

CONGESTIVE HEART FAILURE: EFFECTS OF MUTUAL GOAL SETTING

A RESEARCH PAPER

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Abstract

REASERCH SUBJECT: Effects of Mutual Goal Setting on Quality of Life in patients with Congestive Heart Failure

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Congestive Heart Failure (CHF) is a common chronic condition among the American population and the single most frequent reason for hospitalization. The quality of life for CHF patients is often poor, which may increase disease exacerbations and re-admissions to acute care facilities. Little is known about how nursing activities, such as mutual goal setting, can affect quality of life in patients with CHF. The purpose of the study is to examine the effects of mutual goal setting on quality of life in CHF patients. This is a replication of Rogers' (2002) work. The organizing framework for this study is King's (1981) goal attainment theory. Patients with CHF who do and do not participate in a nursing intervention of mutual goal setting will be compared for degree of quality of life. An estimated sample of 100 CHF patients in two acute care settings will be used. The Minnesota Living with HF Questionnaire (Rector, 2005) will be utilized to collect data. If interventions can be identified that will promote mutual goal-setting in CHF symptoms, fewer exacerbations of the disease may occur and quality of life for these patients may improve

Chapter I

Introduction

Introduction

Congestive heart failure (CHF) is a chronic condition and a major health problem in the United States. Congestive heart failure affects nearly 5 million Americans, and roughly 550,000 new cases are diagnosed each year (Haines, 2005). The prevalence of CHF has reached 0.2%-0.4% in the general population and up to 17% in people over 70 years of age (Rector, 2005). Total treatment costs for CHF in the United States, including physician visits, drugs, and nursing home stays, range from \$10-38 billion, making it one of the most expensive medical conditions to treat. The National Heart, Lung and Blood Institute (NHLBI) reports that CHF accounts for 260,000 deaths a year, with another 219,000 related in some way to the condition (NHLBI, 2007). An increase in the incidence of CHF is expected, as people live longer (Berlin, 2001).

CHF is the fastest-growing cardiac disease in the United States. Nearly 1 million hospital admissions for CHF occur yearly, nearly double the number seen 15 years ago. Re-hospitalization rates during the 6 months after discharge are nearly 50%. Two percent of the total hospital admissions nationwide are for CHF. The average hospital stay for CHF is 6 days. An estimated 23 billion dollars is spent yearly on inpatient management; 40 billion dollars are spent annually on outpatient care (Zevitz, 2006).

Patients with CHF have a reduced quality of life related to persistent discomfort, shortness of breath, and a limited range of physical activity and independence. Although there is no cure for CHF, the condition can be treated with varying degrees of success. Research has examined ways to prevent CHF, modify its effects on quality of life, and

prevent hospitalizations that are painful and expensive. Reoccurrences of CHF exacerbations are the leading reason for hospital re-admissions in America, yet the length of hospital stay that insurance companies are willing to pay for is decreasing. Therefore it is imperative to determine what can be done to prevent exacerbations and decrease hospital re-admissions. Health care providers are searching to find different strategies to improve care of the CHF patients at home (Akosah, Schaper, Havlik, Barnhart, & Devine, 2002). Home-based nursing care and patient self-management are both becoming the norm.

According to the National Heart, Lung, and Blood Institute (2007), more than 65,000 people with CHF receive home health care each year. Some evidence exist that comprehensive disease management programs in the home can result in improvement in event-free survival of CHF, but research has been unable to define conclusive, community based interventions (Akosah et al., 2002). Further research suggests that an intervention focused on mutual goal setting can improve the self-management of CHF, but more research is needed. This study proposes to examine the effects of a mutual goal-setting intervention on the self-management of CHF in home settings.

Background and Significance

Congestive heart failure (CHF) is a condition where the pumping action of the heart is not adequate and the heart is unable to pump enough oxygenated blood to the other organs of the body such as the brain, liver and kidneys (Kulick, 2008). The heart is still working but not as efficiently or effectively. Varying degrees of severity and chronic states of CHF can last for years. CHF can affect the right side, the left side, or both sides of the heart. Eventually as the heart's pumping action worsens, the blood flow from the

heart decreases, which causes the blood returning to the heart through the veins to back up. This back-up causes congestion in the body's tissues and an overload of fluid occurs. Edema accumulates in the ankles, legs, and abdomen. In addition, fluids often accumulate in the lungs (Kulick, 2008).

CHF in History

Ancient Greek and Roman texts contain descriptions of patients with what may have been heart failure, but there was little understanding of the disease. At that time in history, heart failure was believed to be an imbalance between opposing humors. In the third century BC, human dissection and physiological experiments were beginning to be done, and some understanding of how the heart contracts became known. It was not until 1628 that the circulation of the heart was described. In 1715, Raymond Vieussens published a clear description of the physiological basis for the signs and symptoms in a patient with mitral stenosis, then the most common cause of heart failure (Katz, 2008).

Beginning in the 18th century, physicians focus turned to the abnormal structure of the failing heart. During World War II, operations on the human heart became feasible when shrapnel was removed from the hearts of the wounded. Prior to World War II operating on the heart had been thought to be extremely dangerous. Technology related to the diagnosis and treatment of heart failure has progressed and evolved steadily over the last 40 years. In 1940 cardiac catheterizations began to be performed and the development of open-heart surgery and prosthetic valves began in the 1960s (Katz, 2008).

Causes of CHF

Although CHF can sometimes develop suddenly, for the most part heart failure is almost always a chronic, long-term condition. In the United States, the two most common

causes of CHF are coronary artery disease and hypertension. These two conditions gradually leave the heart too weak or stiff to fill and pump efficiently. Less common causes include viral infections, stiffening of the heart muscle, thyroid disorders, congenital septal defects, valvular conditions and disorders of the heart's rhythm (Haines, 2005). The symptoms of CHF can be moderate to severe and the intensity of symptoms varies for each individual, depending on the cause and which side of the heart is affected (Haines, 2005).

Left-sided Heart Failure

Left-sided heart failure is the most common form of CHF. It is the result of left ventricle failure. It is a life threatening condition caused by the heart's inability to pump enough blood to the rest of the body. Eventually as the heart's pumping action becomes worse and the blood flow out of the heart slows, fluid accumulates in the left ventricle and backs up into the lungs (Kulick, 2008). Symptoms of left-sided heart failure include shortness of breath, palpitations, irregular or rapid pulse, cough, fatigue, weakness and fainting, weight gain from fluid retention and decreased urine production. The poor physical condition, emotional distress, and frequent hospital admissions of CHF patients contribute to a decreased quality of life (QOL). A better QOL can occur with proper medical and lifestyle management along with a better understanding of CHF.

Right-sided CHF

According to the American Heart Association (2008), one in twenty people develop right-sided heart failure. Right-sided heart failure is caused by the right ventricular failure and inability of the heart to pump blood effectively. The right ventricle pumps de-oxygenated blood into the lungs to replenish it with oxygen. Right-sided heart

failure is usually a result of left-sided heart failure. When the left ventricle fails, increased fluid is forced back into the lungs, which increases pressure in the heart's right side. The right side then fills with fluid and loses the ability to pump effectively. When the right side loses pumping power, blood backs up in the body's veins, the liver and the gastrointestinal track, causing congestion of fluid throughout the tissues of the body. Edema of the ankles, legs, abdomen and lungs develop. Symptoms include weakness, fainting, palpitations, shortness of breath, and a fast irregular heart beat. These symptoms interfere with daily activities and have an adverse affect on the person's quality of life.

CHF: A National Health Issue

In 1948, a thirty-year study known as the Framingham Study was undertaken (Dawber, Kannel, Revotskie, Stokes, Kagan & Gordan, 1959). The study consisted of 5127 people aged 30 to 62 years who were negative for the signs of heart disease. The participants underwent a complete physical examination every two years. The study took place over thirty years and provided priceless information for predicting heart disease. According to the Framingham study, the lifetime risk for CHF is 1 in 5 for both men and women. For CHF occurring in the absence of myocardial infarction, the lifetime risk is 1 in 9 for men and 1 in 6 for women, and is largely attributable to hypertension (Framingham, 2008).

Among the 28 focus areas in Healthy People 2010 (Healthy People, 2008), heart disease is clearly a key topic, as it is a primary cause of mortality and morbidity. Any efforts to improve quality of life or extend quality of life requires an improvement in the condition of those patients with heart disease in general and congestive heart failure in particular (Healthy People 2008). As the elderly population will nearly double in the next

several decades, CHF will become a problem of extraordinary proportions. CHF is being described as the next global epidemic. Medicare spends more on CHF than it does on all forms of cancer combined. The yearly direct cost of CHF care is anywhere from 10 to 38 billion dollars US. Most of this cost comes from hospital stays for exacerbation of CHF symptoms (Abraham, 2002).

According to the National Health and Nutrition Examination Survey, almost 1.4 million of those diagnosed with CHF are under 60 years of age and the prevalence of the disease is equal in men and women. Incidence increases with age. For people 45 to 55 years old, CHF incidence is 1% to 2% per year, but it is 10% for people over age 84 (Centor, 2008). Increasing prevalence, hospitalizations, and deaths have made CHF a major chronic condition in the United States.

Half of the patients diagnosed with CHF will be dead within 5 years. Each year, there are an estimated 400,000 new cases. The National Heart, Lung, and Blood Institute (2007) states that CHF is the first-listed diagnosis in 875,000 hospitalizations, and the most common diagnosis in hospital patients age 65 years and older. In that age group, one fifth of all hospitalizations have a primary or secondary diagnosis of heart failure. These statistics show the severity of the condition.

Treatment for CHF

Patients with CHF have a reduced quality of life. The Mayo Clinic (Mayo Clinic, 2008) defines CHF as a progressive disease, but treatment can slow the illness down thus increasing QOL. Many conditions that lead to CHF are irreversible, but CHF is treatable. The main goals in treating CHF are to reduce the workload of the heart, improve the function of the heart, and to reduce the fluid and salt retention of the body. Treating the

signs and symptoms of CHF and preventing exacerbations is the main focus of care. Signs and symptoms can be improved with medication and lifestyle changes. Control of underlying conditions such as coronary artery disease, high cholesterol, obesity, high blood pressure and risk factors such as reducing salt intake, exercising, stress management and treating depression can all help ease the strain on the heart thus improving quality of life.

Treatment for CHF includes ACE inhibitors to dilate arteries and lower blood pressure, diuretics to help with fluid retention, and beta blockers to improve the flow of blood throughout the body, and an oral inotropic agent such as Digoxin to help the heart pump and contract more efficiently. New advances in medications have improved survival in heart failure, but research has consistently shown that treating the physiologic side of CHF is not enough for these patients. Psychological, behavioral, environmental, social and socioeconomic variables also need to be considered to increase the patient's ability to manage this chronic illness.

Common nursing interventions include helping patients to increase oxygenation, increasing physical activity tolerance, and educating patients on the importance of life style and diet modifications. Modification of lifestyle is probably one of the most important and most neglected aspects of CHF treatment. The essential elements of engaging patients in self-management techniques and adhering to the complex medical regimens for CHF treatment have not yet been identified (Granger, Moser, Germino & Harrel, 2006). A promising nursing intervention, the setting of mutual goals for self-management of CHF, requires further testing.

Statement of Problem

CHF is an expensive and uncomfortable chronic condition that markedly reduces quality of life for millions of Americans. While it can be treated and the effects on quality of life mitigated, the best ways to manage it are not yet definitive. Key goals are to improve functional ability, reduce discomfort, and limit hospitalizations. More research is needed to determine the best approaches for self-management of CHF in homes and communities.

Purpose of Study

The purpose of the study is to examine the effects of mutual goal setting on QOL life in CHF patients in their homes. Mutual goal setting is recommended as an intervention for disease management and health promotion by King's (1981) goal attainment theory. Patients with CHF who do and do not participate in a nursing intervention of mutual goal setting will be compared for degree of quality of life.

Research Question

The research question that guided this study is: What is the effect of a mutual goal setting intervention on quality of life in patients with CHF who are receiving home health care?

Conceptual Framework

The organizing framework for this study is King's (1981) Theory of Goal Attainment. King's overall goals for nursing were to promote health, care for the ill, and prevent disease. King proposed a theory for nursing that focused on goal attainment through interactions and transactions between nurses and patients. The fundamental assumption of the Theory of Goal Attainment is that nurses and patients/clients relay information, set goals together, and act to obtain the goals (George, 2002).

King's (1981) goal attainment theory contains concepts taken from King's general systems approach and provides a foundation for the exchange of information between humans and their environment. Key concepts of the theory include interaction, perception, communication, transaction, self, role, stress, growth and development, time, and personal space.

King's (1981) framework speaks to three levels of systems—individual or personal, group or interpersonal, and society or social. The Theory of Goal Attainment speaks to the importance of interaction, perception, communication, transaction, self, role, stress, growth and development, time, and personal space. Interaction can be defined as behaviors, verbal and nonverbal, of two or more individuals in common company,

King (1981) emphasizes that both the nurse and the client bring important knowledge and information to the relationship and that they ideally work together to achieve goals. Research has offered some initial support for the notion that, when the nurse and client communicate and work together toward mutually selected goals, the goals are more likely to be attained (George, 2002).

Definition of Terms

Mutual Goal Setting

Conceptual Definition: Process of collaboration between nurse and patient to identify patient goals for self-management and to identify the means to attain them (Kline, Scott & Britton, 2007).

Operational Definition: Nurses in this study will follow a plan of care for a CHF patient that includes scripting to enact mutual goal setting during delivery of home care for CHF. Goals the patient wishes to meet and goals the nurse wishes the patient to meet

will be negotiated and a plan of care formed to address each. Follow-up will be designed and scripted.

Quality of Life

Conceptual Definition: All factors related directly and indirectly to health status (Berlin, 2001), including physical, emotional, social and mental dimensions.

Operational Definition: Total score and subscale scores on the Minnesota Living with Heart Failure Questionnaire (MLHFQ) (Middel & Bouma, 2001).

Home Health Care

Conceptual Definition: Nursing care delivered by registered nurses in patients' home.

Operational Definition: Nurses who participate in this study will deliver the mutual goal setting intervention in CHF patients' home.

Limitations

This study has limited generalizability due to the small sample from one geographic area. A second limitation is that numerous nurses will be delivering the intervention to patients and consistent delivery may be variable.

Assumptions

The following assumptions underlie this study:

1. Nurses and patients can relay information, set goals together, and act to achieve the goals.
2. Patients will respond honestly to study instrumentation.
3. Nurses will deliver the mutual goal setting intervention as consistently as possible.

Summary

CHF is one of the most costly and debilitating diseases in America today. CHF decreases the length, as well as quality, of the patient's life. Reoccurrences of CHF exacerbations are the number one reason for hospital re-admissions yet the length of hospital stay that insurance companies are willing to pay for is decreasing. Therefore, it is imperative to determine what can be done to prevent exacerbations and decrease hospital re-admissions. Health care providers are searching to find different strategies to improve care of the CHF patients at home. Home-based nursing care and patient self-management are both becoming the norm, which is why research on patient education and improving management of the disease is so important.

Patients need to be better educated and more self-sufficient due to the decreasing amount of time they are allowed to stay in the hospital. CHF patients who are educated about their disease are in a better position to participate and manage their care (Mangan, 2003). If interventions that build on mutual goal setting can be identified that will positively impacts the ability of patients to self manage their CHF symptoms, fewer people would have to be treated in hospitals and their quality of life would improve.

Chapter II

Literature Review

Introduction

Literature suggests that nursing management of patients with Congestive Heart Failure (CHF) is complex and multi faceted. Research evidence indicates that nurses must target issues such as education, self-care, number of hospital re-admissions and quality of life (QOL) in patients with CHF. The patient with CHF must be able to make daily decisions about diet, medications, activities, and rest and monitor for signs and symptoms of the disease. It is imperative that the patient obtains a realistic understanding of CHF and appropriate goals for self-management and self-care (Akosah et al., 2002).

The nurse can have a positive influence on self-management of CHF. Nurses play an important role in support, education and counseling of this population. Behavioral changes are challenging to any population and especially to the CHF population. Research specifically suggests that mutual self-goal setting is important in the care of the patient with CHF. Whether nurses can promote mutual goal setting in order to increase the CHF patients' QOL and ability to self-manage their disease and to thereby decrease costly hospital re-admissions as concluded by Rogers (2002) is the hypothesis of this study. Management of CHF patients in an outpatient setting is a common nursing responsibility. Helping patients to formulate and institute goals on how to manage their disease is imperative. HHC is an appropriate place to determine if mutual goal setting between patient and nurse will improve the CHF patients' QOL.

The purpose of the study is to examine the effects of mutual goal setting on QOL life in CHF patients in their homes. Mutual goal setting is recommended as an intervention for disease management and health promotion by King's (1981) goal attainment theory. Patients with CHF who do and do not participate in a nursing intervention of mutual goal setting will be compared for degree of quality of life. The research question that guided this study is: "What is the effect of a mutual goal setting intervention on quality of life in patients with CHF who are receiving home health care?" This chapter contains a review of the literature relevant to this proposal.

Conceptual Framework

The Theory of Goal Attainment (King, 1997) emphasizes the interpersonal systems and relationships that are created between nurses and patients (George, 2002). There are three main propositional statements in King's Theory of Goal Attainment:

1. Accuracy in perception and agreement on roles, along with interaction and communication leads to implementation of goals.
2. These transactions are enhanced by growth and development.
3. Patient satisfaction is a result of goal attainment (George, 2002).

King (1981) believed that nurses help patients increase QOL through exchange of information. This helps patients' understand and attain needed goals to live with a chronic illness or disease. The concepts illustrated in King's goal attainment theory increase the degree of self-efficacy in patients' with CHF, leading to a better QOL. Interaction can be described as behaviors, verbal and nonverbal, of two or more individuals in common company.

Perception can be viewed as each individual's reality of a situation. Communication is face-to-face, written, or non-verbal interaction. It is the exchange of data between two or more individuals. Transactions are interactions between individuals. The purpose of transaction is to reach a goal or goals worthwhile to both participants. Self can be explained as an open system that is ever changing. The actions taken are geared toward reaching goals. Role is the expected behavior related to the position of a person (such as the nurse (George, 2002)).

Stress is a positive or negative influence on an individual that cause him to continue to interact with the environment to maintain order and balance. Growth and development are constantly occurring and are cellular and molecular changes happening to an individual. Time is a period between two events. Time can often perceived differently by each individual. The definition of space is; the physical area that occurs in all direction and is the same in each direction (George, 2002).

According to King (1981), these concepts are related in every nursing encounter and are the same concepts listed for King's conceptual system (George, 2002). Interactions can be inhibited by stress from role conflict felt by the nurse, the patient or both. But nurses can communicate specialized skill as well as knowledge, mutual goal setting and goal attainment can occur (Sieloff, 2002).

King (1981) believed that the nurse could help the patient attain and maintain a better QOL through exchange of information to help the patient understand and attain needed goals to live with a chronic illness or disease. Increasing the level of self-efficacy for patients with heart failure may lead to better quality of life for the patients. The

Theory of Goal Attainment focuses most on the interpersonal systems and the relationship that is established between the nurse and patient (George, 2002).

Using King's (1997) goal attainment theory as a guideline, nurses and patients communicate and relay important information regarding patients' health. They set and work to achieve goals through interaction. In this study, patients with CHF who do and do not participate in a nursing intervention of mutual goal setting will be compared for degree of QOL.

The theoretical framework utilized for Rogers' (2002) study was a combination of King's (1997) goal attainment theory and Bandura's (1991) self-efficacy theory. Rogers believed that the two theories could be complimentary and guide the study of goal setting through self-efficacy for patients with CHF, which should lead to better QOL for the patients. Rogers combined the two theories and named the new theory the Combined Model of Mutuality and Self-efficacy (CMMS). The CMMS includes the variables of mutual goal setting, self-efficacy, management of CHF, and goal attainment. The focus of Roger's study was to examine the relationship between the nursing approach of mutual goal setting and the self-efficacy of the patient with CHF to self-manage his or her disease. This study is a partial replication of Rogers' work.

Mutual Goal Setting

Since this proposed research partially replicates Rogers' (2002) research, an overview of Rogers' work follows. The purpose of Rogers' study was to examine and evaluate the effects of mutual self-goal setting on improving the outcome and self-efficacy in CHF patients managing their care at home. This study was a secondary analysis of previously

collected data. The research question asked in the study was whether setting mutual self-goals increases the efficacy of self-management in patients with CHF.

In Rogers' study, demographic information was collected on age, educational level and length of time with CHF. No data were collected on gender, ethnicity or grade of CHF. A criterion for inclusion in the study was the diagnosis of CHF. There were no criteria for exclusion noted in the study. Descriptive statistics were used to describe the sample demographically. Mean age of the control group was 75.7 years, and mean age for the mutual goal-setting group was 76.95 years (Rogers, 2002).

The sample consisted of 54 participants who had a primary diagnosis of CHF. The participants were randomly assigned, with 31 participants placed in the control group and 23 participants placed in the mutual goal setting group. These participants were all patients enrolled in two different home health care agencies. The control group received home health care routine teaching. The other group received a mutual goal setting (MGS) intervention, provided by nurses and based on the Agency for Health Care Policy and Research (AHCPR) guidelines (Madigan, Schott & Matthews, 2001). The AHCPR guidelines were established in an attempt to standardize the evaluation and treatment of diseases or conditions with high prevalence (Rogers, 2002).

Data were collected at the beginning of the study, at 3 months and 6 months. The variables for this study were measured using The Chronic Disease Self-Management Tool from Outcome Measures for Health Education and other Health Care Interventions. This tool is a self-administered scale for measuring health behaviors, health status, self-efficacy, and health care utilization. Data were utilized from the primary study for the secondary analysis (Rogers, 2002).

The Statistical Package for the Social Sciences (SPSS) was used to analyze data. The SPSS is a widely used software product that allows one to summarize data and determine significance between groups. Significance was set at $p < .05$. Independent t-tests were used in this secondary analysis to examine if there was a significant difference in the mean self-efficacy scores between the groups and test the research question. Chi-square analyses and cross tabulation checked for differences between the two educational groups and differences in the length of time either group was diagnosed with CHF (Rogers, 2002).

Results from Rogers' (2002) study determined that the nursing intervention of mutual goals settings with the patient does have a significant effect on the patient's self-efficacy ($t = -2.12$, $df = 36$, $p = .04$). This significant finding was found in the 6-month posttest scores. No differences were found at other time intervals. More studies are needed to test this relationship in other samples. This finding indicates that mutual goal setting provides a higher level of self-efficacy in a patient's self-management of their CHF.

In another study that specifically explored MGS, Kline, Scott and Britton (2007) examined supportive educational (SE) interventions, mutual goal setting (MGS) and self-management in patients with CHF. Kline et al. noted, in introducing the study that 31.4% of patients accepted into home health care (HHC) have a diagnosis of CHF. Management of CHF patients in an outpatient setting is a common nursing responsibility. The study was an experimental, longitudinal repeated measure study. The research question asked was: Is there a difference among individuals in 3 treatment groups (placebo, SE, MGS) in

their understanding of CHF and their self-efficacy in managing CHF in general (Kline et al., 2007)?

The theoretical framework utilized in this study was Orem's (2001) conceptual model of nursing practice. Orem's approach teaches self-care management strategies and was used for the SE group. King's (1981) conceptualization of mutuality and theory of goal attainment were also used with the MGS group. King believed that through collaboration, nurse and patient goals could be obtained (Kline et al., 2007).

There were 88 participants. All were enrolled in one home health care (HHC) agency. Criteria for inclusion included being 18 years of age or older, receiving HHC, diagnosis of CHF, and speak and understand English. All participants signed informed consents and baseline data were collected within 2 weeks of entering the study.

Participants were randomly placed into one of the three nursing approaches. All participants received the usual care provided by the HHC staff. Interventions for the 3 nursing approaches were administered weekly in 1 hour or less sessions (Kline et al., 2007).

The study took place over 8 weeks. The placebo group received instructions about general health promoting topics of skin and foot care, injury prevention, insomnia, dental care, and food borne illnesses. The SE group received information on self-care management of CHF, and living with CHF. Support was also given to caregivers and help on developing plans about what was needed to self-manage the disease. Information given was from the AHCPR and paper copies were given to the participants. The MGS group was given information after collaboration between the participant and the HHC

nurse on what goals the participants wanted to try to achieve. The AHCPR guidelines were also given to this group (Kline et al., 2007).

Data were collected over a 12-month period (Kline et al., 2007). Demographic information was collected at the first visit and included gender, age, marital status, education, annual income, length of disease, and insurance provider. The sample was 56% (n=49) women and 44%, (n=39) men; mean age was 75 ± 12.3 years. The General Counseling tool was developed for this study to determine the participants' confidence in understanding management of CHF. Scores on this tool were measured at 3, 6, 9, and 12 months. Scores range from 13 to 130, with higher scores indicating greater perceived confidence. All groups were significantly more confident in understanding CHF after baseline ($p < .001-.036$) except at 6 months for the placebo group.

The Self-Efficacy to Manage Disease in General tool (SEMDG) (Lorig, Sobel, Ritter, Laurent, & Hobbs, 2001) was also administered. The SEMDG used a Likert scale to measure the participants' confidence in their ability to take action if needed, manage the CHF on a regular basis, and complete tasks that could reduce visits to the doctor, reduce emotional distress of CHF, and accomplish efforts that would reduce the impact of CHF. Scores range from 5 to 50, with the higher the score indicating greater perceived self-efficacy in managing CHF in general (Kline et al., 2007).

Data were analyzed using the SPSS. 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., 2007).

In conclusion, the MGS groups did not have higher scores than the other group, possibly due to the fact that the MGS participants picked goals that were not related to managing their CHF. Perhaps other pressing matters of daily life need to be dealt with before the participant can attend to education on management of CHF. Limitations of the study could be the small sample size. It is unclear if the reason the analyses showed no significant differences between the groups in understanding or self-efficacy in managing CHF was due to the sample being too small to detect a difference. Findings in this study suggest that the development of a CHF program in HHC that would raise understanding of management of CHF may improve health care outcomes, including QOL (Kline et al., 2007).

Home Care and Re-admission Rates

In a study that focused on home care for CHF, Vallandingham (2006) examined the correlation between home care visits and the reduction of hospital re-admission rates. The researcher believed it was important to determine whether follow up treatment of patients in the home setting after discharge from the hospital decreases re-admission rates for the CHF patient thereby improving QOL. The purpose of this study was to determine if there is a reduced re-admission rate to the hospital in CHF patients that are seen by nurse practitioners (NP) and physicians in their home settings. The research question asked was whether CHF patients who were 65 years of age or older have fewer re-admissions to the hospital after participating in the home visitation program than they did 90 days before participation. The study incorporated weekly visits by the NP and had a timeframe of three months (Vallandingham, 2006).

The theoretical framework utilized was the Quality Assurance Model Using Research (QAMUR) (Watson, Bulechek, & McCloskey, 1987). The QAMUR is a framework that provides nursing professionals with a bridge to link practice and education through the integration of research (Vallandingham, 2006).

The study took place in a Midwest Home Health visitation program. The convenience sample consisted of 31 participants, 10 males and 21 females. The mean age of the participants was 77 years. Criteria for inclusion in the study included an ejection fraction of less than 40%, age of 65 or older, diagnosis of CHF, and were living independently. Race of the sample included 67.7% white, 29% black and 3.2% Hispanic. Exclusion criteria were 64 years of age or less, having missed more than 50% of the home visits, and having no diagnosis of CHF (Vallandingham, 2006).

The design of the study was a repeated measures correlational study. It was a quantitative study that utilized retrospective chart audits. This design was used to provide a retrospective view of the patient and analyze outcomes 90 days prior to and 90 days after the initiation of the study (Vallandingham, 2006). A data collection tool was used to collect information from the participants' charts. Information collected by the tool included age, gender, race, echocardiogram results, date of program enrollment, co-morbidities, home support and number of admissions to the hospital before and during enrollment. The number of home visits completed was also monitored (Vallandingham, 2006).

The study concluded that the number of hospital re-admissions decreased significantly after enrollment in the program ($p < 0.001$). The average number of re-admissions decreased from .633 to 1.367 with a 97% confidence interval. Statistical

analysis demonstrated that gender was not a significant factor in the study (Vallandingham, 2006).

The study showed a link between number of completed visits and re-admission rates. The more visits completed, the less number of hospital re-admissions were noted. Vallandingham (2006) believed that the results inform healthcare practitioners about the benefit that the advanced nursing practice role can have in maintaining quality of life in the CHF patient. Cost analysis of the program was not reported (Vallandingham, 2006).

Burford (2000) conducted a study to pursue a similar line of research, specifically to explore factors that are predictive of re-admission to the hospital in elderly CHF patients. The study was a cross sectional, retrospective design study that utilized secondary data and medical records. Hypotheses for the research study focused on whether re-admission in CHF patients is significantly correlated to history of smoking status, current smoking status, ejection factor (EF), age, height, weight, blood pressure, employment status, and marital status.

Limitations of the study include the fact that participants were limited to male patients at a large Veteran Hospital in the southeastern United States. Consent was obtained from all participants in the study. Criterion for inclusion included the diagnosis of CHF. Patients (n=682) were entered into the study over a 2-year period. The final sample consisted of 314 after exclusion due to missing data. The socio demographic variables of age, gender, race, admission date, marital status, employment status, and date of birth were evaluated. Additional data on height, weight, EF, systolic and diastolic blood pressure, temperature, pulse, respirations, smoking history and status were also

included. A chart review and comprehensive computer program were utilized to track demographics (Burford, 2000).

Descriptive data were used to describe the demographics of the participants. Age of participant ranged from 42 to 92. Pack years for smoking ranged from 0 to 200 packs. EF ranged from 10 to 75%. Weight, measured in body mass index ranged from 15 to 46. Diastolic blood pressure ranged from 36 mmHg to 140 mmHg. Systolic blood pressure ranged from 72 mmHg to 208 mmHg (Burford, 2000).

Data were analyzed at the bi-variate and multivariate levels. To determine the difference in participants with no re-admission and those with one or more re-admissions analysis of variance, and t-test, step wise multiple regression and logistic regression were used. The research hypotheses were tested at a 0.05 level of significance. The number of re-admissions was the dependent variable. Age, EF, smoking status and history, SBP, DBP, marital status, and employment status were the independent variables. In order to select the best model to identify predictors of re-admission, step wise multiple regression was used. To differentiate between the participants with no re-admission and those with one or more logistic regression was used (Burford, 2000).

Findings showed that of the 314 participants admitted with CHF, 51.3% (n=161) had one or more re-admissions within 60 days compared to the 48.7% (n=153) who did not have re-admissions. In comparing the results of the independent variables on the no re-admissions group to the one or more re-admission group, several significant differences were noted re-admission rates differed by mean diastolic blood pressure (DBP) ($t=2.243$, $p=.026$). There was no significant relationship found between re-admissions and gender, re-admission and race, re-admission and smoking. There was a

significant relationship between number of re-admissions and marital status ($p=0.033$) (Burford, 2000).

Re-admission rates were significantly related to smoking history ($r=0.14$, $p=0.0154$). Current smoking status did not significantly influence re-admission rates. The hypothesis on re-admission rates in participants with CHF significantly correlating to EF did not hold up ($r=0.01$, $p=0.8028$). The third hypothesis on re-admission rate in participants with CHF being significantly affected by the demographic variables stated previously were shown non-significant using ANOVA. Only history of smoking, DBP and marital status were shown to be significant (Burford, 2000).

The findings from Burford's (2000) study support the need for healthcare providers to provide effective ways to implement smoking cessation programs for their patients with CHF and educational materials to help the CHF patient control blood pressure. Implementation of these strategies could help reduce re-admission rates in CHF patients, thus improving their QOL.

In yet another study that explored the association between self-care and hospital re-admissions for CHF, Rau (2006) examined the extent to which supportive-educative nursing interventions improved medication self-care and decreased the re-hospitalization for patients with CHF. In arguing for the need for research in this area, Rau noted that patients with CHF exacerbations have a high number of hospital re-admissions and these re-admissions are extremely costly. It is critical to reduce re-hospitalizations and teach self-care measures to CHF patients in order to reduce the number of re-admissions necessary. Lack of knowledge on how to manage the disease and non-compliance appear to be the majority reasons for hospital re-admissions (Rau, 2006).

According to Rau (2006), it is necessary for the patient and health care provider to make judgments about self-care activities and develop ways to incorporate them into daily life. The research question asked by Rau was whether supportive educative nursing interventions improved medication self-care and decreased the re-hospitalization for patients with CHF. The purpose of Rau's experimental study was to compare hospital re-admission rates for patients with CHF who received supportive educative nursing interventions with those who received placebo interventions to determine if hospital re-admission rates decreased.

The theoretical framework utilized was Orem's (2001) Self-Care deficit theory. Rau (2006) believed that the nurse and patient interact in a way consistent with Orem's view of positive and negative aspects of a persons surrounding environment affecting the patient's health status. The nurse and patient make judgments about self-care activities and choose methods to assist and then evaluate the choices made. Rau also believed by using Orem's theory the physical and medical aspects of care would be addressed, as well as the more important social and personal aspects of self-care.

The study took place in Western Michigan and utilized a larger longitudinal study done by Setter-Kline (2007). The sample for this study consisted of 49 participants that were enrolled in home health care. Their ages ranged from 42-94 years. The first group consisted of 23 participants with a mean age of 74.19 years who received supportive educative intervention and second group that consisted of 20 participants with a mean age of 74.74 years who received the placebo interventions. The criteria for inclusion were being over 18 years of age, able to understand English, agree to participate in the study and a diagnosis of CHF. Descriptive statistics were used to evaluate demographic data.

This included age, marital, economic, and employment status, health care provider and payment system, and years with the diagnosis of CHF. Gender and ethnicity were not included (Rau, 2006).

A one-tailed paired t-test was used to determine the difference between self-care medicine administrations and was found to be statistically significant ($p < 0.005$). Data were obtained at baseline and at 3, 6, and 12 months. Data were analyzed by SPSS. The tool used for measurement was the Self-Management Tool, which was adapted from the Chronic Disease Self-Management Study Measures (Lorig et al., 2001).

Test-retest reliability coefficients for the behaviors subscale of the Self-Management Tool ranged from .56 to .92. For the subscale on beliefs about self-efficacy, test-retest ranged from .82 to .89. For the outcome subscales, test retest reliability ranged from .82-.97. Chi square analysis was done to determine if there were any significant differences in the demographic information provided by the two groups (Rau, 2006).

The supportive educative group received interventions based on the AHCPR heart failure guidelines and the placebo group received health promotion information on immunizations, ways to decrease falls, nutrition, insomnia and maintaining general health. There was no significant difference in hospital re-admission rates at three-months between the supportive education group (43.5%, $n=10$) and the placebo group (34.6%, $n=9$). Rau (2006) concluded that, although her study did not demonstrate that supportive educative nursing interventions would improve self-care in medications and decrease hospitalizations, this study does provide a basis for further research into establishing measures that will.

Rau (2006) concluded that medication self-care did not increase because there was not a significant increase in the knowledge level about self-care medication. The study also concluded that lack of analysis of co-morbid diseases were to blame for the non-decrease in hospital re-admissions. This study was important because it identified areas of consideration for CHF management that will enable nurses to consider when planning interventions that would be beneficial for self-management and care of CHF. If supportive educational intervention has a positive affect on medication self-management, it could help prevent re hospitalization of CHF patients and increase their QOL.

Nursing Management of CHF

Schnell, Naimark, and McClement (2005) conducted a study to explore the effect of self-care management of CHF on QOL. The study specifically examined the self-care determinates and practices of CHF patients in urban and rural settings to examine whether effective self-care, and decision-making can improve CHF outcomes. Schnell's study used a descriptive, co relational, cross sectional design. All 65 participants in the sample were enrolled in an ambulatory care clinic and living at home. Participants were CHF patients living in Canada.

Methodology for data collection included review of charts, questionnaires, and open-ended interviews. Criteria for inclusion consisted of diagnosis of CHF for six months, 18 years of age or older, ability to speak and understand English, an ejection fraction (EF) of 40 or less, and a NYHA core of class II or III. Eleven patients officially participated, 7 participants were male and 4 were female with a mean age of 64 years (Schnell et al., 2005).

The theoretical framework utilized in this study was Connelly's (1987) self-care model of chronic illness. Self-care includes actions taken by individuals to promote or ensure their health, to recover from diseases or injuries, or to manage their effect. The interview questions asked of the participants in the study were based on variables from Connelly's model. Schell et al. (2005) addressed the themes of: satisfaction with care, cues to action, social support and self-concept, health beliefs and motives, and self-care strategies. Four research questions were asked:

1. What are the most commonly used self-care activities of CHF patients?
2. What are the determinants of self-care for these CHF patients?
3. When CHF patients experience shortness of breath (SOB) are they more or less inclined to perform self-care activities?
4. What is the relationship between self-care and hospital admission rates for these patients?

The Self-Care of Heart Failure Index (SCHFI) (Riegel, Carlson, & Glaser, 2000) was used to identify the determinants of self-care specifically in for the CHF population. Interviews were conducted with the purpose of examining self-care experiences while living with CHF. Individual semi-structured phone or in person interviews were conducted. Standardization of questions content and format was ensured by use of the SCHFI interview guide. Length of interviews ranged from 15 to 30 minutes. Comprehensive notes were taken during each interview. An expert qualitative researcher did review of the interview and themes were identified based on self-care needs from Connelly's (1987) model of self-care in chronic illness (Schnell et al. 2005).

The findings were categorized for the themes previously mentioned. Quantitative data from the SCHFI were analyzed using the SAS. The following statistical tests were used to analyze data, descriptive statistics, Pearson r correlation co-efficient, and chi square test to compare proportions, t tests to compare means of two group and analysis of variance (ANOVA) to compare means for the more than two groups (Schnell et al., 2005).

Responses on the most commonly used self-care activates of CHF patients showed medication taking as prescribed (95%), talking to the doctor as needed (80%), current immunizations (66%), and the self-care activity less likely to be undertaken was exercising (56%). Further analysis of the participants compared compliance for symptomatic patients (n=34) and non-symptomatic patients (n=31). The research question on the determinants of self-care for patients with CHF showed a significant correlation between psychological status and self-care maintenance (p=0.03). Psychological status also showed significant correlation with self-confidence (p=0.0684) and with self-care (p=0.0575) (Schnell et al., 2005).

The relationship between physical limitations and social limitations and self-confidence approaches a significant value with p values of 0.0867 and 0.0800. The research question on the relationship between self-care and clinical outcomes of CHF showed a significant correlation between the number of hospital admissions and self-confidence (p=0.0005), the higher the number of hospital admissions the lower the self-care scores. A higher mean score was found in participants with SOB (67.3=+18.6) compared to those without SOB (60.2=+11.8) (Schnell et al., 2005).

Qualitative data was analyzed with content analysis. Interview questions were coded manually and recurrent categories were identified and coded. Limitations of the study include the fact that on self-reported questionnaires participants may answer what they believe to be socially desirable (Schnell et al., 2005).

Findings from the Schnell et al. (2005) study indicate that self-care activities are influenced by many factors including self-concept and psychological status. Nurses need to be proactive in education, support and counseling of CHF patients to be able the patient to become more responsible for self-care and self-management of the disease. The factors noted in the study all play a role in influencing the patient's self-care and self- successful self-management of CHF. CHF patients' health beliefs, support systems, and knowledge of signs and symptoms of disease, must be addressed in order to enhance the patient's role as self-care provider.

In yet another study of interventions to improve outcomes in CHF management, Sisk, Herbert, Horowitz, and McLaughlin (2002) tested the effect of selected nursing interventions on re-hospitalization and functional ability in a sample of CHF patients receiving ambulatory care. Sisk noted that nurses caring for the CHF patient educate the patient on self-care and goal setting is imperative to continued quality of life. The study utilized an ethnically diverse population. All participants involved had a diagnosis of CHF with systolic dysfunction. The study took place in 4 hospitals located in Harlem, New York. No theoretical framework was noted in the research study.

The participants consisted of 406 adults of whom 45.8% were non-Hispanic black adults, 32.5% were Hispanic adults, 46.3% were female, and 36.7% were above 65 years of age. All met the eligibility of having systolic dysfunction, were English or Spanish

speaking lived in the community, and were ambulatory care patients. The criteria for exclusion were medical conditions preventing nurse interaction, blindness, deafness, cognitive impairment, pregnancy, renal disease, terminal illness, or heart transplantation. (Sisk et al., 2002). The study was done over a 12-month span of time. Bilingual nurses were available to counsel patients on the subject of diet, medication compliance, self-management of signs and symptoms. Initial and follow up telephone calls were implemented and carried out.

The design was experimental with randomization of participants and comparison of control and experimental groups. The design of the intervention was taken from the Stanford University program that evaluated patients in Northern California. The Stanford questionnaire was adapted to incorporate foods generally eaten by minority groups in Harlem New York. All 4 hospitals involved in the study were non-profit organizations located in Harlem (Sisk et al., 2002).

A computer generated random number sequence was used to determine randomization assignments. The usual care group was given a federal consumer guide for managing systolic dysfunction. The nurse managed intervention group were given counseling sessions with a registered nurse. Counseling on sodium intake, fluid build up, signs and symptoms of worsening condition were discussed. The registered nurse also contacted the patient's clinician and monitored medication and prescription changes. The nurse also ordered follow up exams for the patients (Sisk et al., 2002).

The Minnesota Living with Heart Failure (MLHF) (Rector, 2005) Questionnaire was used to determine functional status of the participants in changes from baseline to 12 months. Hospitalizations were measured using billing data from the 4 hospitals

participating in the study. Poisson regression was used to estimate the adjusted hospitalization rates. The Poisson regression model was first used during the Prussian war to estimate deaths by horse kicks. The Poisson regression assumes that data follows a Poisson distribution, a distribution frequently encountered when counting a number of events (Sisk et al., 2002).

Exogenous variables included treatment assignment, age, race, ethnicity, education, gender, NYHA class and need for a Spanish-speaking interviewer, diabetes, chronic pulmonary disease, and ischemic heart disease. Records from the National Death index measured deaths. Adverse effects were not monitored during the study. This was because the services were being delivered during routine care (Sisk et al., 2002).

Results from the study showed that the patient's receiving nurse managed care had fewer hospitalizations than the usual care group, 143 versus 180, at the end of 12 months. Scores on the MLHF questionnaire were 38.6 for the intervention group versus 47.3 for the usual care group. The number of patients hospitalized just once was similar for both groups, 30.5% for the experimental group versus 36.5% for the control group (Sisk et al., 2002).

The limitation of this study include the fact that it was a modest trial where 75% of the participants were from the same hospital site. Another possible limitation to the study is the fact that 3 nurses delivered the management care in the 4 hospitals involved in the study. Sisk believes that the results of the study are significant because they show that nursing management can improve the functioning of CHF patients and help decrease the re-hospitalization rates in an ethnically diverse population thus increasing the QOL of these patients (Sisk et al., 2002).

In another study of self-care management in CHF, Washburn, Hornberger, Klutman, and Skinner (2005) noted that one of the most common causes of re-admission to the hospital is an exacerbation of CHF, which decreased QOL in his patient population. Therefore, Washburn claimed, it is extremely important for the patient with CHF to understand and be able to carry out self-care management of the disease in order to lead longer and more self-satisfying lives. It is also imperative that the healthcare professional be knowledgeable on the subject of CHF in order to adequately teach the patient to ensure optimal outcomes and to prevent re-admissions to the hospital.

The purpose of the study undertaken by Washburn and colleagues (2005) was to verify the results obtained by a larger study (Albert, Collier, Sumodi, Wilkinson, Hammel, Vopat et al., 2002) on nurses' knowledge of educational principles important to the self-care and management of CHF patients. Albert et al.'s (2002) study was done in a large healthcare system whereas Washburn's research study was carried out in a small Midwestern community hospital. A second and more important reason for Washburn's study was to ascertain and document nurses' educational needs necessary to guide CHF patients in self-managing and symptoms of CHF.

Five topics of relevance for the CHF patient were researched and observed in Washburn et al.'s study. These five educational topics included diet, fluids and weight, signs or symptoms of worsening condition, medications, and exercise. The study set out to determine if there was a need for interventions to increase the knowledge of the nurses on CHF self-care and management.

The theoretical framework used for this study was Orem's Self-Care Deficit Theory of Nursing (SCDNT) (Orem, 2001). Orem's SCDNT is a general theory that is

composed of three interrelated theories. The first is the theory of self-care describing how and why people care for themselves. The second is the theory of self-care deficit describing and explaining why people can be helped through nursing. The third interrelated theory is the theory of nursing systems describing relationships that need to be brought about and maintained in order for nursing to be produced (Marriner-Toomey & Alligood, 2006). Orem's theory allows nurses to focus on self-care themes and provide CHF patients with needed knowledge on how to maximize their ability to self-manage their illness.

The study by Washburn et al. (2005) used a convenience sample of nurses. An Institutional Review Board approved the study's protocol. Written consent was obtained by all participants before participation in the study began. The criteria for inclusion were being employed by the small Midwestern community hospital; and being a nurse routinely caring for CHF patients there. Age and gender were not specified. Participants of the study include 51 nurses that were employed at the hospital. The participants were comprised of 41 registered nurses and 5 licensed practical nurses. There were 5 participants in the study that did not have clearly defined nursing credentials. Fourteen of the participating nurses were Intensive Care Unit (ICU) nurses. The 37 other participants were regular medical surgical nurses. All of the participants in the study had jobs with the primary responsibility of caring for CHF patients.

Knowledge of self-management principles was assessed with the use of a 20 item true and false questionnaire. The questionnaire used was the Nurses' Knowledge of Heart Failure Education Principles (NKHFEPE) (Albert et al., 2002). The NKHFEPE was developed using the evidenced-based guidelines established by the agency for Health

Care Research and Quality (AHRQ). The NKHFEP addresses the educational topic themes established by the AHRQ with the exception of the nature of CHF and the prognosis. The omissions may show a limitation in the tool. The 5 CHF educational themes were diet, fluid and weight, signs and symptoms of worsening condition, medications and exercise (Washburn et al., 2005).

Face validity was verified by three master prepared registered nurses. The nurses were experts in HF management. Reliability of the instrument was supported by comparison of the Albert et al. (2002) results. Participants in both studies scored similarly, demonstrating consistency in responses to statements. All questionnaires were answered anonymously. Hand scoring was done and data were analyzed with use of the SPSS statistical analysis program. The percentage of correct answers was calculated and grouped by category (Washburn et al., 2005).

Results of the study showed the mean CHF self-care knowledge score of 14.6 +- 2. (range = 8-19). No statistical difference in the mean scores between ICU (14.7+-1.6) and floor (14.5 +- 2.1) was found. The range of individual survey items with correct responses was 20-100%. Two questions from the questionnaire were answered with 100% accuracy. All participants involved in the study recognized the need for daily weights and the importance of notifying the doctor of new or worsening signs and symptoms of fatigue. Six questions scored over 90% correct 9 questions had scores between 70-88% and 5 questions had scores less than 40 % correct (Washburn et al., 2005).

Topic themes were examined on the high score questions (>90%) and the questions were found to have content from all 5 themes. The low score questions (<70%)

were found to have content from 4 of the 5 themes with activity being the exception. The participants did not consistently request more information on any of the low score questions (Washburn et al., 2005).

Washburn et al.'s (2005) study supported findings from the Albert et al. (2002) study. Nurses' knowledge of basic CHF information about self-care and management was similar in both studies. The studies both indicated a discrepancy between low scoring items and the nurses' need for more information on the topic. This finding suggests that nurses who work with CHF patients may not be aware that they lack the needed knowledge base to effectively teach certain CHF self-care and management principles to their patients.

The study also noted that because the nurses were not able to adequately teach CHF patients, they could be contributing to the CHF patients' non-compliance and re-admissions to the hospital for exacerbations of the CHF. The Washburn study determined that there is limited face-to-face patient time and interaction between the patient and the nurse. Because of this fact it is essential for nurses to provide clear and precise educational information that is helpful for CHF patient's self-care. The results of the study indicate that if patients are not educated properly, it is unrealistic to expect them to practice self-management (Washburn et al., 2005).

A potential downfall cited by the researchers was the small sample size. It was also noted that inclusion of variables such as educational background, age, gender, or years of experience would have added to the studies results in determining the mean score results. The researchers believed their study showed that nurses surveyed might not be adequately educated in CHF self-care and management topics. Future research

proposed included evaluation of continuing education programs of heart failure self-management knowledge, and identifying needed interventions to ensure that nurses maintain an adequate level of CHF self-care and management knowledge (Washburn et al., 2005).

In a study, on self-management of CHF, Crowder (2005) explored the extent to which attending an outpatient clinic positively impacted the self-management abilities of patients at home in treating their CHF and identified ways to enhance or refine treatments participants receive in an outpatient clinic. According to Crowder, CHF affects over five million Americans a year. This number is expected to double by the year 2040. By the age of 40 years, a person has a one in five chance of contracting CHF. Most hospitalizations for patients age 65 and older happen because of CHF and CHF complications.

Severe exacerbations of CHF and hospitalizations can cause further decline of QOL for CHF patients and cause rising financial costs. Crowder (2005) believes that if health care providers and patients had more active partnerships, symptoms could be recognized, early and treatment initiated immediately in an effort to delay or prevent further decompositions and/or hospitalization. As CHF patients learn to self-manage their CHF care, quality of life should improve and the management and outcome of the disease should be positively influenced. Crowder stated that in order for the patient to be successful in managing their disease, they must acquire knowledge of how to manage their disease and the healthcare provider and patient must set specific goals to effectively do so.

A phenomenological research method was used to study the participants in a naturalistic setting, their own home and an outpatient CHF clinic, and to describe the participants' experiences. Since this was a phenomenological study, no theoretical framework was cited. There were three research questions asked in this study:

1. How did CHF patients manage their symptoms at home before attending this outpatient clinic?
2. How could treatment regimens be enhanced for those attending the clinic?
3. How did attending the clinic affect self-management abilities (Crowder, 2005)?

The sample consisted of 15 people. Eleven were female and four were male. All participants had been enrolled in the same outpatient CHF clinic for a period of six months. The participants all had at least one co-morbid condition, were classified as having stage III symptoms in the New York Heart Association (NYHA) CHF scale and were well-educated. Participants had an average age of 70 years and all were Caucasian (Crowder, 2005).

The study employed open ended, semi-structured interviewing of the participants as the method of data collection. The questions focused on the participant's individual viewpoints and experiences. Interview questions were designed from the Connelly Model of Self-Care and Chronic Illness (MSCCI) (Connelly, 1987). The MSCCI establishes enabling and predisposing factors leading to self-care behaviors of the chronically ill. The interviews lasted one to two hours initially. Follow up phone interviews were done after two to three weeks to clarify and expand on the information given (Crowder, 2005).

Data were obtained through a standardized demographic data form, audio taping of in person semi structured interviews and audio taped telephone interview. Some of the interview questions elicited quantitative data, which were analyzed with the Number Cruncher Statistical System and the SPSS statistical software package. All interviews were transcribed into Ethnograph, a computer software program designed for facilitating free form data into a coding process. Content analysis was done to identify different topics or codes that emerged (Crowder, 2005).

Content comparison was used to identify differences and commonalities. Reliability and validity were enhanced by use of the same primary investigator for all interviews. Chi-square showed fewer ($p=.04$) re-admissions to the hospital after the participants were enrolled in the outpatient clinic, decreased fatigue ($p=.03$), decreased irritability ($p=.025$), less dyspnea ($p=.0025$), less dizziness, hallucinations, and somnolence ($p=.046$), increased appetite ($p=.028$), increased stamina ($p=.032$), decreased shortness of breath ($p=.00019$), and decreased swelling ($p=.0053$) than prior to enrollment (Crowder, 2005).

All participants in this study saw an improvement in self-management of their CHF and credited the outpatient clinic in being instrumental in helping them manage their care and symptoms. After the study, there were less hospital re-admissions in the participants as well as fewer symptoms reported by the participants. This study demonstrated the importance of helping patients to manage their illness to positively influence outcomes (Crowder, 2005).

In the last of a series of studies reviewed in this section on self-care management of CHF patients who live in the community, Ancheta (2006) examined how CHF patients

are cared for in a CHF clinic. Ancheta based the study on the fact that CHF is a major cause of chronic disability in the aging population and requires careful study. Over one-half million new cases of CHF are diagnosed each year, in spite of new technology and new medications. CHF is still the most frequent cause of hospital re-admissions. The survival rate after diagnosis averages 8 to 12 years. There is an extremely high cost to health care due to this fact.

Ancheta (2006) noted that research studies have demonstrated that care of the CHF patient must improve to decrease this alarming trend. The purpose of Ancheta's retrospective pilot study was to determine whether CHF patients in a clinic were receiving optimal care for their CHF and to report recommendations for improving CHF management. There was no theoretical framework noted in this study.

The participants were chosen from a local northeastern Florida hospital. Patient charts (n=300) were retrospectively reviewed for inclusion. The participants had all been patients of the hospital within the last year. Demographic information included the variables of age, gender, ethnicity, marital status, NYHA classification status, EF, risk factors, co-morbidities, cardiac devices, and hospital admission (Ancheta, 2006).

Criteria for inclusion included a diagnosis of stable CHF, EF of less than 40%, NYHA classification of II to IV, and 21 years of age or older. The criteria for exclusion included co-morbid conditions that limited life expectancy to less than 1 year, and history of acute or chronic renal failure (Ancheta, 2006). Consent was obtained from all participants and HIPPA regulations were observed.

Descriptive statistics were utilized to qualify risk factors, co-morbidities, hospital admissions, signs and symptoms, and CHF management. Out of the 300 participants, 2%

were between 21 to 40 years of age, 23% were between the ages of 41 to 60 years, and 61% were between the ages of 61 to 80 years old. The mean age of the participants was 67.5 years old. The ethnicity of the participants was 0.5% Asian, 45% African American, and 54% Caucasian. Other ethnicities equaled 0.55% of the participants. More participants were male than female (62% verses 38%). The majority of the CHF participants were married (67%) (Ancheta, 2006).

The retrospective chart review showed that 75% of the participants presented to the clinic with complaints of heart failure, shortness of breath (SOB), fatigue, chest congestion, activity decrease, edema and dyspnea. One-fourth of the participants had presented for a routine follow up while 65% of the participants were classified as Class III NYHA. Only 1 participant was classified as Class IV and he was hospitalized. The risk factors of myocardial infarct, hypertension, diabetes, obesity, high cholesterol, damaged heart valves, and smoking were assessed as recorded in the participants' chart. These risk factors were present in 100% of the participants in the study (Ancheta, 2006).

Over one half of the participants had severe EF, 12% had moderate to severe: 21% had moderate: and 7% had mild EF. Of the 300 participants 112 had cardiac devices implanted. The three most common co morbidities identified included renal insufficiency (22%), atrial fibrillation (20%), and anemia (7%). Hospital re-admission rates for the participants during the past one and a half year showed 16% of the participants as having at least 3, and 60% of the participants having at least 1. Limitations for the retrospective descriptive study included missing data, incomplete information, and records lacking updates due to changes in insurance and doctor (Ancheta, 2006).

Results of the study showed that the majority of CHF patients in the clinic studied were elderly men (mean age = 67.5 years), Caucasian (54%) and married (55%). Sixty-five percent of the participants were presenting with signs and symptoms of CHF exacerbations and were not presenting for routine care. All participants had at least one risk factor and 180 had been re-admitted to a hospital within the last year. Hypertension (HTN) was identified as the number one risk factor in 71% of the participants, and a significant percentage of participants had renal insufficiency as a risk factor (22%) (Ancheta, 2006).

The findings in this study suggest that health care providers need to focus on disease prevention, especially HTN and renal insufficiency in relationship to CHF. Healthcare providers need to help manage all aspects of the disease, from drug regime, diet, sodium intake, and weight and fluid control. Education on early intervention and better management of CHF to limit developing problems and decrease symptoms of the disease is crucial to delaying the progression and development of CHF (Ancheta, 2006).

Recognizing the need for reliable and valid instrumentation in the study of CHF outcomes and treatment, Mangan (2003) conducted a study to examine the psychometric properties of a tool that measured the decision-making of CHF patients, titled the CHF Self-Management Ability Assessment (CHF-SMAA). In explaining the need for the study Mangan noted that CHF is a debilitating and costly disease. It is also understood that patients who are adequately educated on the disease are in a better position to effectively manage self-care needs.

It is imperative for health care providers to recognize and deal with the learning needs of this population. But there are many challenges such as self-management, goal

selection and the decision-making abilities of the patient that must be considered.

Mangan (2003) believed to overcome these challenges health care providers need a tool to efficiently identify priority-learning needs of the patient with CHF. The study designed and tested the CHF-SMAA, to identify these needs, to more effectively educate CHF patients.

The participants of the study consisted of patients in the Kirklin Clinic at the University of Alabama who had a diagnosis of CHF. Inclusion criteria included ages 20-85 years, clinical diagnosis of CHF, and confirmed left ventricular dysfunction. Exclusion criteria included the inability to read or speak English, cognitive impairment, MI in the last 8 weeks prior to the study or a stroke within the prior year (Mangan, 2003).

Bandura's (1991) Social Cognitive Theory was used as a theoretical framework for the study. The research question for the study was: Is the CHF-SMAA a reliable and valid tool to measure a CHF patient's ability to make decisions regarding self-management of their disease (Mangan, 2003)?

Four scales were created within the CHF-SMAA to measure the variables. Previously published and validated instruments were used as models. Self-management research findings, social cognitive theory constructs and interviews with the patients provided the basis for establishment of the scales. The first scale assessed the self-management skills of the patient, the second assessed the self-efficacy of the patient, the third the outcome expectations and the fourth self-management of decision-making. Testing of psychometric properties of the developed scale was done with data collected from a convenience sample of CHF patients at the University of Alabama. Face validity was assessed with interviews of the CHF patients (Mangan, 2003).

Clinical experts assessed content validity. Construct validity of the scales were analyzed using factor analysis. Cronbach's alpha was used to assess the internal reliability of the scales that emerged from the factor analysis. Validity of the scales was supported by Pearson's Correlation Coefficient analysis, which showed a positive linear relationship between participant scores on all four scales and between most variables. Mangan (2003) concluded in her study that the CHF-SMAA had the capability to reliably and validly identify the educational needs of the patient with CHF and help health care providers enable the patient to effectively self-manage the disease, thus maintaining a better quality of life.

Case Study on CHF

To further explore the experiences of older patients with CHF, Gaub, Reza, Prost, and Bomar (2004) conducted a focused, case study design on the association between QOL and balance and flexibility. Goal setting with a health care professional was part of the patient's experience, which had particular relevance for this literature review. Gaub and colleagues noted that elderly patients experience changes in physical, sensory, vasomotor and pulmonary status as they age.

These physiological changes are further diminished after prolonged illness. Gaub proposed to determine whether interventions to increase balance and flexibility could have a positive effect on the quality of life of one elderly patient following a prolonged illness, which included a diagnosis of CHF and 6 months of bed rest. The patient with CHF and the health care team worked together to meet recovery goals relevant to a frail, chronically ill adult (Gaub et al., 2004).

Gaub and colleagues (2004) used the framework of Fried, Tangen and Walston (2001) on management and treatment of frailty. This framework makes it easier to understand the interaction between external factors, physiological factors and aging that contribute to frailty. Fried's framework considers frailty a reliable predictor in declining health. Fried et al. asserted that a person is frail if they possess three out of five criteria. These criteria are un-intentional weight loss, generalized exhaustion, weakness, slow walking speed, and low levels of physical activity. The list of possible criteria enabled the authors to identify the participant in this sample as frail since all five criteria were present.

Gaub et al.'s (2004) rationale for this study was drawn from research studies conducted by Gill, Baker, Gottschalk, Gahbauer, Charpentier, deRegt, et al. (2003), Hausdorff, Nelson, Kaliton, Layne, Bernstein, Nuernberger, and Singh (2001) and Taylor, Whittington, and Hollingsworth (2003), which supported the hypothesis that exercise is effective in enhancing the health of elderly patients after prolonged illness or bed rest. The research question posed in Gaub et al.'s study was to determine if exercise would be beneficial to the functional status of a 101-year-old patient. Gaub et al. also cited studies done by Wang, Mouliswar, Denman and Kleban (1998) and Clark, Dion, and Barker (1990) to establish that ambulatory elderly who become bedridden fare worse than their counterparts who do not become bed-ridden. The research also noted that 63% of institutionalized elders die within the first year of diagnosis with CHF (Wang et al., 1998).

The sample studied by Gaub et al. (2004) consisted of one 101 year old female. There were no criteria for inclusion stated. The study was conducted at a local wellness

center. The Medical Outcome Survey Short Form (Ware, Snow, Kosinski, & Gandek, 1993) was utilized to measure health status. Several tests had adequate test-retest reliability. All measurement tools utilized have shown effectiveness in prior research. The length of the study was 3 months. Thirty-six sessions were held. Follow ups were conducted at 3 and 6 months then the participant was enrolled in a group exercise program 3 times a week for 6 months.

At the beginning of the study, the participant was using a wheelchair for mobility and could only walk 150 feet with rest periods. She was dependent for all activities of daily living (ADL). Her greatest weakness was in functional mobility and balance. The interventions of the study proved beneficial for the participant as she could ambulate 300 feet and had improved balance and flexibility by the end of the study (Gaub et al., 2004).

Instrumentation for measurement of other variables in the study included physical performance testing, balance testing and sensation testing. Sensation, exercise capacity, gait speed, flexibility and reaction time were also tested. In addition to showing improvement in balance and flexibility, the participant required no changes in her medication and no new or exacerbated diagnosis. The participant did however show an unexplained weight loss during the study (Gaub et al., 2004).

Gaub et al. (2004) concluded that balance and flexibility training is beneficial to the frail and elderly, specifically a centenarian individual exhibiting all criteria for frailty, prolonged illness and bed rest. Although the participant experienced unexpected weight loss during the 6 month follow up and did have some physical decline, however, she still scored above her original baseline. The study however, stated a need for more research

on interventions to prevent further decline in the frail elderly population after prolonged bed rest or illness.

Summary

CHF is a common re-admission diagnosis for elderly patients and is a serious, incurable health problem. However, experts agree that with proper treatment and attention to lifestyle, patients can self-manage this disease, reduce frequent re-hospitalization, and cut health care costs. If fewer people were re-admitted to hospitals, QOL would improve. This literature review suggests that mutual goal setting to manage CHF symptoms is a viable nursing strategy, yet requires further research. The purpose of this project is to demonstrate the importance of identifying goals needed for the CHF patient to self-manage their illness and influence outcomes positively. An overview of the studies summarized in this chapter follows in tabular format.

EVIDENCE-BASED PRACTICE LITERATURE REVIEW TABLE

Source, Author, Year	Problem	Purpose/ Research Questions	Framework or Concepts	Sample	Design	Instruments	Results
1. Rogers, 2002	Mutual self-goals need to be set in order to increase self management skills in CHF patients	To examine and evaluate the effects of mutual self-goal setting on improving the outcome and self-efficacy in CHF patients managing their care at home	King's (1997) goal attainment theory and Bandura's (1991) self-efficacy theory. Combined and called the Combined Model of Mutuality and Self Efficacy	Convenience sample of 54 participants who had been admitted to two home healthcare agencies with a primary diagnosis of CHF	Pre-test, post-test, comparative secondary analysis	Chronic Disease Self Management Tool from Outcome Measures for Health Education and other Health Care Interventions.	Statistically significant results were found in the mutual goal setting group as measured on post-test scores at 6-months ($p = .04$). This finding suggests that the nursing intervention of mutual goal setting may enhance the level of self-efficacy of patients to self-manage their disease in general
2. Kline et al., 2007	Patients need increased knowledge of self-management skills to help them manage their disease	To examine whether supportive education (SE), interventions and mutual goal setting (MGS) has an effect on pt management of CHF and readmission rates	Orem's (2001) conceptual model of nursing practice	88 participants, 31 from each group were picked using power analysis. All were enrolled in a home healthcare (HHC) agency	Experimental, longitudinal repeated measure study done over a 12 month period to examine the affects of 2 different nursing approaches on ability of CHF	Self Efficacy to Manage Disease in General tool (SEMDG) (Lorig et al., 1996). The SEMDG has an internal consistency of .87	All groups were significantly ($p < .001$ to $p = .036$) more confident in their understanding of CHF beyond baseline except at 6 months for the placebo group ($p = .142$)

					patients to self manage their disease		
3. Vallandingham, 2006	Research has not yet clarified the relationship between home health care and hospital readmission rates for CHF.	Examined the correlation between home care visits and the reduction of hospital readmission rates for CHF	Watson et al.'s (1987) Quality Assurance Model Using Research (QAMUR)	31 subjects, 10 males, 21 females. Mean age 77 years, recently discharged to one home healthcare agency	Quantitative measures study utilizing retrospective chart audits	A data collection tool was developed for this study. No reliability or validity available	The data suggest that readmission rates declined with NP visits in home setting
4. Schnell et al., 2004	While research has examined the relationship between hospital readmissions and on self care symptom management, the effects of QO has not been fully understood	To examine whether effective self-care, and decision-making can improve CHF outcomes	Connelly's (1987) self-care model of chronic illness	65 participants enrolled in an ambulatory care clinic with CHF living in Canada or surrounding community	Descriptive, correlational, cross sectional design	Kansas City Cardiomyopathy questionnaire has high test retest reliability. The General Well Being Schedule is a widely used index with reliability coefficients from 0.68 to 0.85 indicating adequate reliability. The Self-Care of Heart Failure Index (SCHFI) is a relatively new instrument with limited empirical testing.	Indicated that self-care activities are influenced by many factors including self-concept and psychological status. Nurses needs to be proactive in education, support and counseling of CHF patients to enable the patient to become more responsible for self-care and self-management of the disease

5. Sisk et al., 2002	CHF continues to cause rehospitalizations, disability and death	To compare the effects of nursing interventions focused on specific management of a CHF problem in ambulatory care practices with care usually given	Randomized trial to measure the hospitalization rates and self reported functioning of the participants	406 adults of which 45.8% were non-Hispanic black adults, 32.5% were Hispanic adults, 46.3% were female, had systolic dysfunction, were English or Spanish speaking lived in community, ambulatory care patients	12 month randomized effectiveness trail of usual care patients and nurse managed patients in 4 hospitals in Harlem	The Stanford Questionnaire and the MLHF Questionnaire Several studies have validated it as a means of measuring responses to medical treatment, and its usefulness has been tested in several geographical settings and in different languages	At 12 months, nurse management patients had fewer hospitalizations (143 hospitalizations vs. 180 hospitalizations; adjusted difference, -0.13 hospitalizations/person –year) than usual care patients. No P values provided
6. Mangan, 2003	CHF is a debilitating and costly disease there is a need to develop a valid, reliable instrument that would enable healthcare providers to efficiently assess CHF patients'	The purpose of this study was to develop a valid, reliable instrument that would enable healthcare providers to efficiently assess patients' priority learning needs in order to more effectively educate CHF patients	Bandura's (1986) Social Cognitive Theory	Convenience sample of 100 patients in the Kirklin Clinic at the University of Alabama who had a diagnosis of CHF	Instrument development	CHF-SMAA is a new tool without prior testing during this study the psychometric properties of the Chronic Heart Failure-Self-Management Ability Assessment (CHF-SMAA) indicated the instrument is pragmatic and warrants further testing.	The CHF-SMAA had the capability to reliably and validly id educational needs of CHF patients help health care providers enable patients to effectively self-manage the disease, thus maintaining a better QOL.

	priority learning needs						
7. Gaub et al., 2004	Elderly patients experience changes in physical, sensory, vasomotor and pulmonary status as they age. These physiologic al changes are further diminished after prolonged illness. The quality of life of chronically ill elderly patients requires further examination	To determine whether an inter vention to increase balance and flexibility could have a positive effect on the quality of life of one elderly patient with a prolonged illness, which included a diagnosis of CHF and 6 months of bed rest	Fried et al.'s (2001) framework on management and treatment of frailty.	A 101-year-old female patient With stage III CHF, low strength, frailty, unintentional weight loss, lower extremity edema and urinary incontinence	Focused, case study design	A modified Physical Performance Test has high test retest reliability in previous studies and the Berg Balance Scale test has received high reliability and validity in previous testing. The reliability and validity for the Semmes-Weinstein monofilaments sensation test. Was not included in the study	Balance and flexibility training is beneficial to the frail and elderly, specifically a centenarian individual exhibiting all criteria for frailty, prolonged illness with CHF and bed rest
8. Washburn et al.,	Limited	To determine if	Orem's Self-	A	Secondary	The Nurses	Findings suggests that

2005	research has examined nurses' knowledge Nurses need to be knowledgeable on what to teach the CHF patients	the results obtained by a larger study (Albert, Collier, & Sumodi, 2002) on nurses' knowledge of educational principles important to the self-care and management of CHF patients was accurate.	Care Deficit Theory of Nursing (SCDNT) (Orem, 2001).	convenience sample of 51 nurses employed by the small Midwestern community hospital that care for CHF patients there.	correlational analysis	Knowledge of Heart Failure Education Principles (NKHFEPE) (Albert et. al., 2002). Measurement of nurse's knowledge on CHF factors such as diet, medication, weight, signs and symptoms, exercise. Validity was insured with use of 3 master prepared nurse and results were compared with a larger hospital for reliability	nurses who work with CHF patients may not be aware that they lack the needed knowledge base to effectively teach certain CHF self-care and management principles to their patients.
9. Burford, 2001	Determine what factors are predictive of re-admission within 60 days to the hospital for CHF patients	Whether re-admission in CHF patients is significantly correlated to history of smoking status, current smoking status, EF, age, height, weight, blood pressure, employment status, and	Orem's (2001) conceptual model of nursing practice.	314 after exclusion due to missing data	Experimental, longitudinal repeated measure study	The General Counseling tool and The Self-Efficacy to Manage Disease in General tool (SEMDG) (Lorig, 2001)	Results indicate that re-admission for CHF is significantly correlated to history of smoking (p=0.01540)

		marital status.					
10. Rau, 2006	Whether supportive-educative nursing interventions improved medication self-care and decreased the re-hospitalization for patients with CHF	Whether supportive educated nursing Interventions improved medication self-care and decreased the re-hospitalization for patients with CHF	Orem Self-Care deficit theory (2001).	49 participants enrolled in HHC. 42-94 years of age. First group consisted of 23 participants, mean age of 74.19 years, received supportive educative intervention and 2 nd group, and consisted of 20 participants, mean age of 74.74 years, received placebo interventions.	Blind experimental study Charts were reviewed at beginning of study Data was obtained at 3,6, and 12 months using the SMT	Self-management Tool adapted from Chronic Disease Self-management Study measures (Lorig 2001) reliability or validity available for the newly developed tool.	Significant difference in medication self-care between groups was $p < 0.05$ a No significant difference between groups for ER visits, $p = .639$ No significant difference in hospitalization between groups, $p = .372$ No significant difference in total nights spent in hospital, $p = .207$
11. Crowder, 2005	There is a need for improve treatment of CHF in outpatient	Does attending the clinic help the CHF patients to manage symptoms at home? And	The study examined what factors influenced the patients to enroll in a	Convenience Sample consisted of 11 female, 4 male enrolled in the same	Qualitative interviews	Employed open ended, semi-structured, audiotaped, and in person interviews	Participants saw an improvement in self-management of CHF and there were less hospitalizations of participants after the

	clinics to help improve QOL and reduce readmissions	reduce re-admission	CHF clinic and what made them attend	outpatient CHF clinic for 6 months with at least one co morbidity, stage III on NYHA CHF scale, average age 70 years old and Caucasian A purposive theoretical sampling technique was used			study
12. Ancheta, 2006	CHF is a major cause of chronic disability in the aging population and more study is needed of how CHF is managed effectively at home	To determine whether CHF patients in a clinic were receiving optimal care for their CHF, and to report recommendations for improving CHF management	No theoretical framework noted in this study.	300 charts were reviewed. Criteria for inclusion included a diagnosis of chronic stable CHF, EF less than 40%, NYHA classification of II to IV, 21 or older.	Retrospective pilot study	Retrospective chart review	HTN was found in 71% of the participants. HTN was the most significant risk factor found. 94% had some form of comorbid condition and 67% were elderly. Nurses need to do more education on HTN, comorbidities and s/s of CHF

Chapter III

Methodology and Procedures

Introduction

Congestive Heart Failure (CHF) is a major health concern and problem in the United States. It is the single most frequent reason for hospitalization (Haines, 2005). The majority of CHF patients have multiple re-admissions to the hospital, and the length of stay is steadily decreasing due to current healthcare and economic trends. The quality of life of CHF patients is often poor, which may influence and increase the exacerbations and re-admissions. While researchers have explored variables that influence the quality of life in CHF patients, few have developed and tested definitive interventions. For example, the effects of an intervention focused on mutual goal setting on self-management of CHF have not been fully explored.

The purpose of the study is to examine the effects of mutual goal setting on quality of life in CHF patients. This study will examine the effects of a mutual goal setting intervention on the quality of life of patients with heart failure at home. The organizing framework for this study will be King's (1981) goal attainment theory. Patients with CHF who do and do not participate in a nursing intervention of mutual goal setting will be compared for degree of quality of life.

Research Question

The research question that guided this study is: What is the effect of a mutual goal setting intervention on quality of life in patients with CHF who receiving home care?

Population, Sample and Setting

A convenience sample of 100 CHF patients admitted to two home healthcare (HHC) agencies in a Midwestern city with an urban population of 205,645 will be used in this study. Both agencies are affiliated with major metropolitan hospitals. The first HHC agency, Parkview Home Health & Hospice, has been in existence since 1995. The agency employs 60 full time registered nurses. The agency is a not-for-profit agency providing services to patients in their homes. The agency is licensed by the state of Indiana, accredited by the Joint Commission on Accreditation of Healthcare Organizations, and certified by Medicare and Medicaid.

Parkview Home Health does over 90,000 home visits a year. The second HHC agency, Lutheran Health Network's Home Healthcare Agency, has been in existence for 14 years and is also licensed by the state of Indiana, accredited by the Joint Commission on Accreditation of Healthcare Organizations, and certified by Medicare and Medicaid. The agency saw 1421 clients last year. Last year's total number of CHF patients in the agency was 56.

The population for the study includes adults with CHF who are receiving services from one of the two-home health care agencies. Criteria for inclusion will include: 18 years of age or older, primary diagnosis of CHF, ability to read and speak English, signed consent to participate in the study, and being a patient in one of the two designated home health care agencies during the time of data collection. A power analysis will be conducted to estimate a target sample size. Equal sizes between the groups are the aim, with approximately 50 in each group.

Protection of Human Subjects

The study will be reviewed by the Ball State University Institutional Review Board and any review boards of the two home health care agencies to ensure the protection of the rights of the participants. The directors of the two targeted home health care agencies will give their permission to conduct the study. Each participant will review and sign consents for inclusion in this study. Numerical designation will be assigned to each participant to protect privacy and confidentiality. Participants will be monitored throughout the study for signs and symptoms of CHF exacerbation, and medical help will be available and provided if necessary.

Following organizational permission, the researcher will make a determination as to which of the two agencies will be the control group and which will be the experimental group for the mutual goal setting intervention. If one of the agencies currently uses a mutual goal setting approach, it will be the experimental group. If neither agency uses a mutual goal setting approach, the experimental group will be selected randomly. If both agencies use a mutual goal setting approach, then one agency will be selected randomly to remain in the study; the other will be replaced by an agency that does not routinely use mutual goal setting strategies in patient care.

Training sessions will be held on mutual goal setting strategies with the nurses who work at the experimental home health agency. Materials will be readily available in the agency for refresher sessions and quick reference. Every month during the course of the data collection, follow-up sessions will be held, and the researcher will make home visits with each nurse once a month to ensure equivalent delivery of the intervention. Patients who meet the study criteria will be invited into the study by the researcher, who

will go on the home visit with the nurse. Each patient will receive a packet of information, including a letter of introduction, and an informed consent document.

While there are no direct benefits to the participants, the significance of the knowledge that health care professionals will gain from the study will be cited in the cover letter and informed consent. Patients who sign the informed consent will be enrolled into the study. Participation is voluntary and the patients may withdraw from the study at any time. Since data will be collected at more than one point in time, questionnaires will be coded numerically. A list of patient names and code numbers will be kept in separate file drawers in the locked office of the researcher.

Completed surveys will be kept in a file separate from the list of participants and code numbers. Signed consent forms will be kept in a fourth file separate from the list of patients, code numbers, and any completed data. While patients will not be anonymous, all data and the list of participants will be confidential and will be seen only by the researcher and data entry personnel. Data will be destroyed at the end of the study.

Instrumentation

The Minnesota Living with HF Questionnaire (MLHFQ) (Rector, 2005) will be utilized to collect data. The MLHFQ was designed especially to assess quality of life in patients with CHF. This self-administered questionnaire has 21 questions and measures the patient's perception of how CHF symptoms impacted their lives during the past month. Several studies have validated the tool as a means of measuring responses to medical treatment, and its usefulness has been tested in several geographical settings and in different languages. It has been used in many clinical trials that have included quality of life as a primary or secondary endpoint (Rector, 2005). The test is scored on a 6-point

Likert like scale: 0 = no, 1 = very little, 6 = very much. The patient rates how the disease has negatively affected their every day life.

The Minnesota Living with HF questionnaire also has two subscales to measure physical and emotional symptoms of CHF, consisting of 8 items and 5 items, respectively. The physical scale includes questions on degree of fatigue and dyspnea. The emotional subscale includes items related to a loss of self-control, feeling of burden, worry, difficulty concentrating and depression. Questions on effects of CHF concerning earning a living, sexuality, edema, diet and hospitalization make up the remaining 8 items. The total MLHF score has been shown to be highly reliable as demonstrated by measures of internal consistency, such as Cronbach's alpha coefficient. High internal consistency suggests that the total MLHF score measures single construct-presumably interrelated effects on an individual's quality of life (Rector, 2005). In a study undertaken by Middel and Bouma (2001), the MLHF-Q was shown to have solid psychometric properties and proven to be an effective and efficient instrument.

Research Design

The research study will be a quasi-experimental pre-test-post-test control group design using quantitative methods. Patients are not randomized into the study. After signing consent forms, baseline quality of life will be measured with the MLHF Scale. Then the nurse will engage the patient in a mutual goal setting intervention during each home visit and follow-up phone calls for three months, or as long as the nurse is visiting the home if less than three months. At the end of three months, QOL will be re-assessed with the MLHF survey. This study utilizes a pretest-post test design to determine the before and after effects of the nursing intervention of mutual goal setting.

All participants in both groups will receive a copy of the AHCPR heart failure guidelines. The Agency for Health Care Policy and Research (AHCPR) was established in December 1989 under Public Law 101-239 (Omnibus Budget Reconciliation Act of 1989) to enhance the quality, appropriateness, and effectiveness of health care services and access to these services. AHCPR carries out its mission by conducting and supporting general health services research, including medical effectiveness research; facilitating development of clinical practice guidelines; and disseminating research findings and guidelines to health care providers, policymakers, and the public (AHCPR, 2008).

In the agency that is the experimental group, the researcher will visit the homes of potential participants who meet the study criteria, gather informed consent and HIPAA signatures, and then have participants respond to the MLHF questionnaire. Questionnaires will be coded numerically so pre and posttest scores can be matched. Demographic information will be obtained from the medical record. Participants will provide access to their address information for mailing the post-test.

Nurses working at the agency that is the control group will not receive any education and will not be informed about the purpose of the study. The control group will receive usual routine care from the home health nurses. At the end of three months, the researcher will contact the participant through the home health agency and engage the participant in completing the MLHF survey through a home visit with the agency nurse or through the mail. If the survey is mailed to the participant and returned by mail to the researcher, a self-addressed, postage-paid envelope will be provided.

Intended Method of Data Analysis

Data from the pre and post MLHF questionnaires will be entered into a computer program for analysis per SPSS-X. Descriptive statistics will be used for analysis of the demographic data. A Cronbach's alpha will be calculated as an estimated measure of reliability in this sample. The two groups will be compared by t-tests for differences in age, gender, and ethnicity, to check for baseline differences. Level of significance will be set a $p < .05$. A variation of analysis of variance (ANOVA) will be computed to evaluate differences in mean scores on the MLHF items between the two groups at pre-test and post-test.

ANOVA is used to determine whether or not the independent variable in the experiment was effective. It is a test of the hypothesis that the variation in an experiment is no greater than that due to normal variation of individuals' characteristics and error in their measurement (Steel & Torrie, 1980). In this study, the mean total scores and subscale scores will be compared. A one-way ANOVA will be used for between group comparisons due to small sample size. Analysis of covariance (ANCOVA) will test the post-test scores after factoring out any influence the pre-test might have had.

Summary

In this chapter, the methods and procedures will be used to examine the effects of mutual goal setting on quality of life in CHF patients. The research design will be quasi-experimental pre-test-post-test control group design with quantitative methods.

Participants will be patients with CHF from two home healthcare agencies in one city. Patients in the experimental home healthcare agency will receive the mutual goal setting intervention from agency nurses during home visits. Patients in the home healthcare

agency designated as the control group will receive only routine care for CHF. The MLHF questionnaire will measure quality of life in both groups. Data will be collected by the researcher during home visits with an agency nurse or by mail. Data will be analyzed using inferential statistics. This study is a partial replication of Rogers' (2002) study and will provide important information about the process and outcomes of mutual goal setting on quality of life in patients with CHF.

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