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## Relationship of Perceived Social Support to Readmission of the Congestive Heart Failure Patient

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RELATIONSHIP OF PERCEIVED  
SOCIAL SUPPORT TO READMISSION  
OF THE CONGESTIVE HEART FAILURE PATIENT

By

Margaret A. Guthaus

A THESIS

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## **ABSTRACT**

### **RELATIONSHIP OF PERCEIVED SOCIAL SUPPORT TO READMISSION OF THE CONGESTIVE HEART FAILURE PATIENT**

by

Margaret A. Guthaus

This study examined the relationship between perceived social support and the time between hospital admissions for congestive heart failure (CHF) patients based on Lazarus' Stress and Coping Theory. A descriptive correlational design was used with a convenience sample of 40 inpatients aged 33-100 at a mid-western hospital. The Personal Resource Questionnaire was used to measure social support.

Data indicated that 50% of the sample were readmitted within 90 days of discharge. However, the hypothesized positive relationship between perceived social support and the number of days between admissions was not supported. Subjects' age was related to time between admissions( $r = .33$ ,  $df = 38$ ,  $p = .03$ ). Implications for nursing are discussed.

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## CHAPTER 1

### INTRODUCTION

Patients within the Medicare population that are hospitalized with recurrent chronic illnesses account for a disproportionate percentage of health care costs. There is a 22% hospital readmission rate within 60 days of discharge that results in a cost of \$8 billion, 24% of all Medicare expenditures (Vinson, Rich, Sperry, Shah, & McNamara, 1990). In the elderly population, congestive heart failure (CHF) is the most common indication for hospitalization, and 29% to 36% of these cases are readmitted within 3 to 6 months of their initial discharge (Vinson et al., 1990). However, recurrent congestive heart failure is not limited to the elderly but can also represent a chronic illness prevalent among the middle aged population.

For those attempting to understand the etiology and course of chronic illnesses such as CHF, multiple variables must be investigated to determine common denominators for recurrent admissions. One of these variables is social support, which must be considered a potentially important factor influencing both patient functioning and recidivism resulting in rehospitalization (Sherbourne & Stewart, 1990).

Research has been conducted to identify factors associated with an increased likelihood of early readmission, and to determine percentages of rehospitalization related to non-preventable, potentially preventable, remediable and predictable factors

in populations 70 years or older. In a study of the remediable factors contributing to early readmission, inadequate social support accounted for the highest number (21%) of preventable readmissions for congestive heart failure (Vinson et al., 1990).

Social support can also be a predictor of non-remediable factors associated with readmission for congestive heart failure, such as functional capacity and adaptation to illness (Lee, Graydon, & Ross, 1991; Primomo, Yates, & Woods, 1990; White, Richter, & Fry, 1990). Individuals who have access to social support when needed are thought to have better adaptational outcomes than those who do not have it available (Lazarus & Folkman, 1984). Social support can protect people from the harmful effects of stress and improve well-being and level of adjustment to chronic illness (Primomo et al., 1990). Both functional capacity and adaptation to a chronic illness may have an impact on the rate of readmission for the discharged CHF patient (Vinson et al., 1990). Given the existence of a correlation between these factors for CHF readmission, assessment of the variable social support appears to be instrumental in developing interventions to reduce the rehospitalization of this population.

#### Problem Statement

The purpose of this study was to describe the relationship of patients' perceived social support, measured during hospitalization, to the time between readmissions for congestive heart failure. The question focused on the patients' perceived social support rather than on an objective measure of social support received. A determination of the patient's perception or representation of reality is key in identifying interventions unique to that patient's health care concern (King, 1981). The rate of readmission relates to the actual occurrences of readmission and the

number of days between hospitalizations. Given that social support can have an impact on both preventable and non-preventable readmissions for CHF, determining the relationship between this variable and hospital readmission may assist in the prediction and prevention of early rehospitalization for this population.

## CHAPTER 2

### LITERATURE AND CONCEPTUAL FRAMEWORK

#### Literature Review

Although multiple studies have been conducted to explore the relationship of various aspects of social support to both acute and chronic illness, none were found to provide concrete empirical support for relating a patient's perceived social support to hospital readmission rate. In an effort to provide a basis for studying the implication of perceived social support on hospital readmission rates for congestive heart failure patients, two categories of studies were examined: the identification of factors that can predict, prevent, or remediate early hospital readmissions among Medicare populations and the relationship and effects of different sources and types of social support, on the perception, adaptation, and level of functioning associated with a chronic illnesses.

Predictors of readmission. Vinson, Rich, Sperry, Shah, and McNamara (1990) prospectively evaluated patients 70 years or older who had been hospitalized with documented congestive heart failure. The purpose of the study was to examine 90 day readmission rates, identify factors associated with increased likelihood of readmission, determine percentage of readmissions that were potentially preventable, and identify remediable factors contributing to early readmission. One hundred and sixty-one subjects were evaluated initially and 66 (57%) were readmitted in a 90 day period. Those who were readmitted were diagnostically evaluated, interviewed and

subjectively assessed by physician and nurse investigators to determine factors contributing to readmission. Data analysis indicated that recurrent heart failure was the most common cause of readmission (57%), and that patients who had multiple readmissions for CHF in the past were at greater risk for recurrent early rehospitalization. Using subjective criteria, 35 of the 66 readmissions were judged to be possibly or probably preventable in relationship to the recurrent heart failure. Factors contributing to the preventability of these readmissions were noncompliance with prescribed medication or diet, inadequate discharge planning, failure to seek medical attention promptly when symptoms occur, and inadequate social support which accounted for the greatest percentage (21%) among the preventable factors.

Burns and Nichols (1991) also studied early readmission rates among older medical patients. The purpose of their study was to identify demographic, clinical, social support, functional, and psychological factors associated with emergent readmissions of older medical patients, and to develop a model predictive of emergent readmissions. One hundred and seventy-three general medicine patients  $\geq 65$  years old, underwent a chart review and interview to screen for the above independent variables. The measurement of social support was limited to structural parameters such as marital status and living arrangements. Psychological factors included depression and cognition which were measured by Center for Epidemiological Studies Depression Scale (CES-D) and the Mini-Mental State Examination (MMSE) respectively. Baseline functioning was measured by the Barthel Self Care Rating and clinical variables such as diagnosis, length of stay, number of hospitalizations in the previous year and severity of illness at time of admission were measured. These

researchers, as did Vinson et al., (1990) concluded that those with a history of frequent admissions for a chronic illness were at greater risk for emergent readmission. Chronic illnesses identified in this study were chronic obstructive pulmonary disease, congestive heart failure, ischemic heart disease, and cancer. Of the 173 subjects, 53 (30.6%) were readmitted on an emergent basis to the hospital within 60 days of discharge. In comparing the readmitted and non-readmitted patients, using the chi square analysis, only one non-clinical variable, structural social support, tended toward significance: readmitted patients tended to live alone (28.3%;  $p = 0.10$ ).

Social Support. In terms of reviewing studies that address social support and its relationship to adaptation and outcomes of a chronic illness such as CHF, much of the research available relates to the implication of various sources of social support for the chronically ill. Two such studies were completed by Friedman (1993) and Promomo et al. (1990). Friedman's research tested a hierarchical model of social support sources and the psychological well-being in women with heart disease. Promomo et al. (1990) investigated who within the social network provided which type of support in relationship to psychological adjustment in women experiencing chronic illness. Although these studies explore social support beyond the patient's perception, the identification of types of support that positively correlate with well-being and adjustment to illness can also contribute to the identification of variables that can reduce deterioration requiring hospital readmission.

Using Cantor's compensatory hierarchical model of social support, Friedman (1993) studied 80 older women with heart disease to explore the relationships of

support sources to levels of psychological well-being. The model suggests that one category of supportive relationships can be substituted for another that is absent. Two types of social support, emotional support and tangible support, were measured using a modification of the Inventory of Socially Supported Behavior. The instrument measures enacted social support which is the amount of social support that the respondent perceives significant others have provided. Psychological well-being was measured by the Positive and Negative Affect Schedule which was used to capture the affective component of psychological well-being, and the Satisfaction with Life Scale which was used as an evaluative indicator of psychological well-being.

To test the model, data were analyzed using descriptive statistics. Consistent with the model, 85% of married subjects identified their spouse as a source of emotional support and 74% of the unmarried women identified their children as a source of emotional support. Inconsistent with the model, 71% of the unmarried women without children named friends or neighbors as a source of support, rather than other relatives such as siblings. Ninety percent of married subjects, with or without children, named their husband as a source of tangible support. For the unmarried women, tangible support was identified as being attributed to children 67% of the time. The perceptions of emotional and tangible support were compared for women with and without spouses to determine differences in perception of support resulting from marital status. Women without spouses perceived they had obtained significantly less tangible support ( $M = 2.83$ ,  $SD = .98$ ) than women with spouses ( $M = 3.33$ ,  $SD = .88$ ) [ $t(78) = 2.12$ ,  $p < .05$ ].



The relationship of subjects' psychological well-being and source of support were also examined. Perceived emotional support and perceived tangible support were each related to one or more of the dependent variables (positive affect, negative effect, and satisfaction with life). Multiple regression indicated that the source of emotional support contributed an additional 7% to the variance in the positive affect beyond the 11% contributed by perceived emotional support. The source of tangible support accounted for 13% of the variance in satisfaction with life. Sources of emotional and tangible social support did not make a significant contribution to negative effect or satisfaction with life. Final analysis included a one-way ANOVA and Scheffe test. The investigators found that groups with both family and non-family members providing emotional and tangible support had greater positive affect and life satisfaction, than those who identified only non-family members as sources of emotional and tangible support. The results of this study suggest that individuals who lack emotional or tangible support from family members may be at risk to experience reduced psychological well-being.

Primomo et al. (1990) investigated social support perceived by women experiencing chronic illness with an emphasis on identifying who were the primary sources of support and how much of each type of support they provided. Also explored was the relationship between different types of support (aid, affirmation and affect) from different sources in the network and psychological adjustment to illness. This study was part of a larger investigation which examined how women and their families adapt to chronic illness. Three cohorts of families in which women with non-metastatic breast cancer, diabetes, or fibrocystic breast disease, were interviewed in

their homes on five occasions over an 18 month period. Although this was a longitudinal study, social support was only measured during the first data collection.

The study consisted of 124 women with breast cancer ( $n = 58$ ), fibrocystic breast disease ( $n = 36$ ), and diabetes ( $n = 31$ ). Social support was measured using the Norbeck Social Support Questionnaire which identifies social network, rates how much aid, affirmation, and affect was received from each individual, identifies the duration of the relationship, and estimates the frequency of contact. Individual adaptation to illness was conceptualized as the absence of depression and was measured by using the Center for Epidemiological Studies-Depression (CES-D). The items on this scale measure the frequency of symptoms of depressed affect, somatic complaints, and interpersonal transactions.

The amount of support from different providers differed significantly across the five categories of support: affect [ $F(3,32) = 9.4, p < .001$ ]; affirmation [ $F(3, 31) = 11.94, p < .001$ ]; aid [ $F(3,33) = 46.7, p < .001$ ]; confiding [ $F(3,36) = 26.09, p < .001$ ]; and reciprocity [ $F(3, 35) = 40.84, p < .001$ ]. For all types of support the partner consistently provided the greatest amount of support (significance level of  $p < .001$  for all analyses). After the partner, the family provided a significantly greater amount of affective support than either friends or others, but friends provided more affirmation than family, and more affective support than others.

Pearson correlation coefficients demonstrated lower levels of depression in women with more affectional support and reciprocity from the partner, more affectional and affirmational support from the family, and less confiding with friends about the illness. The relationship between the demands of illness placed on the

family and the various sources and types of support indicates that fewer demands related to the subject's illness were seen with greater affective and affirmation support from the partner and the family. The amount of tangible aid women reported did not demonstrate any significant or meaningful pattern of relationships with any of the adjustment variables except when illness demands placed on family were high. This study indicated that the greater the women's perception of social support from her partner (as conceptualized by affect and affirmation), the greater her self-reported marital quality and family functioning, as well as lowered levels of illness demands and depression.

The relationship of adaptation, perception of illness, and level of functioning, to the presence of social support, has also been investigated. White, Richter, and Fry (1992) assessed the impact of stressful life events, health status, coping strategies, and perceived social support on the psychological adaptation of women with diabetes. Diabetes mellitus was chosen as an example of chronic illness because of its prevalence and associated requirement for life-style changes. One hundred and fifty-eight women living with a diagnosis of diabetes for at least one year or more were studied. Stressful life events were measured by the Family Inventory of Life Events and coping strategies were measured using the Ways of Coping Questionnaire. Social support was measured using the Personal Resource Questionnaire Part 2 (Brandt & Weinert, 1981) where higher total scores would indicate a greater level of perceived social support. Psychological adaptation was measured by the Psychological Adjustment to Illness. Multiple regression was used to test Lazarus's (1984) theoretical model and to explain psychological adaptation of women with diabetes.

Along with stressful life events, palliative coping and perceived health status, perceived social support had a direct effect on adjustment. These factors accounted for 56% of the variance with 26% directly attributed to social support. Greater health status and more social support was associated with better adaptation to the illness. The results of this study indicated that social support and the use of palliative coping strategies can serve as predictors of adaptation to a chronic illness.

Lee, Graydon, and Ross (1991) investigated the effects of psychological well-being, physical status, and social support on oxygen dependent chronic obstructive pulmonary disease (COPD) patients' level of functioning. Thirty subjects with forced expiratory volumes of less than 40% were studied. Again, Lazarus and Folkman's theory of stress and coping was used as the theoretical framework for the investigation. Correlation coefficients demonstrated statistically significant relationships between physical status, psychological well-being, and forced expiratory volumes/liter. Subjects with higher levels of social support had significantly less disruption in their level of functioning than those who had lower scores. However in multiple regression analysis, social support as a variable affecting psychological well-being did not contribute to an explanation of the sickness profile. The results of this study suggest that the physical status of oxygen dependent COPD patients is the only coping resource that influences their actual level of functioning.

#### Summary and Limitations

In the studies of Vinson et al. (1990) and Burns and Nichols (1991) an older population that was at risk for early hospital readmission was identified. Vinson et al. (1990) focused in on the congestive heart failure patient who accounts for the greatest

percentage of early hospital readmissions among the Medicare population. In their effort to identify markers that would indicate predictability of preventing an admission for CHF, Vinson et al (1990) determined that among remedial factors, such as compliance, social support, early symptom reporting and discharge planning, social support accounted for the greatest percentage of preventable readmissions. However, this study had some severe limitations, the main one of which was the subjective method used to determine whether readmissions were preventable. Although it was reported that social support accounted for the greatest percentage of preventable admissions, there was no mention of how social support was conceptualized or measured for this study. At best this study provides rationale for exploring the relationship between social support and early hospital readmission among CHF patients.

Burns and Nichols (1991), although a bit more scientific in their study, limited the measurement of social support to structural parameters of marital status and living arrangements. Results did indicate a significant tendency toward readmitted patients living alone, however this single variable is limiting when searching for data that supports the relationship of functional social support to early hospital readmission. Another limitation of this study was that subjects were obtained from a Veterans Hospital that primarily cared for an older male population with low income and education. This homogeneous sample reduced the generalizability of the results.

Friedman's study (1993) did not completely support the theoretical model used for her investigation, but it did provide empirical support for evaluating sources of emotional and tangible social support in older women with congestive heart failure.

Results of the study indicated who may be the provider of these forms of functional support within the patient's social network of family and friends. It also demonstrated potential effects on the patient's psychological well-being if this type of support is not available. The size of the sample was a strength of this study; however, women who agreed to participate had more hospital admissions in the previous twelve months than those who refused. This could be an advantage or a limitation depending on the population that is targeted for investigation and the variables to be studied. Although this investigation examined sources of social support and their relationship to psychological well-being, it did not relate how these sources and various levels of psychological well-being relate to the patient's adjustment to CHF and their subsequent level of functioning.

Primono et al. (1990) made this comparison in their study of the relationship of sources of social support to adjustment to chronic illness. They were able to demonstrate that various dimensions of support from different sources in the social network, can be related to different types of adjustment to chronic illnesses. However the finding that support from friends did not significantly affect adjustment to illness contrasts with previous studies. This result along with the finding that the amount of tangible aid women reported did not demonstrate any significant relationships with adjustment to illness, may have been the result of subject characteristics. Women who participated in this study had been diagnosed with the chronic illness for approximately five years and were therefore clinically stable and in the adaptational phase of their illness. The sources and types of social support would be best studied longitudinally from the time of diagnosis throughout the course of the illness (Primomo, et al., 1990).

White et al. (1992) and Lee et al. (1991) investigated the effects of social support on adaptation and the level of functioning in a chronic illness, respectively. Both of these outcomes could demonstrate an impact on early readmission of a chronically ill individual such as one with CHF. White et al. (1992) was able to demonstrate a positive relationship between perceived social support and adaptation to illness which supported findings in previous studies. These results were also related to health outcomes, of which one could most certainly be a hospital readmission. Although the subjects in this study were diagnosed with diabetes and not congestive heart failure, the parallels between the chronicity of the two diseases allow for the application of the results of this study to the development of one with a population of CHF patients.

The study by Lee et al. (1991) perhaps provides the best direction for investigating the relationship of social support to the recidivism of a person with a chronic disease such as congestive heart failure. Both objective and subjective measurements of levels of functioning were correlated to social support, and although physical status and symptoms were the best predictors of functional levels, the study demonstrated how to quantify the role that social support can play in the functional and psychological adaptation to a chronic illness. The major limitations of this study were its small (n=30) conveniently selected sample and that data collection occurred only once. Again, in the exploration of the effect of variables such as social support which can have an impact on adaptation to chronic illness, it may be advantageous to use a longitudinal design.

### Conceptual Framework

The role of social support in health, as a focus for research, has been given increased attention over the past ten years. Between January 1984 and February 1991, 4247 papers were published on social support (Callaghan & Morrissey, 1993). This momentum increased despite the conceptual and methodological problems that weakened efforts to successfully assess this topic.

The options for conceptualizing social support and operationally defining it for research can appear limitless as the literature is reviewed. Shumaker and Brownell (1984) define social support as an interactive process between at least two individuals, where resources are exchanged and then perceived as enhancing the well-being of the recipient. Others have suggest that social support is the provision of information to an individual that they are loved, cared for, and valued within a mutually obliging network (Cobb, 1976). Social support may be detailed in terms of structure such as marital status, size of support network, or frequency of social interactions, or in relationship to forms of support (emotional, information and tangible aid) (Callaghan & Morrissey, 1993).

Lazarus and Folkman (1984), whose description of stress, coping and social support was used for the conceptual framework of this study, cite the "buffer" theory as being the most common theme in social support and health literature. These authors state that social support has the ability to act as an immediate buffer to stress and its destructive physical consequences and that social support is a coping resource for adaptation to a stressful event.



Conceptually, Lazarus and Folkman (1984) define stress as a particular relationship existing between persons and their environment. This relationship may be appraised by an individual as taxing or exceeding his/her resources, and/or endangering his/her well-being. This person-environment relationship is called a transaction and can be initiated by a particularly stressful event. The relationship between person and environment is mutually reciprocal and bidirectional with the participant serving as either the antecedent or the consequence (Lazarus & Folkman, 1984).

The transaction between person and environment is mediated by two processes, cognitive appraisal and coping. These processes determine the degree of stress and the state of well-being in a given individual (Lazarus & Folkman, 1984). Cognitive appraisal is a process of evaluating a potential outcome of a person-environment transaction with respect to its significance or relationship to the individual's well-being. There are three distinct components to the appraisal process that can serve as mechanisms to identify this relationship: primary appraisal, secondary appraisal, and reappraisal. For the purpose of this study, attention was given to primary and secondary appraisal.

Primary appraisal can be thought of as a person's perception of demands. This process determines what is at stake for the individual in a given situation, and whether or not this person is in trouble or may even benefit from the situation. Lazarus and Folkman (1984) identified three categories of primary appraisal: harm/loss which represents the danger a person has already sustained, challenge which relates to events that hold the possibility for mastery or gain, and threat which is anticipated harm or loss on the part of the person.

Secondary appraisal is related to the person's availability of resources. It is an evaluative process that identifies options available for coping and the likelihood that a given option will accomplish what it should or that a particular strategy can be effectively used. There is an interdependence between primary and secondary appraisal and they do not necessarily occur sequentially. The balance between primary (demand) and secondary (resource) appraisals can determine the relationship to the individual's well-being. The balance between these two variables of demand and resource may be predicted by examining certain personal and situational factors (Lazarus & Folkman, 1984).

Lazarus and Folkman (1984) define coping as a process-oriented, cognitive and behavioral effort that is constantly changing. The purpose of this effort is to manage specific demands that are appraised as straining or overwhelming to the resources of the person. It is a combination of coping with cognitive appraisal that facilitates the person-environment relationship seen during stress and in turn may affect adaptational outcomes. How individuals cope is thought to depend in part on a person's appraisal of the situation and coping resources available for use. Individuals with multiple coping resources are believed to cope better and experience better adaptational outcomes than those who have limited resources. It is within this context of their framework that Lazarus and Folkman (1984) connect coping with social support. Lazarus and Folkman propose that perceived social support is a coping resource for enhanced adaptational outcomes to stressful events. These adaptational outcomes can be categorized as (a) the ability to function in work and social living, (b) the individual's morale or life satisfaction, and/or (c) his/her level of somatic health. The

type and amount of social support which may be significant to the well-being of the person is dependent on his/her cognitive appraisal of the stressful event. Figure 1 represents an adaptation of Lazarus and Folkman's framework relative to the congestive heart failure patient.

A component of social support as a coping resource is the actual social network available to the person. A social network represents a specific set of linkages among an identified group of persons for a given individual, and may incorporate the number, attachment, or content within these linkages. It is important to note that Lazarus and Folkman (1984) caution against making the assumption that having a relationship within a social network is equivalent to getting support from it. Relationships contained within a social network may be a source of social demands and result in stressful aspects within the social network itself. Lazarus and Folkman (1984) consider it prudent to think about the value of social networks and to keep in mind that social relationships may create problems and be an actual source of stress in themselves.

Social support could then be considered to represent the nature of interactions occurring within the social network particularly how they are evaluated by the person as to their supportiveness. One can assume that people may have better morale, health and functioning if they perceive or believe that there are supportive relationships within their social network, and that they will receive social support if they need it (Lazarus & Folkman, 1984).

Lazarus and Folkman (1984) identified multiple types of social support from various sources, each with different precipitating factors and consequences. Certain

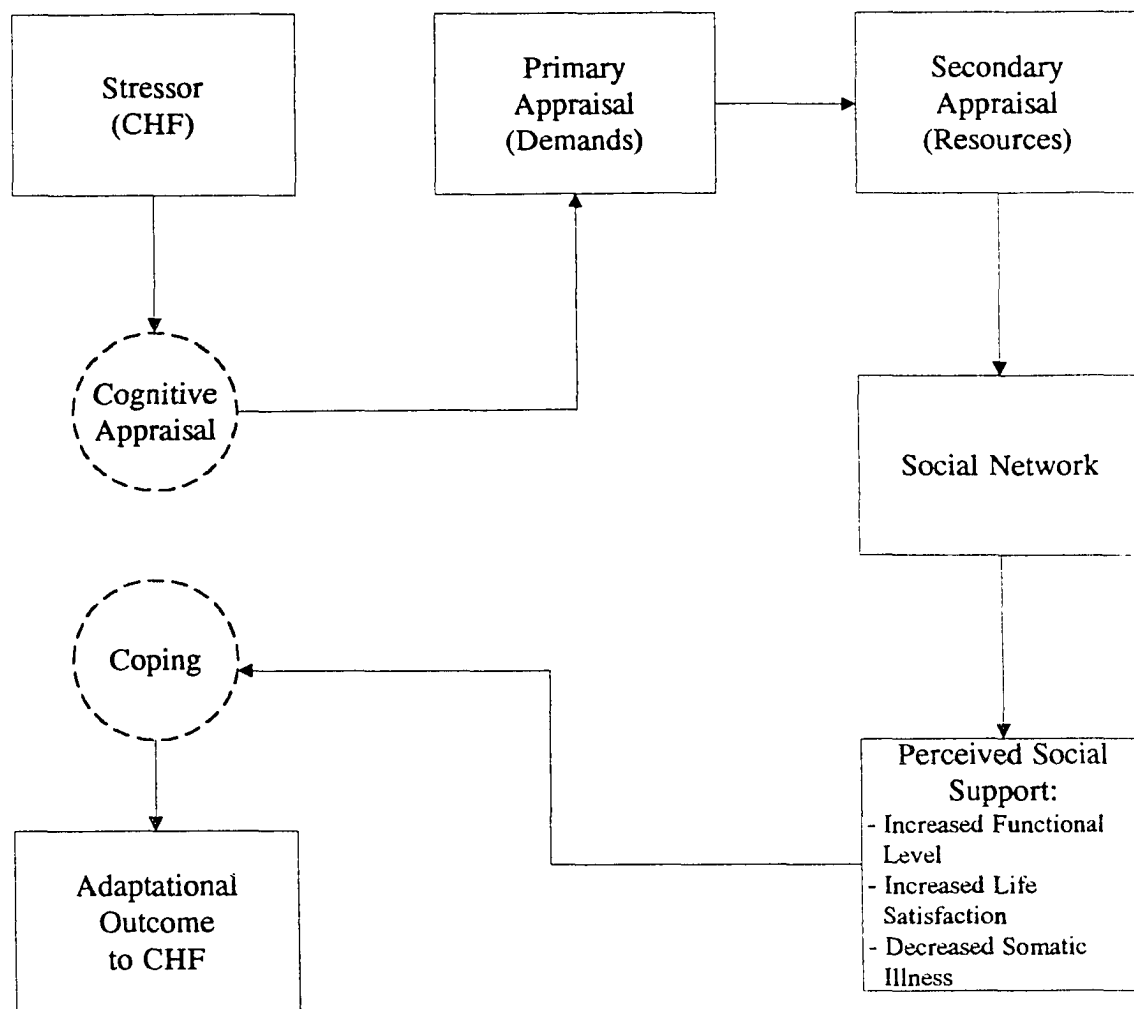


Figure 1  
Social Support as a Coping Resource for Adaption to Congestive Heart Failure (CHF)

functions such as attachment, social integration, opportunity for nurturance, reassurance of one's worth, a sense of reliable alliance, and obtaining guidance are considered necessary for well-being (Weiss, 1974). For the purpose of this study, the investigation of social support was limited to these relational dimensions.

### Summary and Implications for This Study

Hospital readmission for chronic illnesses among the elderly account for a disproportionate amount of Medicare dollars. In preparation for reform, health care providers are forced to evaluate factors that may have an impact on cost effective managed care. In the Medicare population, congestive heart failure is the most common indication for hospitalization, and investigations of known variables that contribute to early readmission with this chronic disease must be given a priority. Among these variables is social support which can be considered a coping resource for the stressful life event of chronic heart failure. The effects of social support can be linked to the adaptational outcomes of chronic illnesses, and in turn adaptation to an illness can have an impact on level of functioning in work and social living, or in the actual health status. It is when an individual can no longer function, or the health status diminishes that hospitalization becomes a requirement.

### Research Question and Hypothesis

The research question asked in this study was is the relationship between perceived social support and the length of time between hospital admissions for congestive heart failure patients. It was hypothesized that those who perceived less social support would have less time between admissions for congestive heart failure.

### Definition of Terms

*Perceived social support* - emotional, tangible, and informational social support available within the context of attachment, social integration, nurturance, reassurance of worth, reliable alliance, and obtaining information, guidance, and tangible help as perceived by the patient.

*Congestive heart failure (CHF)*- decreased functional cardiac capacity resulting in objective and subjective clinical manifestations.

*Admission* - inpatient admission to acute care facility for CHF.

*Time* - the number of 24 hour days between hospital admission for CHF.

## CHAPTER 3

### METHODOLOGY

#### Study Design

A descriptive correlation design was used to examine the relationship between various levels of perceived social support and the days between readmissions for the diagnosis of CHF. The purpose of this study was to describe differences that existed in length of time between hospital admission for CHF patients in relationship to their perceived social support. Data were obtained from the medical record, self-reporting questionnaires and/or structured interviews.

#### Sample and Setting

A non-probability convenience sample, consisting of 40 subjects admitted to an inpatient telemetry unit at a metropolitan Midwest hospital participated in this study. Participants had been readmitted to the study site with CHF for a second or subsequent hospitalization. Diagnosis was established by the presence of a history and physical findings indicating heart failure and/or radiographic findings of CHF with subsequent improvement after diuresis.

Subjects demonstrated a willingness to participate, and could read, write, and speak English. Participants could have comorbidities such as hypertension, diabetes mellitus, arrhythmias, chronic obstructive pulmonary or renal disease as long as CHF was established as the primary diagnosis for both a previous admission and current

admission. Patients excluded from the study were those readmitted under "observation status", those admitted with CHF associated with a hypertensive crisis or acute myocardial infarction, or those whose altered neurological status and mentation prohibited participation in the data collection process. It was anticipated that the inclusion and exclusion criteria utilized in this study would assist in the control of extraneous variables that influence readmission in the CHF patient.

### Characteristics of Subjects

The majority of the participants were female. The age of the participants ranged from 33 to 100 with a mean of 68.07 years ( $SD = 13.53$  years). Most of the respondents were married, widowed, or divorced with only one reporting single status. The majority of subjects reported living with a spouse, committed partner or relative.

Educational levels varied from completion of junior high school to those who had completed 8 years of college. The majority of the respondents were retired or disabled with only three reporting employment at a paying job. Ethnic background of the participants was primarily Caucasian. A summary of these demographic characteristics are listed in Table 1.

### Instruments

Four instruments were used for this study: (a) Medical Record Profile, a medical history completed by the investigator following a medical record review (Appendix A); (b) Demographic Profile, a demographic data record completed by the participant or the investigator (Appendix B); (c) the Personal Resources Questionnaire (PRQ-85, Part Two), completed by the subject or researcher, to measure participants'



Table 1

Subject Demographic Characteristics

<u>Characteristics</u>		
Attributes	Number of Subjects	Percentage of Subjects
<u>Gender</u>		
Female	22	55.0
Male	18	45.0
<u>Marital Status</u>		
Married	25	62.0
Widowed	11	27.7
Divorced	3	7.5
Single	1	2.5
<u>Living Arrangements</u>		
Lived with spouse (Committed Partner)	26	65.0
Lived alone	9	22.5
Lived with relative	5	12.5
<u>Education</u>		
Junior high education	6	15.0
High school education (1-3 years)	11	27.5
High school education (4 years)	15	37.5
College education (3-8 years)	8	20.0
<u>Employment</u>		
Retired	28	70.0
Disabled	9	22.0
Currently employed	3	7.5

perceived social support (Brandt, & Weinert, 1981) (Appendix C); (d) a question derived from the Perceived Social Support Scale rating subject's satisfaction with his/her social support as it relates to who represents his/her primary source of support (Underwood, 1995) (Appendix D). Permission to use the PRQ-85 Part Two, and the Perceived Social Support Scale were obtained from the respective authors (Appendix E).

The Medical Record Profile identifies dates of admissions for CHF, co-morbidities and objective clinical data verifying presence of CHF. The Demographic Profile indicates marital status, educational level, occupation, and ethnic association. Both of these forms were developed for the purpose of this study. The Personal Resource Questionnaire Part Two was developed by Brandt and Weinert in 1981 and was modified in 1985. It is a 25 item instrument measuring perceived social support within the five dimensions of (a) provision of attachment/intimacy, (b) social integration, (c) opportunity for nurturant behavior, (d) reassurance of worth as an individual and role accomplishments, and (e) availability of informational, emotional and material help. There are five items per dimension. These dimensions are congruent with Schaefer et al. (1982) conceptualizations of emotional, informational, and tangible social support, and Weiss's (1974) relational dimensions that are incorporated in the framework for this study. Subjects rated each item on a 7-point scale ranging from strongly agree to strongly disagree, resulting in a total score that indicated their level of perceived social support.

Reliability and validity for the instrument have been established in both acute and chronic populations (Brandt & Weinert, 1981; Weinert & Brandt, 1987). Internal

consistency using Chronbach's alpha has been demonstrated to range from .87 to .93. Test-retest reliability with the PRQ 85 over a four to six week period was reported to be .72. Reliability of the PRQ-85 Part Two for this investigation was established at .92 using Chronbach's alpha.

The establishment of construct and predictive validity for this instrument is ongoing by the authors and other investigators. Gibson and Weinert (1987) compared the PRQ 85 with five other prominent measures of social support. The Interpersonal Support Evaluation List, the Social Support Scale, Norbeck's Social Support Questionnaire, the Cost and Reciprocity Index, and the Inventory of Socially Supportive Behaviors all validated convergence of support measures with the PRQ 85 by demonstrating a positive correlation that ranged from .74 to .40 respectively ( $p < .001$ ). The Profile of Mood States instrument was used to demonstrate discriminate validity which correlated social support measures on the PRQ to individual affective states. Comparison produced a negative correlation of -0.29 ( $p < 0.01$ ).

#### Human Subject Considerations

To conduct this study, permission was obtained from the Grand Valley State University Human Subjects Committee. Following University approval, the proposal was submitted and approved by the Nursing Research Committee at a metropolitan Midwestern hospital.

#### Data Collection Procedure

Staff of the participating inpatient telemetry unit at the agency were given the opportunity to attend sessions describing purpose and procedure of the proposed study. Information was also presented at staff meetings and during one on one interactions

with nurses caring for potential participants in the study. Staff attended informational sessions but verbalized greater comprehension of process following one on one interactions with the researcher. The investigator contacted the charge nurse on the telemetry unit who provided the names and room numbers of patients admitted to the unit with a diagnosis of CHF. Potential subjects were approached by the investigator who was identified as a graduate student from Grand Valley State University. It was explained that the study would evaluate patients readmitted to the hospital with heart failure. All patients approached were informed that participation in the study was voluntary and that confidentiality as well as anonymity would be maintained. Any and all questions were answered prior to obtaining consent for participation in the study. Each participant was given a signed copy of the informational letter and informed consent form, including name and telephone number of the researcher (Appendix F).

Upon receiving consent, the investigator reviewed the potential participant's medical record to determine presence of inclusion or exclusion criteria. If participants were appropriate for the study, they were given the option of completing the demographic profile and the social support instruments by self-reporting or through a structured interview. Those choosing self-reporting (n=5) were given an addressed and stamped envelope and instructions for returning the questionnaires. Those who selected the structured interview technique (n=35) were given options for the timing of the process allowing for privacy and any required care delivery. Those participating in the structured interview process were provided with large print response cards that facilitated the interview process while assisting those who were visually impaired to identify their desired responses.

### Benefits and Risks to Subjects

This research study had potential for assisting health care providers in understanding the potential impact of perceived social support on the admission rate of patients with CHF. While the results might provide direction for nurses in their efforts to develop interventions that decrease the rehospitalization of those who are chronically ill, the participants in this study did not receive any direct benefit from this process.

The risks involved for participants were minimal. The investigator informed the participant that if during the completion of the instruments the subject developed feelings of anxiety or emotional upset, participation was voluntary and that they were not obligated to complete the process. The potential for subjects to become tired due to limited functional capacity was recognized. The investigator paced completion of the self-reporting instruments or structured interview with other activities and informed subjects of the option to stop the process if they became tired. All interviews and self-reporting questionnaires initiated were completed.

Confidentiality of all who responded was maintained. Information and consent forms provided explicit directives on how the researcher would protect the anonymity of subject on completed data collection instruments by coding instruments with numbers and avoiding the use of names on the instruments by either the patient or the researcher. Confidentiality of all participants was maintained. Subjects were informed that all reporting of information gained from the study would be presented in group format with no reference to individuals or names of participants. During participant and investigator interactions, needs and concerns were identified that required attention

beyond the scope of the researcher. In these cases, the nurse researcher referred the participant to the appropriate resources upon completion of the interview.

## CHAPTER 4

### DATA ANALYSIS

The purpose of this study was to identify the relationship of patient's perceived social support, measured during hospitalization, to their days between admissions for CHF. Data analysis was accomplished using the Statistical Package for Social Sciences (SSPS/Windows) software.

#### Hypothesis

The hypothesis for this study was: those who perceived less social support will have fewer days between admissions for CHF. The relationship between the participant's total perceived social support, the number of days between admissions for CHF, and certain demographic characteristics were examined to determine if any significant relationship existed among these variables.

Total scores for the PRQ were used as the measure of perceived social support. Scores ranged from 70 to 169 with a mean of 133 (SD = 23). These total scores were examined in relationship to the number of days between CHF admissions. Mean days between admissions was 308 days (range 5 days to 3634 days, SD = 656 days). A one-tailed Pearson correlation revealed no significant relationship existed between total PRQ scores and days between admissions for CHF ( $r = .15$ ,  $df = 38$ ,  $p = .18$ ). The sample was then divided into two subgroups, those readmitted for CHF within 90 days and those who were readmitted in greater than 90 days. A one-tailed t-test was

used to compare the mean total PRQ scores for the two groups. Again, there was no significant difference between these two groups on their total PRQ scores. Based on these findings, the hypothesis of the study was rejected.

To determine if there was a specific dimension of measured social support that was related to the days between admissions for CHF, the total scores for each of the PRQ dimensions of intimacy, nurturance, social integration, worth, and assistance were examined individually. These dimensions were each compared to the days between admissions for CHF using Pearson correlations. No significant relationships were apparent between any of these five social support dimensions and the number of days between admissions.

Total PRQ scores were also used to determine the relationships that may have existed between the subjects' perceived social support and their gender, age, comorbidities, and educational level. A t-test was used to compare total PRQ scores on the basis of participant's gender. Results indicated that no significant difference existed between males and females ( $t = .70$ ,  $df = 38$ ,  $p = .49$ ). Using a Pearson correlation, it was determined that there was no significant relationship between the subject's age and their total perceived social support scores ( $r = .70$ ,  $df = 38$ ,  $p = .33$ ). One-way ANOVAs were performed on subgroups for number of comorbidities and level of education to determine if a differences existed among these groups and the participant's total score of the PRQ. Again, no significant differences was found.

#### Other Findings

Data analysis also included a comparison between males and females and their number of days between admissions for CHF. Using a one-tailed t-test, it was



determined that there was no significant difference in the mean days between admissions for CHF between the male and female participants ( $t = .68$ ,  $df = 38$ ,  $p = 0.50$ ). The number of days between admissions for CHF were also examined for differences on the basis of comorbidities. Subjects were grouped as having one, two, or greater than two comorbidities. Using a one-way ANOVA it was determined that there were no significant differences in the days between admissions among the groups with varying numbers of comorbidities.

The one-way ANOVA was also used to investigate differences between participants' reported educational level and days between admissions for CHF. Subjects were divided into three groups identified as junior high education, one to four years high school education and those having one to eight years of college. There were no significant differences in days between admissions for CHF among the groups with various levels of education ( $F = 1.18$ ;  $p = 0.32$ )

The number of days between admissions for CHF was compared to the age of the participants to determine if there was any relationship between these variables. Using a Pearson correlation it was determined that there was a significant, positive relationship between the number of days between admissions for CHF and the subjects' age ( $r = 0.30$ ,  $df = 38$ ,  $p = 0.03$ ). This finding indicated that in this study the younger participants had fewer days between hospitalizations for CHF than the older subjects. Further analysis of the data supports this finding. The mean age of participants readmitted for CHF within 90 days of discharge (mean age = 64.45 years) was lower than those admitted after more than 90 days (mean age = 68.70 years). Time since initial diagnoses and the number of previous admission for CHF

were also reported. A comparison of these characteristics between groups readmitted within 90 days and those exceeding this timeframe are summarized in Table 2.

Table 2

Comparison of Characteristics with Readmission Rates

Category	Number of Subjects	Mean Age	Mean Years Since Dx	Percentage with > 3 Admissions
Total sample	40	68.07	3.23	45
Readmitted < 90 days	20	64.45	1.51	50
Readmitted > 90 days	20	68.70	4.95	40

Review of the data indicates that all of those admitted within the 90 days have at least one associated comorbidity and nine (45%) of them have two or more associated disease processes. Marital status, living arrangements and employment status were non-contributory in identifying any significant predictors of early readmission in this group. Table 3 depicts the characteristics of those in the study who were readmitted within 90 days of discharge.

Associated comorbidities were identified with this study. Primary comorbidities reported by the participants were diabetes and hypertension. Nine (22%) of the subjects had a documented history of hypertension, six (15%) with diabetes, and fifteen (37.5%) reported histories of both these disease processes. A summary of these clinical history findings are listed in Table 4.

Table 3

Characteristics of Subjects Readmitted Within 90 Days

<u>Characteristics</u>						
Days Btwn Admission	Age	Prev. Adm For CHF	Comorbs	Marital Status	Lvg Arrang.	Employ. Status
5	66	3 or >	1	Married	Spouse	Retired
7	70	1	>2	Married	Spouse	Retired
13	50	1	1	Married	Spouse	Employed
14	73	3 or >	1	Married	Spouse	Retired
14	42	1	2	Single	Relative	Disabled
17	71	3 or >	2	Widowed	Alone	Retired
17	76	1	1	Married	Spouse	Retired
17	58	1	1	Married	Spouse	Disabled
18	75	3 or >	1	Divorced	Alone	Retired
18	61	1	2	Married	Spouse	Retired
21	57	3 or >	2	Widowed	Relative	Disabled
21	67	3 or >	>2	Widowed	Alone	Retired
25	68	2	1	Married	Spouse	Working
30	73	3 or >	2	Widowed	Alone	Retired
56	82	2	2	Divorced	Alone	Retired
60	64	3 or >	1	Divorced	Alone	Retired
67	69	3 or >	1	Married	Spouse	Retired
73	91	1	1	Married	Spouse	Retired
76	86	2	2	Widowed	Alone	Retired
89	50	3 or >	1	Divorced	Comm. Partner	Disabled

Table 4

Comorbidity History

Characteristics	<u>Clinical History</u>	
	Number of Subjects	Percentage of Subjects
Diabetes	6	15.0
Hypertension	9	22.5
Diabetes and Hypertension	15	37.5

Review of the data related to each dimension of social support that was measured on the PRQ indicated, that of the 5 dimensions, nurturance and social integration had the lowest mean scores among the participants. These results reflected less perceived social support in these areas. Table 5 lists these mean scores for the different dimensions and ranks categories from lowest to highest.

The responses of the 20 individuals who were readmitted within 90 days were examined and their scores on each of the 5 PRQ dimensions compared descriptively. the dimension of support that was rated lowest for each of the subjects was identified (Table 6). Social integration received the lowest rating for 12 (60%) of these subjects. Similar findings were demonstrated in the group readmitted in greater than 90 days. Fifty percent of this group also reported social integration as a lowest mean score for a dimension of social support.

Table 5

Total Study PRQ Scores By Dimensions of Social Support

Dimension	Mean Score
Social Integration	4.89
Nurturance	4.95
Assistance	5.42
Worth	5.53
Intimacy	5.60

Note. Mean scores taken from analysis of subject responses ranging from 1 = strongly disagree to 7 = strongly agree.

Further data analysis indicated that those items on the PRQ which had the six lowest mean scores were items from the nurturance or social integration dimensions. Table 7 ranks PRQ items, their individual dimensions of social support and mean score going from lowest to highest.

Data analysis was also done to compare the subject's days between admission for CHF to their satisfaction with the individual identified as the major source of support since diagnosis with CHF. This satisfaction variable was measured using a question from the Perceived Social Support Scale which rated satisfaction from 1 = totally dissatisfied to 7 = totally satisfied. This comparison was made using the Pearson correlation and indicated no significant relationship between the subjects' satisfaction with source of social support and the number of days between admissions.

Table 6

Summary of Individual Lowest Dimension Score Among Participants Readmitted in 90 Days

Days Btw Adm	Lowest Score Dimension
5	Nurturance
7	Assistance
13	Social integration
14	Social integration
14	Social integration
17	Social integration
17	Nurturance
17	Assistance
18	Social integration
18	Nurturance
21	Assistance
21	Social integration
25	Social integration
30	Social integration
56	Social integration
60	Social integration
67	Social integration
73	Nurturance
76	Social integration
89	Worth

Table 7

Summary of Respondent's Mean Scores for Individual PRO Items

Item	Dimension	Mean Score *
1. I belong to a group in which I feel important.	Social integration	4.35
2. I am responsible for helping provide for another person's needs.	Nurturance	4.57
3. There is little opportunity in my life to be giving and caring to another person.	Nurturance	4.70
4. I spend time with others who have the same interests that I do.	Social integration	4.73
5. I have the opportunity to encourage others to develop their interests and skills.	Nurturance	4.90
6. I have people to share social events and fun activities with.	Social integration	4.95
7. When I am upset there is someone I can be with lets me be myself.	Intimacy	4.97
8. There are people available if I need help over an extended period of time.	Assistance	5.17
9. People think I am not as good a friend as I should be.	Social integration	5.20
10. If I need advice there is someone who assist to work out a plan for dealing with the situation.	Assistance	5.23
11. People let me know that I do well at my work (job, homemaking).	Worth	5.25
12. Among my friends we do favors for each other.	Social integration	5.30
13. There is no one to talk to about how I am feeling.	Intimacy	5.30
14. I can't count on my relatives and friends to help me with problems.	Assistance	5.37
15. I feel no one has the some problems I do.	Worth	5.45
16. Others let me know they enjoy working with me.	Worth	5.48
17. I have relatives or friends that will help me out even if I can't pay them back.	Assistance	5.55

Table 7 (continued)

Summary of Respondent's Mean Scores for Individual PRO Items

Item	Dimension	Mean Score *
18. I have enough contact with a person who makes me feel special.	Intimacy	5.62
19. I know that others appreciate me as a person.	Worth	5.70
20. I have a sense of being needed by another person.	Nurturance	5.73
21. My family lets me know that I am important for keeping the family running.	Worth	5.77
22. I enjoy doing little "extra" things that make a person's life more pleasant.	Nurturance	5.78
23. If I get sick there is someone to give me advice about caring for myself.	Assistance	5.78
24. There is someone I feel close to who makes me feel secure.	Intimacy	6.0
25. There is some who loves and cares about me.	Intimacy	6.13

Note. \* Mean scores taken from analysis of subject responses ranging from 1 = Strongly disagree to 7 = Strongly agree.

Although the data analysis of this study did not support the hypothesis, findings did identify certain clinical history characteristics that could indicate greater risk for early readmission for CHF. In relationship to the total score and dimensions of social support measured in this study, analysis of the participants' responses indicated specific dimensions of lower perceived levels in those subjects with fewer days between admissions for CHF.



## CHAPTER 5

### DISCUSSION AND IMPLICATIONS

#### Discussion Related to Hypothesis

The findings of this study did not support the hypothesis that those who perceived less social support would have less time between hospital admissions for CHF. More modest variations in perceived social support may not be a sufficient predictor of limited adaptation and early readmission for the CHF population. However, the information obtained from this investigation could provide a framework for designing future research to evaluate relationships between adaptation and recidivism in the chronically ill congestive heart failure patient.

In view of the fact that 50% of the total study sample were readmitted within 90 days of discharge and 60% of this group were readmitted within 3 weeks, it is important to identify factors that might be modified to reduce the frequency of readmission. The fact that social support as measured by the PRQ did not demonstrate a relationship to the time between readmissions was disappointing. In this sample, subjects did not experience wide variations in social support as reflected by the PRQ scores. The mean response to each question was at least "somewhat agree" to the majority of the items. Limitations in variations of social support may indicate a more homogeneous sample or reflect limitations in the sensitivity of the instrument.

### Discussion Related to Other Findings

Age and gender did not contribute to the level of perceived social support, nor did marital status, living arrangements, education or employment. This may be the result of the fact that, with respect to certain demographics variables, the sample was homogeneous, or divided into statistically small groups. Those readmitted within 90 days were grouped to see if there was a difference in their total perceived social support, but there were no significant differences in the level of social support perceived this group and those with greater times between admissions. However, certain patterns among the different dimensions of social support were identified with both those readmitted within 90 days and those readmitted in greater than 90 days.

The dimension of social integration resulted in the lowest total score for the study and was indicated as the lowest scored dimension for 60% of those admitted within 90 days and 45% for those admitted after 90 days. This category measures the respondent's perception of social support as it relates to group belonging, spending time with others who share the same interests, doing favors for each other, value as a friend, and the opportunity to share social events and fun activities. This dimension also contained the item with the lowest mean score (4.35) measured in the 90 day group. This level of perception may be related to the fact that socialization needs are often met through relationships and interactions in the workplace and that only 3 (7.5%) of the subjects in this study were currently working.

Nurturance accounted for the next lowest total score among the respondents. This dimension measures the opportunity to be giving and caring to another, to encourage others in their interests and skills, doing things to make another's life more

pleasant, responsibility for providing for another, and a sense of being needed by another. This category accounted for three of the five items with the lowest mean scores among the sample. This could be related to the interpretation respondents placed on the statement "I am responsible for helping provide for another person's needs". Many of the participants were incapable of physically providing for another person's needs due to their own functional limitations, or were retired or disabled, and perceived themselves as unable to provide financially for others. This statement accounted for the second lowest mean score on the PRQ (mean = 4.57).

The dimensions of assistance, which measured tangible aid, and worth, which measured perceived value as an individual, were similar in their total study scores and accounted for the majority of middle range mean scores. Intimacy measured the presence of someone who made the respondent feel secure, to make enough contact with a person who made the respondent feel special, to have availability of someone to talk to about feelings, when upset the availability of someone who lets respondent be themselves, and that there is someone who loves and cares for them. This category accounted for the two highest mean scores from this sample (mean = 6.0 and 6.13). This could be related to the fact that within the sample population, 78% lived with a spouse, committed partner, or a relative and therefore may have had an identifiable person to meet these needs. The higher score in the category of intimacy also correlated with the satisfaction scale which allowed the respondent to rate their overall satisfaction with their primary source of support. Using a scale similar to that on the PRQ, the mean response for this question was 6.5 indicating high satisfaction with subjects' primary source of support.

In view of the limitations of social support in accounting for variations in time between admissions, other variables were examined for their potential to identify those at risk for early readmission. Gender was evaluated since male and female subjects in the study were almost equally represented. This variable of the participants did not make a significant difference in the days between admissions for CHF. However, of the 20 subjects readmitted within the first 90 days, 12 (60%) were female. Even though there was no significant difference in this early readmission group as it relates to gender and readmission rate, this result could have implications when targeting populations for future research or interventions.

Information regarding comorbidities present in the subjects assisted in describing and categorizing the sample, but did not serve as a significant predictor of early readmission for this group of CHF patients. All but 5 (12.5%) of the sample reported at least one comorbidity with 18 (45%) reporting two or greater. Again of the 20 subjects admitted within 90 days of discharge, all had at least one comorbidity. However, when the sample was grouped according to number of comorbidities there were no significant differences among the groups on the days between admissions. Diabetes and hypertension were the primary disease processes listed by these participants. These pathologies within themselves can contribute to chronic cardiovascular disease and their presence would be worthy of note when investigating variables indicating risk for hospital readmission with CHF.

Demographics variables such as education, employment, marital status and living arrangements served as further descriptors of this sample but did not contribute to the prediction of early hospital readmission. Education is many times equated with

knowledge, and knowledge can serve as a precursor to adaptation to an chronic illness and decreased recidivism. However, in this study there was no significant difference in the days between readmission whether the subject reported a junior high education or several college degrees.

Marital status and living arrangements may have implications for social support and being married and/or living with someone are often presumed indicators of individuals who receive social support. Limitations in the variation of these two factors restricted analysis in relation to days between admissions for this sample. Few people lived alone and the majority were married.

The comparison of the subject's age to the number of days between readmissions did provide a statistically significant finding. Historically, the assumption has been that advanced age could serve as a predictor for recidivism of a chronic illness. Results indicated that those who were younger had fewer days between readmission. Younger people who were readmitted earlier, experienced less time since diagnosis. This may be indicative of the narrow timeframe in which the subject has had to adapt to the limitations of the disease. However, this finding challenges that assumption and could provide useful information when designing research to target certain populations for investigation.

#### Relationship of Findings to Conceptual Framework

Although certain trends were noted within this sample, the relationship between social support and the time between readmission for CHF was not established. As a result, the relevance of the conceptual framework used for this study must be explored. Previous research and consensus supports concepts that relate coping with

adaptation to disease and improved functional outcomes, one of which is decreased hospitalization. Lazarus and Folkman (1984) identify social support as a coping resource that, through appraisal of demands and resources, can serve as a mechanism for adaptation to a stressful event such as the condition of CHF. It is assumed that if one perceives the presence of a social network providing forms of support, that coping and adaptation will occur. However, Lazarus and Folkman (1984) themselves caution against making this assumption. Social relationships do not always result in social support. These relationships may be a source of social demand and stressors themselves. The incorporation of this perception into the framework for this study might have enhanced the likelihood of capturing a relationship between the subjects perceived social support and their time between admissions for CHF.

#### Relationship of Findings to Previous Research

Vinson et al. (1990) studied patients aged 70 years and older who were hospitalized for CHF. Fifty-seven percent of the sample were readmitted within 90 days of discharge. Further data analysis indicated that patients with multiple admissions were at greater risk for recurrent early readmission. These findings paralleled those of this study which indicated that 50% of the sample were readmitted within 90 days and 50% of this subgroup had at least 3 previous admissions for CHF. Burns and Nichols (1991) also studied an older population and they too determined that a history of frequent admissions was a predictor of early readmission. Thirty percent of their sample were readmitted within 60 days, whereas in this study 40% of the sample were readmitted within 60 days. Burns and Nichols (1991) also found that subjects living alone were more likely to have early readmission than those living with

another person. It was not possible to make a similar comparison in the present study since only nine of the subjects lived alone.

Other research used for developing the framework for this study investigated sources and types of social support with measurement of participants' social network and different relationships perceived within those networks. Outcomes of these relationships were related to psychological well-being which was then measured against a concept of adaptation to illness. It is, therefore, difficult to draw comparisons between those studies and this investigation as the variables measured in the previous studies are beyond the scope of this research. However, Lee et al. (1991) investigated the effects of psychological well-being, physical status, and social support on oxygen dependent COPD patients' level of functioning and determined that subjects' physical status was the only coping resource influencing the actual level of functioning. In the CHF patient it can be assumed that level of functioning would determine, in part, the rate of hospital readmission, and perhaps in this population as with the COPD patient, physical status may be more predictive of risk for readmission than perceived social support.

#### Limitations and Recommendations

The findings of this research study are from a small, non random sample ( $n = 40$ ), and therefore can not be generalized beyond the present study. A research design incorporating random sampling and a larger sample size would facilitate greater generalizability.

Another limitation of this study was the broadness of the scope of certain variables measured during this investigation. Although attempts were made to control

for certain extraneous factors that could influence the outcome of this study, exclusion criteria lacked specificity. There was no limitation placed on participants' age. Limiting a sample to age cohorts may generate more useful data in defining significant variables that have an impact on adaptation to a disease process, however it is recognized that this would limit generalizability for a population. It is important to note that in this study there was a significant relationship between age and days between readmission, indicating that younger participants had fewer days between admissions. This relationship may not have been identified if the study had limited participation to an older cohort as has been the case with previous studies investigating the CHF population. It would therefore be a recommendation that various age cohorts be studied and compared before making any generalizations about CHF patients.

The broad range of time between admissions experienced by the participants again may have contributed to the lack of significant results in this study. Previous research and this investigation indicate that the first 90 days represent the greatest risk period for readmission with CHF. It would perhaps be best to concentrate on participants readmitted within the first 90 days of discharge and measure social support in this group. It would be equally important to investigate those who are not readmitted within 90 days to identify factors that contribute to their ability to avoid early readmission, but again this may need to be done utilizing different concepts and measurement.

The sample obtained for this study tended to be homogeneous with respect to a number of variables. Ninety-five percent of the participants were Caucasian, 78% lived with another person, and 92% were not currently working. In addition, the



sample was drawn from only one research site which may have contributed to these limitations. It would be a recommendation that the sample size be increased and that multiple research sites be utilized to obtain a more heterogeneous group.

Clinical history recorded during this study was limited to number of previous hospitalizations for CHF, time since initial diagnosis of CHF, and comorbidities. Previous research incorporated aspects of physical status and functional capacity as a measurement of adaption to an illness. It is recommended that future studies of the population include a measurement of physical status and/or functional capacity, along with the etiology of congestive heart failure.

The results of this study may indicate that the scope of social support measured during this investigation was not sensitive enough to capture relationships to days between admissions for CHF. Various dimensions of perceived social support were measured during this study, however, sources and types of support and their relationship to the outcome were not investigated during this research. It would be a recommendation that future research in this area incorporate multiple instruments that would measure source, type, and perceived outcome of social support and relate these variables to physical status and psychological well-being. This type of research methodology would facilitate a greater sensitivity in capturing significant relationships with social support.

#### Implications for Nursing

Cardiovascular disease remains the number one cause of mortality and morbidity in the United States, and chronic manifestations of this disease process, such as congestive heart failure, account for considerable health care expenditures.

Nurses' efforts to develop interventions in this area, that are based on the discipline's research, must become a priority. From the results of this study, implications for this responsibility are more apparent.

This study, along with previous research has identified that patients with CHF are at greatest risk for readmission within 90 days of discharge. Future research and interventions must focus on factors recognized during this critical period. Patients diagnosed with CHF should be assessed for research based risk factors predictive of rehospitalization. These individual risk factors should be incorporated into an educational and treatment plan that is interdisciplinary and tailored to the patient's level of motivation and support systems. Resources and reassessment should be concentrated during this 90 day period following hospitalization with the goal to decrease individual risk factors for readmission. Social networks and relationships of the patient should be assessed to determine if they are a source of support or stress for the individual. Assessment of this factor should include the patient's perception of how their individual social support system may effect their physical status and psychological well-being. Incorporation of these assessments is necessary to individualize necessary interventions.

Findings in this study indicated that a significant portion of this sample were not working due to retirement or disability. In this group, social interaction accounted for the lowest level of reported support among the dimensions. This may indicate that patients with CHF may need interventions to replace the fulfillment of social interaction needs normally met in the workplace. The development of support groups

for patients with CHF that facilitate social interactions and group activities may provide an intervention that addresses this dimension of support.

The findings in this study regarding the relationship of age to time between readmission challenges the assumption that the older population with CHF is at greater risk for early readmission. The focus of concentration for research and interventions may need to redirect itself away from the elderly Medicare population and address the younger patient diagnosed with CHF. Nursing professionals must be leaders in this redirection by educating themselves and the health care work force to let go of assumptions related to age and the risk for recidivism associated with this disease process.

Although the results of this study did not support the hypothesis, its findings fall into the realm of nursing for future research, theory and intervention development. At the very least this study demonstrates nursing's responsibility to take a leadership role in the investigation and practice development with this complex population.

## Appendices

## **Appendix A**

### **Medical Record Profile**

Appendix A  
Medical Record Profile

Code #\_\_\_\_\_

Date of Data Collection\_\_\_\_\_

Time of Data Collection\_\_\_\_\_

1. Date of current admission\_\_\_\_\_
2. Primary diagnosis this admission\_\_\_\_\_
3. Current admission associated with AMI\_\_\_HTN crisis\_\_\_
4. Diagnosis verified by: (must have one)  
Chest x-ray indicating CHF\_\_\_\_\_
- Clinical findings of CHF with subsequent diuresis\_\_\_\_\_
5. Previous history of CHF yes\_\_\_no\_\_\_
6. Previous hospitalizations for CHF yes\_\_\_no\_\_\_
7. How many\_\_\_\_\_
8. Number of days since last admission\_\_\_\_\_
9. Length of time since first diagnoses with CHF\_\_
10. Comorbidities

- |             |          |
|-------------|----------|
| 1. HTN      | 3. COPD  |
| 2. Diabetes | 4. Other |

**Appendix B**  
**Demographic Profile**

## Appendix B

### Demographic Profile

Code#\_\_\_\_\_

Please answer the following questions by checking the appropriate response so that we can describe in a general way the people who participate in this study.

Year of Birth\_\_\_\_\_

Gender:

1. Male\_\_\_\_\_ 2. Female\_\_\_\_\_

Marital Status:

1. Single\_\_\_\_\_ 2. Married\_\_\_\_\_
3. Separated\_\_\_\_\_ 4. Divorced\_\_\_\_\_
5. Widowed\_\_\_\_\_

Living Arrangements

1. Alone 2. Spouse/committed partner
3. Relative 4. Friend

Education: What is the highest level of education you have achieved?

1. \_\_\_\_\_ Jr. High 2. \_\_\_\_\_ 1 year high school
3. \_\_\_\_\_ 2 years high school 4. \_\_\_\_\_ 3 years high school
5. \_\_\_\_\_ 4 years high school 6. \_\_\_\_\_ college 1-2 years
7. \_\_\_\_\_ college 3-4 years 8. \_\_\_\_\_ college over 4 years

Employment Status:

1. Retired\_\_\_\_\_ 2. Disabled\_\_\_\_\_
3. Employed less than 20 hours/week\_\_\_\_\_ 4. Employed 30 or more hours/week\_\_\_\_\_

Ethnic Group:

1. Caucasian\_\_\_\_\_ 2. African American\_\_\_\_\_ 3. American Indian\_\_\_\_\_
4. Spanish\_\_\_\_\_ 5. Asian\_\_\_\_\_ 6. Mid-eastern\_\_\_\_\_
7. Other\_\_\_\_\_



## **Appendix C**

### **Personal Resource Questionnaire (PRQ-85) Part Two**

## Appendix C

### PERSONAL RESOURCE QUESTIONNAIRE (PRQ-85) PART TWO

Code #\_\_\_\_\_

Below are some statements with which some people agree and others disagree. Please read each statement and **CIRCLE** the response most appropriate for you. There is no right or wrong answer.

- 1=STRONGLY DISAGREE  
2=DISAGREE  
3=SOMEWHAT DISAGREE  
4=NEUTRAL  
5=SOMEWHAT AGREE  
6=AGREE  
7=STRONGLY AGREE

#### STATEMENTS

1. There is someone I feel close to who makes  
me feel secure . . . . . 1 2 3 4 5 6 7
2. I belong to a group in which I feel  
important . . . . . 1 2 3 4 5 6 7
3. People let me know that I do well at my  
work (job, homemaking) . . . . . 1 2 3 4 5 6 7
4. I can't count on my relatives and friends  
to help me with problems . . . . . 1 2 3 4 5 6 7
5. I have enough contact with the person who  
makes me feel special . . . . . 1 2 3 4 5 6 7
6. I spend time with others who have the same  
interests that I do . . . . . 1 2 3 4 5 6 7
7. There is little opportunity in my life to  
be giving and caring to another person . . . . . 1 2 3 4 5 6 7

1=STRONGLY DISAGREE  
 2=DISAGREE  
 3=SOMEWHAT DISAGREE  
 4=NEUTRAL  
 5=SOMEWHAT AGREE  
 6=AGREE  
 7=STRONGLY AGREE

**STATEMENTS**

---

8. Others let me know that they enjoy working  
 with me (job, committees, projects) . . . . . 1 2 3 4 5 6 7
9. There are people who are available if I  
 needed help over an extended period of  
 time . . . . . 1 2 3 4 5 6 7
10. There is no one to talk to about how I am  
 feeling . . . . . 1 2 3 4 5 6 7
11. Among my group of friends we do favors  
 for each other . . . . . 1 2 3 4 5 6 7
12. I have the opportunity to encourage  
 others to develop their interests and  
 skills . . . . . 1 2 3 4 5 6 7
13. My family lets me know that I am important  
 for keeping the family running . . . . . 1 2 3 4 5 6 7
14. I have relatives or friends that will help me  
 out even if I can't pay them back . . . . . 1 2 3 4 5 6 7
15. When I am upset there is someone I can be  
 with who lets me be myself . . . . . 1 2 3 4 5 6 7
16. I feel no one has the same problems  
 as I . . . . . 1 2 3 4 5 6 7
17. I enjoy doing little "extra" things that  
 make another person's life more  
 pleasant . . . . . 1 2 3 4 5 6 7

1=STRONGLY DISAGREE  
 2=DISAGREE  
 3=SOMEWHAT DISAGREE  
 4=NEUTRAL  
 5=SOMEWHAT AGREE  
 6=AGREE  
 7=STRONGLY AGREE

**STATEMENTS**

---

18. I know that others appreciate me as  
 a person . . . . . 1 2 3 4 5 6 7
19. There is someone who loves and cares  
 about me . . . . . 1 2 3 4 5 6 7
20. I have people to share social events  
 and fun activities with . . . . . 1 2 3 4 5 6 7
21. I am responsible for helping provide for  
 another person's needs . . . . . 1 2 3 4 5 6 7
22. If I need advice there is someone who  
 would assist me to work out a plan  
 for dealing with the situation . . . . . 1 2 3 4 5 6 7
23. I have a sense of being needed by another  
 person . . . . . 1 2 3 4 5 6 7
24. People think that I'm not as good a friend  
 as I should be . . . . . 1 2 3 4 5 6 7
25. If I got sick, there is someone to give me  
 advice about caring for myself . . . . . 1 2 3 4 5 6 7

## **Appendix D**

### **Perceived Social Support Scale**

## Appendix D

### Perceived Social Support Scale

Think about the person who has been the most important source of support since you have been diagnosed with heart failure. Using the scale below rate how satisfied you are with their support.

Totally Dissatisfied	Dissatisfied	Somewhat Dissatisfied	Mixed 1/2 & 1/2	Somewhat Satisfied	Satisfied	Very Satisfied
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**Appendix E**  
**Permission Letter**

Appendix E



Permission Letter

College of Nursing

Sherrick Hall  
Bozeman, MT 59717-0356

Telephone 406-994-3783  
FAX 406-994-6020

September 1, 1994

Margaret Guthaus  
3801 Winchell Ave. Apt. P308  
Kalamazoo, MI  
49008

Dear Margaret Guthaus:


Thank you for your request. I am pleased that you are interested in the PRQ85 for inclusion in your research project. If you find it meets your needs, you have my permission to use it and reproduce as many copies as you will require. If you feel you need to change specific items to meet the aims of your research, I would ask that you submit them to me for review. I would be happy to discuss any questions or concerns you have in relation to your specific research.

As we continue to work with the refinement and development of the PRQ we are likewise beginning to collect and to collate data sets provided by researchers who have used the PRQ. One specific aim is to have a systematized data base that would provide a source of comparison across studies, populations, situations etc. If you are willing to share your data set we would be most happy to include it in this growing data base. I have included the list of demographic variables that should be sent with the data.

If you decide to use the PRQ, please send us a brief letter describing your study, and \$3.00 to cover reproduction costs. If you have sent reimbursement for mailing and reproduction then please excuse this request. The title Personal Resource Questionnaire and authorship of the tool must be acknowledged in any publication or communication regarding the tool.

Checks should be made out to Clarann Weinert. Thank you for your interest in the PRQ.

Sincerely,

  
Clarann Weinert, S.C., Ph.D., R.N., FAAN  
Associate Professor



**Appendix F**  
**Information and Informed Consent**  
**For Research Project Participants**

## Appendix F

### INFORMATION AND INFORMED CONSENT FOR RESEARCH PROJECT PARTICIPANTS

The study in which you are being asked to participate is to assess how help and support at home is seen by patients who have had more than one recent admission for heart failure. As a participant you are being asked to give permission to the researcher to gather information directly from you and your medical record. This information includes a brief assessment of your social, medical and cardiac history including age, marital status, education, and any previous admissions for heart failure. An assessment of how you view your support at home in terms of assistance with physical care, emotional support and informational guidance will be obtained by your completion a 25 item questionnaire that will take you approximately 20 minutes.

Every effort will be made to protect your confidentiality. All data collected will be coded with a number - your name will never be attached. All reports, papers and articles will report findings in group format - no individual data will be reported. It is not anticipated that you will be harmed in any way. If any of the questions bother you or you get tired you can stop. If there are concerns or questions, the researcher will be available to answer questions or refer you to the appropriate resource. Neither the researcher ( Margaret A. Guthaus), Grand Valley State University, or Borgess Medical Center will accept any financial responsibilities for these referrals. You may withdraw your permission from participating in this study at any time without causing any change in the treatment you are receiving.

The personal (and direct) benefits to you are limited. The results of this study will help identify types of support and help that are beneficial for patients with heart failure and can be made available to you upon request.

This study is being conducted by Margaret A. Guthaus. She is a practicing RN in cardiology at Borgess Medical Center, and a graduate student at Grand Valley State University. If you have any questions she can be contacted at the following number (616) 342-5603 and/or leave a message at the following number (616) 226-6775.

I have read and understand the information presented above. I consent, of my free will, to participate in this study.

\_\_\_\_\_  
Participant

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

I would like a copy of the study's results \_\_\_YES\_\_\_NO

Address \_\_\_\_\_  
\_\_\_\_\_

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## List of References

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