a strategy must be developed to ensure that patients are successful in understanding self-care techniques and in achieving much-needed social support (Kline, Scott, & Britton, 2007). A successful self-care strategy must incorporate the principles of mutual understanding and goal development to encourage older HF patients to maintain health in a successful manner (Kline et al.).

HF patients must be provided with a combined approach to education for self-care in the home environment, supporting the required techniques, as well as follow up
mechanisms, such as telemonitoring between nurses and patients (Inglis, 2010). This may serve as an effective opportunity to encourage patients to continue with self-care requirements while also receiving much needed social support from nurses (Inglis). Patients who recognize that nurses are providing education and support in self-care are more likely to respond when patients realize the benefits of self-care (Smeulders et al., 2010).

Nurses must utilize theoretical frameworks in order to ensure that patient education is effective, and that older patients in particular understand how to administer self-care in homes (Clark & Lan, 2004). It is important to utilize Orem’s general theory of self care as a means of identifying limitations to self-care for older HF patients, such as the limitations of knowing, judgment and decision-making, and regarding courses of action that will achieve the desired results. Nurses play a critical role in determining how to provide self-care education to support specific needs, and to utilize existing theoretical frameworks that will encourage progress for this patient population (Clark & Lan).

By engaging in self-care behaviors, patients have a support system in place with nurses and physicians who support the plan of care, which is both encouraging and motivating in different ways (Artinian et al., 2002). Artinian et al. demonstrated that self-care behaviors are an important and valuable tool for patients with heart failure because reduced dependence upon the healthcare system. Self-care enables patients to maintain some degree of independence over health that is not always readily achieved. The practices are also important because provide further evidence that patients often respond well to individuals who clearly possess a genuine interest in helping overcome specific challenges in health histories and current health status (Artinian et al.).
Support is an important and necessary aspect of the treatment plan that is critical for patients to experience an ongoing recovery and the restoration of health as best as possible (Clark & Lan, 2004). The developments also provide patients with a higher level of self-confidence regarding health status, and the encouragement that is necessary to restore self-interest and enthusiasm, which is often lost for patients who live in isolation and do not have much of a social support system in place (Clark & Lan).

Jaarsma et al. (2002) recognized that the quality of life for many older HF patients has declined significantly over a period of time; therefore, it is necessary for nurses to provide patients with hope and self-confidence that quality of life might improve through routine self-care. Jaarsma et al. found that in regard to quality of life, the only differences between patients with systolic, and diastolic heart failure was the occurrence of ankle oedema, and health-care orientation. The variances in components of quality of life were partly explained by demographics and clinical characteristics. All three dimensions of quality of life were related to ability for self-care (Jaarsma et al.). Jaarsma et al. also determined it could be important to enhance self-care abilities of patients to improve psychosocial adaptation to illness. Further study is needed to validate findings on patient education on self-care and support.

**Statement of Problem**

Patients with HF are faced with many life challenges. Patients with HF are often readmitted to acute care due to lack of knowledge about self-care. Self-care education and support may decrease readmission rates and increase independence (Jaarsma et al., 2002). Education over time may reduce readmission rates and increase independence for HF patients.
Purpose of the Study

The purposes of this study is to describe and compare differences in self-care behaviors in two groups of patients over time following an educational and support program. This is a replication of Jaarsma et al.’s (2000) study.

Research Question

Are there differences in patients’ perception of self-care behaviors following an educational and support program in two groups of HR patients’ overtime, one group that has the traditional program and the other group that has self-care behavior and support program over time?

Theoretical Framework

Orem’s general theory is the framework. The importance of shaping self-care and education is critical to the ability of older HF patients to succeed in preserving health and wellbeing (Orem). This theory proposes the concepts of self-care. A self-care requisite is “a formulated insight about actions to be performed by or for individuals that are known or hypothesized to be necessary in the regulation of an individuals’ human functioning and development, continuously or under specified conditions and circumstances” (Orem, 2001, p. 224). Patients have self-care requisites that become complex with a diagnosis of HF. If the patient has knowledge deficit related to HF self-care behaviors, the action of self-care cannot take place, in turn, leading to a self-care deficit (Orem, 2001).

Definition of Terms

Self Care Behavior: Conceptual.

HF self-care behavior is that a patient undertakes to care for himself to promote health and well-being (Jaarsma, 2000). This definition includes behaviors such as
adherence to medication, diet and exercise, but also refers to behaviors such as seeking assistance when symptoms occur, or weighing daily (Jaarsma, 2000).

**Educational Program - Conceptual.**

A supportive education program was developed to enhance self-care behavior in HF patients (Jaarsma, 2000). The patients and their families were provided with teaching, support, and guidance regarding different aspects of HF and its treatment (Jaarsma, 2000). Self-care education was based on self-care deficit, and tailored for the patients’ needs.

**Self Care Behavior – Operational.**

Data will be collected using the Heart Failure Self Care Behavior Scale (Jaarsma et al., 2000). The 19-item questionnaire lists specific activities related to heart failure. Three dimensions are distinguished on the questionnaire. The first dimension (‘complying with regimen’), covers nine items related to daily weighing, fluid and sodium restriction, medication, elevating legs, measuring diuresis, preventing influenza, visiting the cardiologist and exercising. The second dimension (‘asking for help’), covers six items related to seeking help in case of weight gain, dyspnea, nausea, edema, fatigue and anxiety. The third dimension, (‘adapting activities’) contains four items related to adapting one’s activities to the condition, for example, taking enough rest or spreading activities.

**Limitations**

The Heart failure self-care behavior scale will measure activities specific to HF (Jaarsma et al., 2000). Generalization is limited to due to sample size from a single setting in the Northern Indiana.
Assumptions

This comparative descriptive longitudinal design study replication will be grounded in the following assumptions:

1. Self-care behaviors by HF patients can facilitate improved mobility.
2. Improved self-care behaviors are an integral element of HF management.
4. HF readmissions are preventable with educational interventions.

Summary

The development of a research-based study to recognize the importance of patient education and guidance for self-care for older HF patients is critical to promote a greater understanding of how patients respond to activities in a controlled setting. The purposes of this study are to describe and compare differences in self-care behaviors in two groups of patients over time following an educational and support program. This study will be a partial replication of Jaarsma’s (2000) study. The sample will include 50 heart failure patients. Data will be collected using the Heart Failure Self-Care Behavior Scale (Jaarsma et al., 2000). The tool will be administered over time on self-care behaviors. Orem’s Theory of Self-care will be the framework for the study.
Chapter II
Introduction

Patients with HF must adjust to many life-altering behaviors and are often readmitted to acute care due to lack of knowledge about self-care. Self-care patient education may decrease readmission rates and increase independence of individuals with HF (Jaarsma, et al., 2000). This descriptive correlation study is a partial replication of Jaarsma’s et al. (2000) study. The purposes of this study are to describe and compare differences in self-care behaviors in two groups of patients over time following an educational and support program. Information about self-care behaviors and patient knowledge can help to tailor interventions and education to improve outcomes for HF patient.

Organization of Literature

The literature review covers selected studies associated with the self-care practices of HF patients. The supportive literature reviewed is divided into four sections:

1. Theoretical framework: Orem’s Self-care Deficit Theory of Nursing
2. Meta- Analysis of Heart Failure education
3. Patients’ Perceptions of Heart Failure
4. Outcomes of Heart Failure Educational Programs
**Theoretical Framework**

Orem's Self-Care theory of nursing is the framework for the study. The theory is based on the concept of self-care, where individuals perform learned activities to maintain health and well-being. Orem identified three potential limitations for self-care: the limitations of knowing, the limitation of judgment and decision-making, and the limitation of restrictions on result-achieving courses of action. (Orem, 2001). Orem proposed that human beings throughout the lifespan have self-care agency, defines as the power to develop, and exercise capabilities to know and meet self-care requirements (Orem, 2001).

*Theory of Self-Care.*

Self care can be defined as the activities a person initiates and performs in order to maintain life, healthful functioning, continual personal development and well being (Orem, 2001). Self-care maintenance is further defined to encompass routine symptom monitoring, and treatment adherence. Self-care management in HF is characterized as a process initiated by symptom recognition and evaluation, which stimulates the use of self-care treatments and treatment evaluation. The theory of self care is a foundation for other three inter-related theories; theories of self-care, theory of self-care deficit, and theory of nursing systems (Orem, 2001).

*Theory of Self-Care Deficit.*

According to Orem, self-care agency varies qualitatively and quantitatively throughout the lifespan. A self-care deficit exists when, for health and health-care associated reasons, individuals’ self-care agency proves incapable of meeting therapeutic self-care demands (Orem, 2001). The imbalance between a person’s self-care agency and
therapeutic self-care demand creates the need for nursing care.

*Nursing Symptoms Theory.*

The nursing systems theory proposes once a need is identified, the nurse agent is required to provide care based on the degree of self-care deficit (Orem, 2001). It follows that nurse agency extends to assist individuals with health-associated self-care deficits to know, and meet with assistance self-care demands and to exercise their powers of self-care agency (Orem). Orem described the progression of nursing to include details of the structure, and process of providing nursing care to individuals, families, and communities (Orem). Nursing agency is defined as the power of nurses to design and produce nursing care for others.

*Meta-Analysis: HF*

Extensive research has been conducted on discharge strategy and heart failure outcomes. However, incorporating discharge planning, transitional care, and post discharge management for the heart failure population has not been established. Phillips, Wright, Kern, Singa et al. (2004) conducted a meta-analysis to evaluate the effect of comprehensive discharge planning plus post-discharge support on the rate of readmission, mortality, length of stay, quality of life, and medical costs of patients diagnosed with HF.

Phillips et al. (2004) performed a systematic search of MEDLINE (OVID, 1966-2003). The Medical Subject Headings (MESH) and key words used for the search incorporated the following: heart failure, comprehensive discharge planning, discharge planning, hospital discharge, patient discharge, patient care planning, after care, multidisciplinary care, social support, disease management programs, patient education,
social work, case management, and patient readmission. Inclusion criteria included English language publications addressing HF, described components for inpatient care plus post discharge support, compared the effects with usual care, and reported re-admission rates as the primary outcome.

The patient population was 949 patients, of which 58% were male, with a mean age of 72. In addition, patients with the New York Heart Association Class II-IV were evenly represented. The studies were classified as either interventions with all components plus discharge planning or interventions without hospital discharge planning. Both groups of studies compared intervention to usual care procedures (Phillips et al., 2004).

The researchers extracted the relevant data from the studies in an unblinded standardized manner with detailed examinations of the following: randomization, generation, allocation concealment, double blinding, and loss to follow-up found that the overall relative risk for readmission with the intervention versus usual care was .91 (95% confidence interval; 0.72, 1.16). The effect of more complex programs (discharge planning plus post discharge follow-up) compared to less complex programs was 0.30 (0.04, 2.60) versus 1.00 (0.86, 1.17), and for readmission, 0.09 (0.10, 0.65) versus 0.65 (0.43, 1.00) (Phillips et al., 2004). The more complex programs that included hospital discharge planning, and no delay in post-discharge follow-up, were the most successful. The complex programs showed a trend towards 70% relative reduction in risk for first readmission, fewer hospital days utilized ($p = .02$), and a 70% reduction regarding the risk of HF readmission relative to usual care ($p = .01$). However, a 35% reduction was
observed in the risk for HF readmission with the less complex programs (Phillips et al., 2004).

Phillips et al. (2004) concluded that comprehensive discharge planning, plus post discharge support for patients with HF, significantly reduced readmission rates and may improve health outcomes such as survival and QOL without increasing costs. This results in significant potential savings for the healthcare industry, as reduced readmission rates equal money, supplies and energy saved.

Inglis acknowledged that chronic heart failure can be a devastating condition, one which is often characterized by frequent hospitalizations and an abbreviated life expectancy (2010). While healthcare professionals have been researching a range of ways to bolster self-management programs and post-hospital self-care education, researchers have found that “…the most successful strategies involve specialist multidisciplinary disease management programs” (Inglis, 2010, p. 228). Inglis pointed out that the major problem with specialist services is that many HF patients did not have access to. Inglis attributed this to either a consequence of narrow healthcare resources or inability to attend management programs or distance or disability. Inglis has determined that controlled and strategic telephone support can work as a means of self-monitoring and self-care management, either via a basic telephone technology with data gathered and saved by a computer, or via telemonitoring where physiological data is transmitted (Inglis).

Inglis conducted a systematic review of studies which scrutinized both of the technologies compared above and examined in comparison to traditional care for HF patients, excluding studies that focused on concentrated specialist follow-ups, as such a
phenomenon would perplex the results of the interventions. Thirty studies were selected in the systematic review, with a total of 9,500 patients, all over 65 years of age. In order to be included, the patients in the chosen studies had to have been tracked for three to 18 months (Inglis, 2010).

Researchers scrutinized the numbers of patient deaths in telemonitoring trials versus the control group. Per 1,000 patients, the number of mortalities fell from 150 to 100, determining that “No significant benefit was seen on mortality with structured telephone support” (Inglis, 2010, p. 228). The two interventions created noteworthy falls in the number of patients who required hospital admission for heart failure: per 1000 patients in the telemonitoring group, the number fell from 285 to 225, and in the structured telephone support group the number fell from 213 to 164 per 1000 patients (Inglis, p. 228). Inglis noted that improved quality of life was also reported, as well as beneficial influences on healthcare costs, though not all the studies reported this consistently (2010).

Inglis (2010) eventually concluded that telemonitoring, as well as organized and strategic telephone support, are a direct path to benefits for patients who are suffering from chronic HF. However, Inglis and colleagues caution that currently only very limited specifics are obtainable on the cost-benefits.

Patients’ Perceptions of Heart Failure

Vigilant self-management of heart failure (HF) has been suggested as a viable way to prevent hospital admissions. The preparation of chronically ill patients for self-care has traditionally based on the assumption that patients require certain knowledge and skills about health and medicine, and the ability to take care of themselves. The ability
for patients to have a thorough comprehension of the issues is directly related to possessing adequate health care knowledge of the best current practices for heart failure. Learning needs may vary according to age, education level, and gender. Clark and Lan (2004) conducted a descriptive correlation study that examined the perceived learning needs of HF patients outside of the hospital setting. Naturalistic Decision-Making (NDM) was the framework for this study, which proposes people use experiences to make decisions based on interactions among people, conflicts, and the environment. The NDM framework focuses on cognitive abilities, such as decision making, analysis, situational awareness, and planning all functions which emerge in natural settings (Clark & Lan, 2004).

Patients were studied within home care and outpatient HF clinic settings. The target population consisted of people with HF, to either the home health care agency or the outpatient HF clinic program of one hospital system serving a small-town in a rural community. The study included patients who were at least 18 years of age and had shown awareness of HF diagnoses. A total of 33, (62%) patients out of a possible 53 participated in the study. Of the 53 potential participants, 13 patients were excluded, being unaware of the HF diagnosis. Of the 33 participants, 48.5% were male, and 51.5% were female. The average age was 75.7, and the average years of education were 13. There were 22 subjects from the homecare setting, and 11 from the HF clinic (Clark & Lan, 2004).

The data collection instrument utilized in this study was The Outpatient Heart Failure Learning Needs Inventory (OHFLNI). The OHFLNI contains 46 closed-response items, and one open-ended item that focused upon educational topic areas recommended for HF patients (prognosis, diet, activity, medications, signs and symptoms, risk factors,
psychological factors, and general HF information). The participants were asked to rate each item from 1 = not important to 5 = very important on a 5-point Likert scale (Clark & Lan, 2004).

Participants ranked signs and symptoms (4.36) as the most important topic to learn about and become familiar with, followed by medications (4.13), prognosis (4.11), risk factors (4.08), general HF information (3.87), diet (3.83), activity (3.63), and psychological factors (3.63). Despite the fact that psychological factors were ranked low, this category had an average score of 3.63, which is higher than the midpoint on the scale, and therefore approaches moderately important (Clark & Lan, 2004).

The second research question inquired whether a difference existed in the perceived importance of the educational topics according to gender. Both groups identified signs and symptoms as the most important topic to learn. Medications, risk factors and prognosis were second, third and fourth respectively. There were no differences between the perceived importance of education topics in men and women, according to a one-way analysis (Clark & Lan, 2004).

The last research question asked whether or not a relationship existed between the age or the educational level of the subjects and the educational topics presented. Spearman’s Rho Coefficients were obtained to analyze data. There were no significant correlations found among the variables. However, there was an inverse relationship between age and educational level found (Clark & Lan, 2004).

Findings generated from this study were similar to the findings of previous HF learning needs research studies and conclusions. Diet generally ranked low in perceived importance. Participants commented that food represents one of the few pleasures left in
life, and perceived salt and fluid restrictions as a severe denial of such simple pleasures. Another interesting point of this study was the low rating of psychological factors and patient comments elaborated on psychological issues such as stress and feeling scared at times (Clark & Lan, 2004).

The findings support earlier research, and offer a framework on which to base the development of educational programs for patients with heart failure. Many patients had low levels of knowledge, and lacked a clear understanding of heart failure and the crucial self-care activities to keep the conditions in check. Understanding the disease process can directly affect quality of life and prognosis. The value of educational programs in HF care cannot be underestimated. Health care professionals need to be skilled in assessing the requirements and level of education given to the individual in order to be effective (Clark & Lan, 2004).

Riegel et al. believed a multitude of situational (experience, knowledge), physical (functional abilities, sleepiness), psychological (depression, attitudes), social (social support), and clinical (cognitive) factors affect heart failure self care. The purpose of this study was to explore how HF influences the lives of patients, evaluate how patients perform self-care, and determine how their life situation facilitates or impedes HF self-care (2002).

The sample of 26 individuals with chronic HF was chosen from a large healthcare system in southern California. Subjects were interviewed individually or in small groups using an interview guide to standardize the content acquired. The transcribed interviews were analyzed using content analysis methods. Most of the patients in the sample were elderly, retired, and high school graduates. Patients had been classified as having Class
III or IV using the Specific Activity Scale (SAS), such as poor, and unable to complete tasks requiring five or more metabolic equivalents of activity, gardening or carrying anything up one flight of eight steps. The majorities (53.8%) were married, and only 19% of the patients lived alone. Eight (31%) of the patients were diagnosed within the previous 2 months, and all patients had been hospitalized within the year (Riegel et al.).

The researchers found that the heart failure hospitalization rate was 45.7% lower in the intervention group at 3 months (P=.03), and 47.8% lower at 6 months (P=.01). Heart failure hospital days (P=.03), and multiple readmissions (P=.03), were significantly lower in the intervention group at 6 months. Inpatient heart failure costs were 45.5% lower at 6 months (P=.04). A cost saving was realized even after intervention costs were deducted (Reigel et al.)

Riegel et al.; (2002) reported themes from qualitative data reflecting common challenges of HF patients as physical limitations, coping with treatments, lack of knowledge, negative emotions, other health issues and personal struggles. The researchers concluded that themes in the qualitative data reflected the challenges of living with HF, self-care strategies used, and ways in which patients adapted to the 32 burden of heart failure. Patients have difficulty coping with the treatment, a lack of knowledge regarding HF, personal struggles, and multiple co-morbidities that are barriers to self-care. Facilitators of self-care were: clear knowledge of HF and proper aftercare, maintained control, depended on others for support, and accepted the requirements of managing the disease. Thus it was determined that “The reduction in hospitalizations, costs, and other resource use achieved using standardized telephonic case management in the early months after a heart failure admission is greater than that usually achieved with
pharmaceutical therapy and comparable with other disease management approaches” (Riegel et al.; 2002, p. 705).

Outcomes of Educational Programs

Self-management occurs both when a person is engaging in a healthful behavior, and when not actively managing disease (Lorig & Holman, 2003). By choosing to make healthy lifestyle modifications, or to continue with high risk behaviors, the person is still managing care, just not in a positive or beneficial way. It is impossible not to manage health, since not managing a disease is also a management style. Self-management becomes especially important with a chronic disease, such as heart failure, where improved self-care can have a positive outcome on quality of life. For persons living with heart failure, self-management requires lifestyle changes.

An effective means of preventing recurrent hospitalizations and fostering health-outcomes among patients with HF is to make certain that the knowledge and the quality of self-care used is fitting to the patient’s situation (Artinian et al., 2002). Researchers conducted a descriptive correlational study with the objective of measuring the frequency of performance of self-care behaviors, expressing personal and environmental factors that have a significant consequence on self-care behaviors, and accurately illustrating the relationship between the level of knowledge patients have to empower their performance of self-care and the actual performance of self-care behaviors (Artinian et al., 2002). Orem’s Theory of Self-care provided the basis for this study. The theory is known as the self-care deficit nursing theory, which alleges that a self-care is the most effective, organic and beneficial means of care.
Participants were selected from hospitals in a major metropolitan area of a large Midwestern city. There were 110 participants, 78% were male, average age of 64 years, 63% were black, and 34% white. Forty-two percent reported annual income levels less than $10,000. The majority (67%) of the sample were not married. Participants were given a series of questionnaires that took approximately 30 minutes to complete.

Researchers explained that to measure self-care behaviors, the 29-item Revised Heart Failure Self-care Behavior Scale, and the Heart Failure Knowledge Test were used to assess each patient’s comprehension of heart failure. The self-care behaviors are measured and grouped according to five of the six components of Orem’s described self-care requisites. Patients were asked to indicate how often each behavior was used. Behavior frequency was recorded by means of a Likert-type scale, then a total score was obtained. If all self-care behaviors are performed all of the time, the maximum score possible is 145. Internal consistency reliabilities for the original Heart Failure Self-Care Behavior Scale ranged from 0.62 to 0.68 (Artinian et al., 2002).

The researchers found the five most frequently performed self-care behaviors connected directly to taking prescription medication. The five least often executed self-care behaviors involved symptom monitoring or symptom management, such as reporting more tiredness and weight gain, or monitoring fluid intake or daily weights (Artinian et al., 2002). There were no significant relationships between the total self-care behavior score and any of the basic conditioning factors of age, sex, race, marital status and education. However, basic conditioning factors were examined in relation to specific self-care behaviors, and several significant relationships emerged. With respect to age, younger patients were less likely to discuss anxiety about worsening symptoms or when
nauseated with doctors. Whereas older patients were more consistent in making and honoring doctor’s appointments and meeting the requirements of the therapeutic regimen by taking pills every day, and getting a flu shot once a year (Artinian et al., 2002). Just a single self-care behavior varied significantly by gender; more frequently than women, men reported getting a flu shot once a year.

Findings from the self-care behavior scale were that nine self-care behaviors abounded with noteworthy variations occurring by race. African Americans were more consistent in receiving medical assistance when feeling short of breath; typically would reach out for such assistance upon observing swelling in the feet, ankles, legs, or stomach; and when experiencing nausea or loss of appetite compared with whites. The mean scores for monitoring fluid intake. Whites were more consistent in managing therapeutic regimens related to pill taking and getting a flu shot, as well as non smoking.

Marital status had a significant influence on three self-care behaviors. Non-married participants more frequently rested when were short of breath, monitored fluid intake, and had hope could continue to lead a happy life. However, as Artinian and colleagues found, living arrangements had a greater impact on a vigilant treatment of self-care behaviors than marital status. Behaviors needed to attend to the effects of the disease were significantly less for persons living alone than persons with someone. There was a relationship between the average total knowledge score, and the mean total self-care behavior score, which clearly signified the crucial importance of any level of HF knowledge. Findings are in keeping with Orem’s theory that proposes that knowledge is a power that enables self-care. The researchers concluded that detailed information about the influence of basic conditioning factors on the performance of specific HF self-care
behaviors can help nurses tailor interventions to the patient’s situation (Artinian et al., 2002).

HF knowledge low, correlated with self-care ($r=0.21$, $p=.026$). No significant relationship was found to exist between the self-care score and patient age, sex, race, marital status, income, education, or living arrangements (Artinian et al., 2002). Researchers found younger patients who were less likely to discuss worsening conditions with a doctor ($r=-0.204$, $p=.03$). Older patients were more consistent in keeping appointments ($r=0.229$, $p=.01$), getting an annual flu shot ($r=0.192$, $p=.047$), and taking medicine every day ($r=-0.297$, $p=.002$), as prescribed ($r=0.196$, $p=.04$), and refilled punctually ($r=0.292$, $p=.002$) (Artinian et al.).

African American were more consistent than Caucasians in seeking medical care when experiencing SOB ($t=2.45$, $p=.016$), swelling ($t=2.70$, $p=.008$), nausea ($t=3.07$, $p=.003$), monitoring fluid intake ($t=2.95$, $p=.004$); were more likely to believe they could adjust to life with HF ($t=2.43$, $p=.022$). A more dependable obedience to a medication regimen prevailed in Caucasians than in African Americans ($t=2.38$, $p=.019$). Living arrangements had a more significant impact on self-care, even more so than marital status (Artinian et al., 2002).

Single patients rested more when experiencing SOB ($t=2.16$, $p=.035$), monitored fluid volume ($t=2.40$, $p=.022$), and believed in an imminent happier life with HF ($t=2.04$, $p=.043$) than married patients. Patients living with someone were more likely to experience SOB ($t=2.50$, $p=.014$) and increased fluid ($t=2.42$, $p=.017$) to doctor, and less likely to consume canned foods ($t=2.15$, $p=.034$); however, they reported less physical activity ($t=-2.87$, $p=.034$) than living alone (Artinian et al., 2002).
Artinian et al. determined that patients perceiving a poorer state of health were more likely to reach out for help during SOB ($r = -0.32, p = .01$), and were more careful about monitoring fluid intake ($r = -0.21, p = .028$). Lower income was directly connected with eating canned foods or TV dinners ($r = 0.235, p = .028$). Education was directly connected with a careful watch of intake of canned foods or TV dinners ($r = 0.27, p = .004$), taking medications daily ($r = -0.25, p = .009$), and refilling prescriptions on time ($r = -0.19, p = .048$). Finally, researchers concluded that, “detailed information about the influence of basic conditioning factors on the performance of specific HF self-care behaviors can help nurses tailor interventions to the patient's situation” (Artinian et al., 2002, p. 171).

It has been proposed that up to as much as half of all hospital readmissions are preventable for HF patients. Many admissions are caused by avoidable and preventable failures of health care providers to prescribe optimal treatment, provide appropriate support, education and crucial follow-up. (Krumholz et al., 2002) conducted a prospective, randomized trial using an education and support intervention on 1 year readmission rates for patients hospitalized with heart failure.

The researchers studied patients $\geq 50$ years who met clinical criteria for occurrence of HF on admission to Yale-New Haven Hospital (YNHH) between October 1997 and September 1998. The population was (N=248) made up of 390 patients screened and examined over a 10 month period. (N=248) patients were excluded due to outlined criteria. Eighty-eight patients (44 intervention and 44 control) participated in the study. The median age of patients was 74 years, and 57% were men, and 74% were Caucasian (Krumholtz et al., 2002).
The primary outcome measurement was readmission or death. Secondary measures included the number of all-cause, HF and HF-related or cardiovascular disease related re-admissions. The total number of days of hospitalization during the follow-up time period and the cost of readmissions were calculated. The overall goal focused upon having 40% relative reduction in the total rate of readmission or death, for patients in the intervention group. It was assumed that the control group had a 75% rate of death or readmission. A Chi square test was utilized to compare the characteristics and traits of the two study groups, and the Wilcoxon rank-sum test was utilized to compare the continuous variables associated with the two groups. The Mantel-Haenszel Chi-square was employed to compare the primary outcome of readmission or death. However, the over-arching reliability of the tools was not mentioned in the study. Study limitations were outlined by researchers who identified them—including small sample size and difficulty replicating the study (Krumholz et al., 2002).

The researchers found 25 patients in the intervention group (56.8%) compared to 36 patients in the control group (81.8%) had at least one readmission (or died) during the follow-up time period ($RR = 0.69, 95\% CI: 0.52, 0.92; p = .01$). Patients who experienced more than one readmission during the study included 12 intervention group patients, and 21 control group patients ($RR = 0.57, 95\%$ confidence interval: 0.33, 0.99; $p = .05$). One year after discharge, the intervention group had a total of 49 all-cause readmissions compared to the control group’s 80 readmissions. This was a 39% reduction in readmissions ($p = .06$; (Krumholz et al., 2002).

The readmission rate was relatively low in comparison to more comprehensive studies. Nonetheless, concluded study further supports the benefits of formal education
for discharged HF patients, and supports intervention as elements create substantially reduced adverse clinical outcomes and costs for patients with HF. The authors concluded that education and support have strong, consistent effects on markedly reducing poor outcomes (Krumholz et al., 2002).

Two hundred and twenty-six patients who were admitted to the University Hospital of Maastricht for HF, were asked to participate in the study. The patients had experienced symptoms of chronic HF for 3 months or longer, had been classified by the attending physician as New York Heart Association (NYHA) Class III or IV, and were over 50 years of age (Jaarsma et al., 2002).

Data were collected using the Heart Failure Self-care Behavior Scale, which was developed for this study. This is a 19-item questionnaire with each item listing a specific activity related to HF. For each item, the patient responded with either “yes” or “no.” A total self-care behavior score was calculated by summing all positive answers (range 0–19). The support provided for the validity of the study instruments was adequate with the Chronbach alpha reliability coefficient. However, research on medication compliance demonstrated that self-reporting is not always the most reliable method of gathering data on self-care behavior. However, since the researchers were not related to the care team, this self report may be considered more reliable (Jaarsma et al., 2002).

In this study, it was found that a supportive-educative nursing intervention enhanced SC behavior in patients with HF. Patients from both intervention and control groups increased self-care behavior within 1 month of discharge, probably as a result of hospitalization. The increase in the intervention group however, was significantly greater after 1 month. Although both groups decreased SC behavior during the subsequent 8
months, the increase from baseline remained statistically significant in the intervention group even though this was not the case in the control group. Despite intensive education and support, several patients in the intervention group reported limitations in self-care behavior (Jaarsma et al., 2002).

Self-care behavior can be enhanced by education and support. Limitations were related to knowledge, implying that additional interventions to inform patients are needed. Most patients reported restrictions in judgment and decision-making, implying that patients know how to behave, but choose to behave differently. Behavior strategies such as self-medication, self-efficacy, social support and reinforcement behavioral strategies must be included in education in order to optimize interventions for patients with advanced HF. Research is needed to assess the effectiveness of a discharge management program led by a cardiac nurse that incorporates the latest evidence, guidelines, and tools.

Interventions to improve heart failure self-care should be personalized to address barriers, enhance self-efficacy, and focus on the development of skill in early recognition, monitoring, and management of signs and symptoms and self monitoring for a change in signs and symptoms. The purpose of study was to predict successful heart failure (HF) self-care maintenance in the first 3 months after hospitalization (Chriss, Sheposh, Carlson & Reigel, 2004).

The authors used a convenience sample of 66 patients with chronic heart failure. Participants were registered from two hospitals in southern California. The sample consisted of elderly, primarily female individuals, educated at the high school level or
above. Approximately half of the patients had systolic HF, and the majority was functionally compromised (Chriss et al., 2004).

Self-care maintenance was measured with the maintenance subscale of the Self-Care of Heart Failure Index. Physical functioning was measured at baseline using both the Specific Activity Scale (SAS), and the New York Heart Association (NYHA) functional classification system. The satisfaction subscale of the UCLA-SSI was used to measure social support (Chriss et al., 2004).

Chriss et al. (2004) found that self-care improved over time (F=20.9, p<.001). Significant predictors of self-care maintenance at baseline were age (B=.263, p=.03) and male gender (B= -.296, p=.01). Significant predictors after 3 months were maintenance at baseline (B=.551, p<.001), male gender (B= -.207, p=.045), and low co morbidity (B= -.246, p=.01).

At baseline, the model was significant and explained 14.8% of the variance in HF self-care. Significant forecasters of self-care were having a higher age and a male gender. Chriss et al. found that the seven-variable model including social support, symptom severity, co-morbidity, education, age, gender, and income significantly predicted self-care at baseline (F=2.6, p=.02), and 3 months post-hospitalization (F=6.9, p<.001). Three months later, when the baseline self-care maintenance scores were controlled in the analysis, the model explained 45.3% of the variance in HF self-care. Most of the variance was explained by the baseline self-care score, but male gender and low co-morbidity added an additional 6% of the variance. The researchers concluded that elderly men and with fewer co-morbid illnesses had a higher rate of success when it came to HF self-care (Chriss et al., 2004).
A patient education program and clear post discharge management offer considerable benefits for patients with heart failure. However, the primary advantages of patient education are not completely understood. Koelling et al. conducted a randomized, controlled trial of HF patients and compared the effects of a 1-hour, individualized teaching session with a nurse educator to the standard discharge process (2005).

The setting for the study was at the University Hospital in Michigan. Participants were selected from inpatient services with a diagnosis of heart failure and documented left ventricular systolic dysfunction. Patients, 367 of the 590, screened were excluded from the enrollment. The final sample consisted of 223. All patients completed the 180-day follow-up time period. The subjects that were randomized to receive the teaching session (n = 107) per group had fewer hospitalization days (p = .009) during the 180-day follow up period compared to the patients in the control group (n = 17) who received no education (Koelling et al., 2005).

The combined end point of death or re-hospitalization occurred in 64% of the control group, and in 47% of the education group. In turn, the time to first hospitalization or death was significantly longer for the education group (p = .012). Comparison of the distribution of days hospitalized, and/or dead for the two patient groups was performed with the Wilcoxon rank-sum test. The relative risk of time to an initial event for the education patients used the control patients as a reference (Koelling et al., 2005). Comparisons of normally and non-normally distributed continuous variables found a P<.05. For each of the comparisons, the null hypothesis was rejected for p < .05 (Koelling et al., 2005).
Koelling et al. (2005) concluded that the simple addition of a 1-hour-nurse-educator-delivered teaching session at the time of hospital discharge resulted in significantly improved clinical outcomes, increased adherence to self-care measures, and overall reduced costs of care in patients with systolic heart failure. Compared to controls, the educated group had fewer re-hospitalizations and deaths.

Patients need to increase knowledge of self-management skills to help manage HF with a greater level of efficiency. Kline et al. (2007) conducted a study to investigate the use of supportive educative and mutual goal setting strategies to improve self-management for patients with heart failure. The purpose of the study was to examine whether supportive education interventions and mutual goal setting had an effect on patient management of heart failure and readmission rates. This study was based on Orem’s model, which places a strong emphasis on empowering the patient towards self-care in order to achieve and preserve health (Kline et al., 2007).

The study took place over 12 months. The study involved 88 participants, 31 from each group. To be included in the study, all participants needed to be enrolled in a home healthcare agency and were diagnoses with heart failure.

The Self-Efficacy to Manage Disease in General (SEMDG) (Lorig, Sobel, Ritter, Laurent, & Hobbs, 2001) tool as cited in Kline et al. (2007) was used to measure. The SEMDG was used to measure: the participants’ confidence in ability to take action, manage HF on a regular basis, complete tasks that could reduce doctor visits, reduce emotional distress of HF, and accomplish efforts that would reduce the impact of HF. Scores range from 5 to 50, with the higher the score indicating greater perceived self-efficacy in managing CHF in general (Kline et al.). The SEMDG has internal consistency
of 0.87. Kline et al. (2007) found that all groups were significantly more confident in the understanding of heart failure beyond baseline (p<.001 to p=.036) except at the 6 month mark for the placebo group (p=0.142). All 3 groups had a high level of self-efficacy in managing CHF. The baseline score (M=35.86) was lower for the SE group, than the placebo (m=38.15), and MGS (M=38.56). No significant differences were noted between the 3 groups across the study (Kline et al.).

Kline et al. concluded that mutual goal setting can be helpful in understanding the perspectives of heart failure patients and receptivity to the process of adopting health-promoting behaviors. “Although no significant difference was demonstrated in participants' understanding of heart failure, the supportive-educative group showed a significantly increased self-efficacy in managing heart failure symptoms” (Kline et al., 2007, p. 510). Health care providers should include mutual goal setting in care plans for heart failure patients.

Jaarsma and Van Veldhuisen (2008) acknowledged the extreme health challenge that heart failure poses to the individual and the intensive work that various research organizations have conducted in order to examine the benefits and logistics of illness management programs for this condition. The majority of programs vary widely when it comes to how frequently counseling is used and where other such interventions should take place so management programs in general boast positive results in managing heart failure after the patient is discharged from the hospital (Jaarsma et al., 2008). Regardless of the positive results, the authors stressed the need for more recent and detailed research. The purpose of this study was to examine the results from the Coordinating study evaluating Outcomes of Advising and Counseling in Heart Failure (COACH) as it
scrutinizes the effectiveness of multidisciplinary illness management regimes. The results researchers found in this systematic review were surprising, "While it was the first trial to be adequately powered to examine the effect on outcome, i.e. on the combined endpoint of time to readmission and all-cause mortality, it did not show a significant reduction on outcome" (Jaarsma et al., p. 332). As a result, the findings of this study truly had to be reviewed meticulously.

The COACH study selected 1,023 individuals from 17 centers in the Netherlands. The average age was 71. Thirty-eight percent of which were female and who had been registered after a recent hospital stay for heart failure and observed for a year and a half (Jaarsma et al., 2008). The patients were divided into three groups: a control group which included a schedule follow-up visit with a cardiologist, and two intervention groups with added basic or advanced support by a heart failure nurse (Jaarsma et al., 2008).

According to Jaarsma et al. the patients in the control group had to see a cardiologist every two months of discharge, eventually reducing this number to every 6 months.

Experienced HF nurses offered the two intervention groups education and supporting, sharing self-care improvement strategies and patient-specific educational procedure advice (Jaarsma et al., 2008). The main endpoints of COACH were two: a breakdown of HF hospitalization or death from any reason and the second endpoint was the number of days lost as a result of a hospital stay (Jaarsma et al., 2008).

The COACH study found that for the duration of the 18 months of the study 411 patients had to be readmitted to the hospital or died from any cause (Jaarsma et al., 2008). The group breakdowns are as follows: 42% in the control group, and 41% and 38% in the basic and intensive support groups respectively” (Jaarsma et al., 2008).
days taken from hospital visits was 39,960 in the control group, and in the intervention groups this number was 15% lower, even though the researchers did not find statistically noteworthy (Jaarsma et al., 2008).

An overall trend towards a reduced mortality prevailed in the two intervention groups, though this figure proved not to be reliable as time progressed; interventions groups also had a higher rate of hospitalizations, if only slightly higher, though these visits were shorter (Jaarsma et al., 2008). And even though the study tried to prevent the following from happening, the control group ended up having the highest number of doctor visits.

Jaarsma and associates explained the findings in the following ways. First, the control group already had a superior level of basic care already which most likely explains why the interventions had essentially no effect on the main endpoint (Jaarsma et al., 2008). Secondly, the two interventions may not have adequately prepared and educated patients properly. While researchers did think this reason is probably unlikely, it’s still possible (Jaarsma et al., 2008). Lastly, researchers debated whether or not hospitalization was a good thing or a bad thing, as short hospital visits, such as ones found in the intervention group, might be necessary in helping to relieve symptoms.

Jaarsma et al. concluded that the medical community at large needs to optimize the methods of follow-up protocol for discharged HF patients. A focus needs to be placed on “…optimization of treatment, counseling, education, improving adherence and adequate reactions to signs and symptoms from both health providers and patients” (Jaarsma et al., 2008, p. 332). Jaarsma and associates eventually determine that the HF patients truly have a complexity of care.
The complexity of managing heart failure (HF) can be overwhelming for HF patients. Patients must acquire skills to cope with, and manage the disease in order to maintain a satisfying and worthwhile quality of life. Most self-management programs for heart failure patients emphasize the medical aspects of this chronic condition, without incorporating psychosocial aspects of self-management. Smeulders et al. (2010) conducted randomized, controlled trials on the effects of the chronic disease, self-management programs on psychosocial attributes, self-care behavior, and quality of life, among heart failure patients who experienced slight to striking limitation of physical activity and mobility.

Patients were selected from the heart failure and/or cardiology outpatient clinics of six hospitals were eligible if had been diagnosed with HF and experienced slight to aggravated limitations of their physical activity or general mobility. Eligible patients underwent a baseline assessment, and were assigned to the intervention or control group. A total of 717 patients were eligible for the study; 339 signed consents. The final sample consisted of 317 patients. Control group patients (n = 131) received usual care, consisting of regular outpatient checkups. Intervention group patients (n = 186) received usual care and participated in the standard 6 week self-management program. The program included medical, social and emotional self-management skills. Twenty-one classes were conducted in six hospitals in the Netherlands, and data were collected between August 2004 and January 2007 (Smeulders et al.).

The researchers utilized several different measurement tools. General self-efficacy expectancies were measured by the General Self-Efficacy Scale (GSES) (Sherer et al., 1982), and cardiac-specific self-efficacy was measured by the two sub-scales of the
Cardiac Self-Efficacy Questionnaire (Sullivan et al., 1998). Perceived control was measured by a scale developed by Pearlin and Schooler (1978). The Coping with Symptoms Scale (Lorig et al., 1996) was used to measure cognitive symptom management. Self-care behavior was measured with the European Heart Failure Self-Care Behavior Scale (EHFScBS) (Jaarsma et al., 2003). General quality of life was assessed with the RAND 36-item Health Survey (RAND-36) (Hays et al., 1993), and cardiac-specific quality of life was measured with the Kansas City Cardiomyopathy Questionnaire (KCCQ) (Green et al., 2000) Perceived autonomy was assessed by a visual analogue scale (range 0–100) which determined to what extent the patients were able to conduct their lives as they would like. Symptoms of anxiety and feelings of depression were measured by the Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, 1983). Data analysis was performed using chi-square tests, Mann–Whitney U-tests, and t-tests for independent samples. The researchers hoped to enhance validity and reliability of the data by using measures with psychometric properties (as cited in Sherer et al.).

The findings of the study revealed that directly after the program, statistically significant effects were found for cognitive symptom management (P < 0.001), self-care behavior (P = 0.008) and cardiac-specific quality of life (P = 0.005). No effects were found at 6 month and 12 months in follow-up. The study did have two clear limitations. First, this study was the first randomized controlled trial of its kind, and the researchers solely used self-report measures for physical functioning rather than more objective measures such as the 6-minute walk test (Smeulders et al., 2010).
Smeulders et al. (2010) concluded that educational programs had the greatest impact immediately after the study. The long term effects were not so promising. This stresses the challenge of achieving long-term behavioral change among patients with CHF, particularly regarding psychosocial, more adaptive outcomes such as symptoms of anxiety and feelings of depression, self-efficacy expectancies, and quality of life. More effective alternatives need to be found in nursing care to support self-management behavior by patients with HF, including providing psychosocial care on managing the condition (Smeulders et al., 2010).

Summary

HF self-care behaviors can contribute positively to the health and wellness of HF patients. Heart failure is a condition mainly affecting the elderly, and the majority of patients are above 70 years of age (American College of Cardiology, 2012). The literature consistently recognizes race, NYHA classification, and co morbidities as predictors of HF-related readmission, while age is a predictor linked to both HF-related readmission and poor self-care behaviors (Artinian et al., 2002; Inglis, 2010; Jaarsma et al., 2002; Krumholtz et al., 2002; Phillips et al., 2004). The literature review provided evidence that patients have misperceptions about the disease, little HF knowledge, and poor self-care abilities. These findings support Orem’s theory concept of self-care deficit.

It is well recognized that improving patients’ knowledge of HF and providing support, encouragement, and positive reinforcement of self-care behaviors improves outcomes in patients with heart failure. (Artinian et al., 2002; Clark & Lan, 2004). The literature review revealed that supportive education is effective in enhancing HF self care
behaviors (Chriss et al., 2004; Jaarsma et al., 2000; Jaarsma & Van Veldhuisen, 2008; Phillips et al., 2008) HF self care behavior is described in the Agency for Health Care Policy and Research which includes recommendations for patient with HF concerning diet, medications, and activity (Jaarsma et al., 2000). Additional publications support the behaviors such as symptom recognition and seeking assistance. (Artinian et al., 2002; Jaarsma et al., 2000).

**Summary**

The studies in this review of research literature suggest that characteristics can be identified in the HF population that place patients at high risk for frequent HF-related hospital readmissions, poor QOL, and suboptimal self-care behaviors (Riegel et al., 2002). The literature confirmed the use of supportive educative and mutual goals setting strategies had a positive effect on patient management and readmission rates (Jaarsma et al., 2008; Kline et al., 2007). Compared to controlled groups, like studies concluded that the educated group had few hospitalizations and deaths (Jaarsma et al., 2002; Koelling et al., 2005). A supportive educative environment can improve outcomes for HF patients, especially with follow up over time (Artinian et al., 2002; Clark & Lan, 2004; Chriss et al., 2004; Holman, 2003; Krumholz et al., 2002; Lorig & Holman, 2003).
Chapter III

Methods and Procedures

Self-care models focus upon the physical, social, and emotional needs of the patient. The best patient care models are the models that can be adapted to meet the needs of the patient (Jaarsma et al, 2000). Heart failure patients need education and follow up support to maintain a physical and mental balance when dealing with heart failure. The purposes of this study is to describe and compare differences in self-care behaviors in two groups of patients over time following an educational and support program. The study will evaluate patients’ perception of self-care behaviors over time at 1, 3, and 9 months. Self-care behaviors of heart failure patients, one group that has basic education and the other group that has a supportive educational program. This is a replication of Jaarsma et al.’s (2000) study.

Research Question

Are there differences in patients’ perception of self-care behaviors following an educational and support program in two groups of HR patients’ overtime, one group that has the traditional program and the other group that has self-care behavior and support program over time?
Population, Sample, and Setting

This study will be conducted at a hospital in Northwest Indiana, and will focus on elderly adults above the age of 50 who have been recently hospitalized for heart failure over a period of 9 months. The study will be conducted in La Porte at IU Health La Porte Hospital chronic disease clinic. There are approximately 100 patients admitted to the clinic over 3 months. The anticipated sample size is 50 heart failure patients. To included in the study the will have symptoms of chronic heart failure for 3 months or longer, classified by attending physician as New York Heart Association (NYHA) Class III or IV, were over 50 years of age, and were literate in English. Patients will be excluded from the study if suffering from a co-existing severe chronic debilitating disease, if discharged to a nursing home, with psychiatric diagnosis, previous bypass, angioplasty, or valve replacement surgery.

Protection of Human Rights

The study will be submitted for approval to the Institutional Review Boards (IRB) of Ball State University and IU Health La Porte Hospital’s IRB. The researcher will meet with the participants to explain the risks and benefits of the study. Benefits include awareness of self-care behaviors, and the opportunity to improve outcomes for HF patients. No risks have been identifies with the study. Voluntary participation, including the right of participants to refuse to take part in the study will be explained. Each patient will receive a cover letter with full disclosure of the study. Care will not be affected if participants do not meet participate data. All data will be anonymous.
Procedures

After receiving the IRB approval, the research project will be introduced to and approved by the physician and chronic disease clinic Director in charge of the clinic. The researcher will meet with the nurse practitioner and staff working in the clinic to explain the study.

The researcher will be notified of enrollments to chronic disease clinic with a principal diagnosis of HF by the intake nurse on a weekly basis, including the anticipated discharge date. HF clinic outpatients will be recruited from the daily appointment lists provided to researcher by the clinic manager weekly. Exclusion and inclusion criteria will be examined.

The researcher will invite potential participants to join the study on the first day of a HF clinic visit. The researcher will then give participants a full disclosure of the study. If participants are willing to proceed, a written consent will be obtained.

The researcher will assign participants to either provide “care as usual,” or a “supportive educative intervention.” All patients will be followed for 9 months. The researchers will telephone each patient 1 month after discharge, and visit the patient at 3 months, and 9 months after discharge to administer the heart failure self-care behavior scale. Data on limitations will not be collected during the telephone interview, but only at baseline, 3 months, and 9 months after discharge.

Design

This study will use a comparative descriptive longitudinal design. The purpose of comparative descriptive research is to describe variables and to examine differences in variables in two or more groups that occur naturally in a setting (Burns
& Grove, 2009). Longitudinal descriptive studies a sample of individuals over time to examine patterns of change, growth, or trends across time (Burns & Grove, 2009). This design is appropriate because the intent of this study is to compare two groups and explore for differences overtime at 3, 6, and 9 months.

**Instrumentation**

Data will be collected using the Heart Failure Self Care Behavior Scale (Jaarsma et al., 2000). The 19-item questionnaire lists specific activities related to heart failure. Three dimensions are distinguished on the questionnaire. The first dimension (‘complying with regimen’), covers nine items related to daily weighing, fluid and sodium restriction, medication, elevating legs, measuring diuresis, preventing influenza, visiting the cardiologist and exercising. The second dimension (‘asking for help’), covers six items related to seeking help in case of weight gain, dyspnea, nausea, edema, fatigue and anxiety. The third dimension, (‘adapting activities’) contains four items related to adapting one’s activities to the condition, for example, taking enough rest or spreading activities.

The patient is asked to respond either “yes” or “no.” A total self care behavior score is calculated by adding all positive answers that got these results (range 0-19). Cronbach’s alpha for this scale ranges from 0.621 to 0.68 (Jaarsma). To assess limitations of patients’ behavior, patients were asked about barriers. Patients that selected “no” are asked “why not?” Answers are categorized and differences discussed until mutual agreement was achieved.
Data analysis

Descriptive statistics will be used to analyze study variables and to determine which self-care behaviors patients with HF perform most and least frequently. Mean scores will be calculated for each self-care behavior. Mean total knowledge scores will also be determined. Independent t-test, a parametric analysis technique used to determine significant difference between measures of two samples (Burns & Grove, 2009) and t-tests between groups and ANNOVA over time for each group. Significant results are reported at (p=0.5).

Summary

In this chapter the methods and procedures to be used for this study are described. The specific variables examined will be readmission and mortality rates. An experimental study design will be used with the anticipated sample numbering approximately 50 participants. Data will be collected overtime using Heart Failure Self-Care Behavior Scale. Data will be analyzed with descriptive statistics and correlation analyses at the 0.05 significance level. This study will replicate a previous study by Jaraasma et al. (2000) and how a supportive educative program can be effective in enhancing self care behaviors of heart failure patients.
References


