

PREDICTORS OF QUALITY OF LIFE IN THE
CHRONIC HEMODIALYSIS PATIENT

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DEDICATION

"Life is one thing we all have in common
but each person experiences it differently."

Tschudin, 1986

This dissertation is dedicated to the multitude of patients who live the experience of a chronic illness every day.

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I would like to acknowledge that small, but special community of nurses, my professional colleagues, for all their assistance and support. Each in her own way provided me encouragement and courage to complete this dissertation.

To my committee, and most especially my chairman, I thank you for your enduring support, given even when it caused you extra work.

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Predictors of Quality of Life in the
Chronic Hemodialysis Patient

Pamela Yvette Beavers Simmons

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This was a descriptive, correlational, predictive study designed to investigate the relationships between treatment-related stress, satisfaction with nursing care, and depression in the chronic hemodialysis patient and to determine which were predictive of quality of life (QoL). Demographic variables and selected clinical indicators were also assessed for their ability to predict QoL. The study sample of 45 adults included 18 males and 27 females. Most were Black, low income, with a high school or less educational background.

Five self-report instruments and researcher-developed demographic and medical data questionnaires were used to test six study hypotheses. The instruments included: the Hemodialysis Stressor Scale (HSS), Simmons Hemodialysis Stressor Scale (SHSS), Caring Satisfaction Scale (CARE/SAT), CES-Depression Scale (CES-D), and Quality of Life Index (QLI). Each of the instruments demonstrated internal reliability of .80 or above.

Six hypotheses were tested. Multiple regression analysis did not reveal a predictive relationship between treatment-related stress, depression, satisfaction with nursing care, and QoL. Pearson correlation, however, revealed significant relationships between QoL, treatment-related stress and depression. There was no demonstrated relationship between QoL and satisfaction with nursing care, demographic variables or clinical indicators, nor was there a predictive relationship observed between selected clinical laboratory indicators and QoL or depression. No difference in depression scores was detected between subjects whose predialysis weight gain was ≥ 2 kg as compared to those whose predialysis weight gain was ≤ 2 kilograms. Except for income, demographic variables failed to demonstrate a significant relationship with treatment-related stress, satisfaction with nursing care, or depression. This study supported previous findings suggesting that patients on chronic hemodialysis perceive themselves to have a sufficient QoL.

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CHAPTER I

INTRODUCTION

Most patients with a chronic illness are subject to changes in self-concept, role performance, dependence needs, and physiological status. Chronic renal failure patient are at particular risk. This type of patient faces many losses and a multitude of changes (Artinian, 1983; Jenkins, 1979). Some of the changes/stressors experienced by the person with chronic renal failure include: loss of job, loss of freedom, formation of an access for dialysis, dependency on a machine and/or procedure, dietary restrictions, erosion of status within the family and at work, loss of stamina and sense of well being, inability to urinate, loss of financial security and a loss of life expectancy (Cummings, 1970; Goldstein & Reznikoff, 1971; Kaplan-De-Nour, 1969). Other stressors associated with hemodialysis include "complications of failing access sites, nausea, tremors, fear of death, rigorous dialysis schedules,...and overprotectiveness of family and friends" (Bihl, Ferrans & Powers, 1988, p. 27). Such changes represent major physical, social, and psychological disruptions in the

integrity of the individual (Kennedy, Craven & Roin, 1989; Roy, 1984). In order to adapt, the patient must make additional changes, including changes in perceived body image and self-concept, role performance, support systems and physiological status. Hemodialysis patients are at particular risk of experiencing increased levels of stress in response to the overwhelming number of stressors encountered on a regular basis related to the changes of chronic illness and its treatment. Gokcakan (1991) describes the event of renal failure as "traumatic....[with the patient experiencing] drastic changes [which] are not only physically disturbing, but are psychosocially destructive" (p. 26). In a word, stressful.

Assessing patients' stress levels is necessary if nurses are to plan individualized care that would promote and encourage adaptive responses in patients. This study proposes to examine the relationship between treatment-related stress levels, depression, satisfaction with nursing care and quality of life in adult chronic hemodialysis patients.

Problem of Study

The study focused on the following problem statements:

- 1) What are the relationships among treatment-related stress, satisfaction with nursing care, and depression in the adult patient on chronic hemodialysis?
- 2) What is the effect of treatment-related stress, satisfaction with nursing care, and depression on the quality of life of chronic hemodialysis patients?
- 3) Are demographic or selected clinical variables predictive of quality of life?

Rationale for the Study

There are several reasons why a study of this nature is beneficial for the chronic hemodialysis patient as well as for those who may care for or about these patients. The presence and duration of a stressor is generally considered to be a "major factor in disease and psychopathology, the assumption being that enduring or chronic stressors wear the person down psychologically and physically" (Lazarus & Folkman, 1984, p. 98). Bearing that in mind, one can ascertain there are direct and indirect "costs" associated with the stressors experienced by the chronic hemodialysis patient. There are cost to the individual and cost to the system. As with any chronic condition or disease there is

always the need to contain and, if possible, reduce the real dollar costs related to the treatment of maintenance hemodialysis. Since 1973, much of the financial burden incurred as a result of treating the ever-increasing numbers of patient's requiring hemodialysis has been borne by the Federal government (Peterson, 1990). It has been estimated that the number of end stage renal disease (ESRD) patients in the U. S. increases by more than 10,000-11,000 individuals each year (Bart, Macon, Whittier, Baldwin & Blount, 1981; Betts & Crotty, 1988). Other estimates are that the hemodialysis population has grown 7%-10% each year (Nolph, 1991; Wright, 1991). "Currently, more than 190,000 patients are enrolled in the Medicare ESRD program, at an annual cost to the government of more than \$4 billion, or an average of just over \$30,000 per patient per year for direct costs of ESRD treatment alone" (Harris, Luft, Rudy & Tierney, 1993; United States, 1991). The federally funded Medicare ESRD Program, however, is threatened annually with potential cutbacks. As Peterson (1990) points out, the time has passed when one new hemodialysis patient came through the doors of the dialysis treatment center at a time. Such patients now come in multiples.

There are other reasons, aside from the cost factor, for studying the occurrence of treatment-related stress, satisfaction with nursing care, self esteem, functional status, anxiety, and depression in the adult hemodialysis patient. In addition to reducing the financial impact, there is also a tremendous need to decrease the incidence of mortality, morbidity, and suicide rate of the individual being maintained by means of chronic hemodialysis. Losses are felt, not only in terms of dollars and cents, but in terms of the impact on the general quality of life for the individual on maintenance hemodialysis. Though difficult to document, chronic renal failure patients are reported to have a suicide rate 100-400 times that of the general population (Abram, Moore, & Westervelt, 1971; Procci, 1978). In addition, as Harris et. al. (1993) point out, available treatments often fail to return the individual to the quality of life expected or deemed acceptable, many patients opt to discontinue treatment--with full knowledge of the consequences of that action (Neu & Kjellstrand, 1986; Eggers, 1990). According to Eggers (1990), the average annual mortality rate due to voluntary withdrawal is 2.1%, however, this ranges from a low of 0.1% in 15-24 year olds, to a high of 9.9% in the 85 year old and above. These two

factors alone, suicide and voluntary withdrawal rates, could serve as sufficient catalysts for encouraging research that would: 1) identify and refine useful methods of measuring hemodialysis-related stress and depression; 2) validate current methods of measuring effectiveness of nursing care activities and interventions provided on behalf of the chronic hemodialysis patient; and 3) assist nurses and other health care workers in identifying interventions which would promote a positive quality of life for the patient.

Several authors purport the most effective method of maintaining the psychological adjustments of patients on chronic hemodialysis is some type of early psychotherapeutic intervention (Gokcakan, 1991). "Adjustment to hemodialysis is determined by how well patients manage both physiologic and psychosocial stressors. Physiologic stressors are influenced by the medical regimen, but the ability to manage the medical regimen is in turn influenced by a number of psychosocial factors" (Courts & Vacc, 1994, p. 47). Although some patients are able to adapt to chronic renal failure and hemodialysis while maintaining a positive attitude (Kalman, Wilson & Kalman, 1983; Roy, 1990), the "combined stresses of the disease and its treatment are objectively greater for some patients than others. These

patients may come to experience that combination of bodily suffering, psychological stress, and functional loss as overwhelming, irreversible, and intolerable" (Roy, 1990). Therefore, the need to understand the interrelationships among stressors and their effect on QoL is very important.

Lastly, a review of the literature determined that nurses have published few studies which document attempts to develop and/or refine instruments enabling health care workers to consistently identify the type and degree of treatment-related stress experienced by the chronic renal failure patient (Baldree, Murphy & Powers, 1982; Bihl, Ferrans & Powers, 1988; Gurkis & Menke, 1988). Nurses must identify and understand the variables which may influence quality of life for the patient on chronic hemodialysis (Dunn, Lewis, Bonner & Meize-Grochowski, 1994). Methods to identify interventions to reduce depression and treatment-related stress levels while promoting a superior quality of life and satisfaction with nursing care must be developed as we come to understand more about quality of life in chronic renal failure patients.

As with any chronic illness, patients experiencing chronic renal failure are subject to changes in self-concept, role performance, dependence needs, and

physiological status. Some of the changes occur as a direct result of the treatment regimen and may be viewed as stressors which serve to disrupt the integrity of the individual. Maintenance or restoration of the individual's integrity influences the quality of life experienced by the individual. Depression and poor clinical outcomes may be detrimental to the patient's quality of life. In addition, dissatisfaction with nursing care and treatment-related stress, that is not resolved, may be contributing factors to increased depression while undermining or decreasing the patient's perceived quality of life.

If nurses are to meet the needs of hemodialysis patients, meaningful methods of documenting treatment-related stressors, satisfaction with nursing care, and depression are required. In addition, nurses must also identify those factors which promote satisfaction with nursing care and increased quality of life in the chronic hemodialysis patient while decreasing the patient's depression and treatment-related stress. Given today's climate of continuous quality improvement (CQI), nurses must also be concerned with how well they are meeting the needs of the customer, i.e., the chronic hemodialysis patient. Two of many reasons for this interest in meeting

patient/customer needs are that (1) the need to quantify patient satisfaction is being driven by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) standards. Secondly, in the managed care environment, competition for patients/customers drives the health care system. Therefore, research is needed to better understand patient needs and customer satisfaction.

Padilla, Grant, and Ferrell (1992) suggest the following as the major reasons to support the necessity for nursing research endeavors regarding quality of life. First, nurses need to be able to describe the psychosocial and physical responses of patients to specific diseases, such as ESRD. Secondly, it important to examine symptom management response to disease and treatment, i. e., what symptoms are associated with, and thus may be possible measures or indicators of, quality of life, and what is that relationship to the specific disease? A third purpose for nursing research in the area of quality of life is to compare patient and family responses to treatments. The last purpose indicates that it is imperative that nurses better understand and can demonstrate the effect of specific rehabilitative approaches and be able to identify potentially vulnerable periods in the health-illness

continuum, that is, be able to anticipate the times a patient's quality of life is at its low points.

The costs related to loss of life and quality of life cannot be adequately measured. While it is difficult to quantify those costs, they represent a major reason for pursuing a study of this nature. The challenge to determine what stressor(s) actually impinge upon the chronic hemodialysis patient's sense of well-being must be accepted. Methods to identify interventions to decrease unacceptably high treatment-related stress levels cannot be developed until we fully understand these stressors. All members of the health care team have a professional responsibility to work with the patient and family towards obtaining these goals. Because nurses continue to have more opportunities for direct and frequent contact with the patient than most health care professionals, it is of utmost importance for nurses to be involved in the development of models for understanding QoL in hemodialysis patients.

Purpose of the Study

Given the problem of this study, the purpose was to:

- 1) describe the quality of life (QoL) of hemodialysis patients;

- 2) determine if a relationship exists between QoL and
 - a) the psychologic variables: treatment-related stress, satisfaction with nursing care, and depression;
 - b) the demographic variables: socioeconomic status, marital/ employment status, living arrangement, length of time on chronic hemodialysis, income, educational level; and,
 - c) clinical laboratory indicators and interdialysis weight gains;
- 3) determine which of the psychologic, demographic and clinical variables are predictors of QoL;
- 4) to investigate concurrent validity and determine the reliability of the Simmons' Hemodialysis Stressor Scale (SHSS).

Conceptual Framework

Lazarus and Folkman (1984) define psychological stress as the "relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (p.21). This definition implies there is a flux and ebb in the relationship which is influenced by many factors, e.g.,

the number of stressors, degree or intensity of stressor impact, and individual perception. Thus, stress level represents the status of the flux-ebb relationship between the person and the environment at a given point in time.

Maslow's (1954) theory of motivation proposes a hierarchy of needs arranged in ascending order, which motivates or elicits human behavior. These needs are "preponent", that is, the lower need level must be satisfied or at least partially met before the individual is able to ascend to the next higher level. According to Maslow's (1954) theory, hierarchy of needs motivates an individual's behavior in all aspects of human existence. Figure 1 depicts the relationship of internal and external stressors which may flux and ebb in relation to the end stage renal disease patient and his/her needs.

Maslow's (1954) hierarchy of needs is arranged in five, ascending need categories (see Figure 1), beginning with physiologic needs, safety and security needs, belongingness and love needs, esteem needs, and needs related to self-actualization. The lower level needs represent "must have" needs while the higher level needs may never become a need for some who are preoccupied with attempts to satisfy the lower level needs.

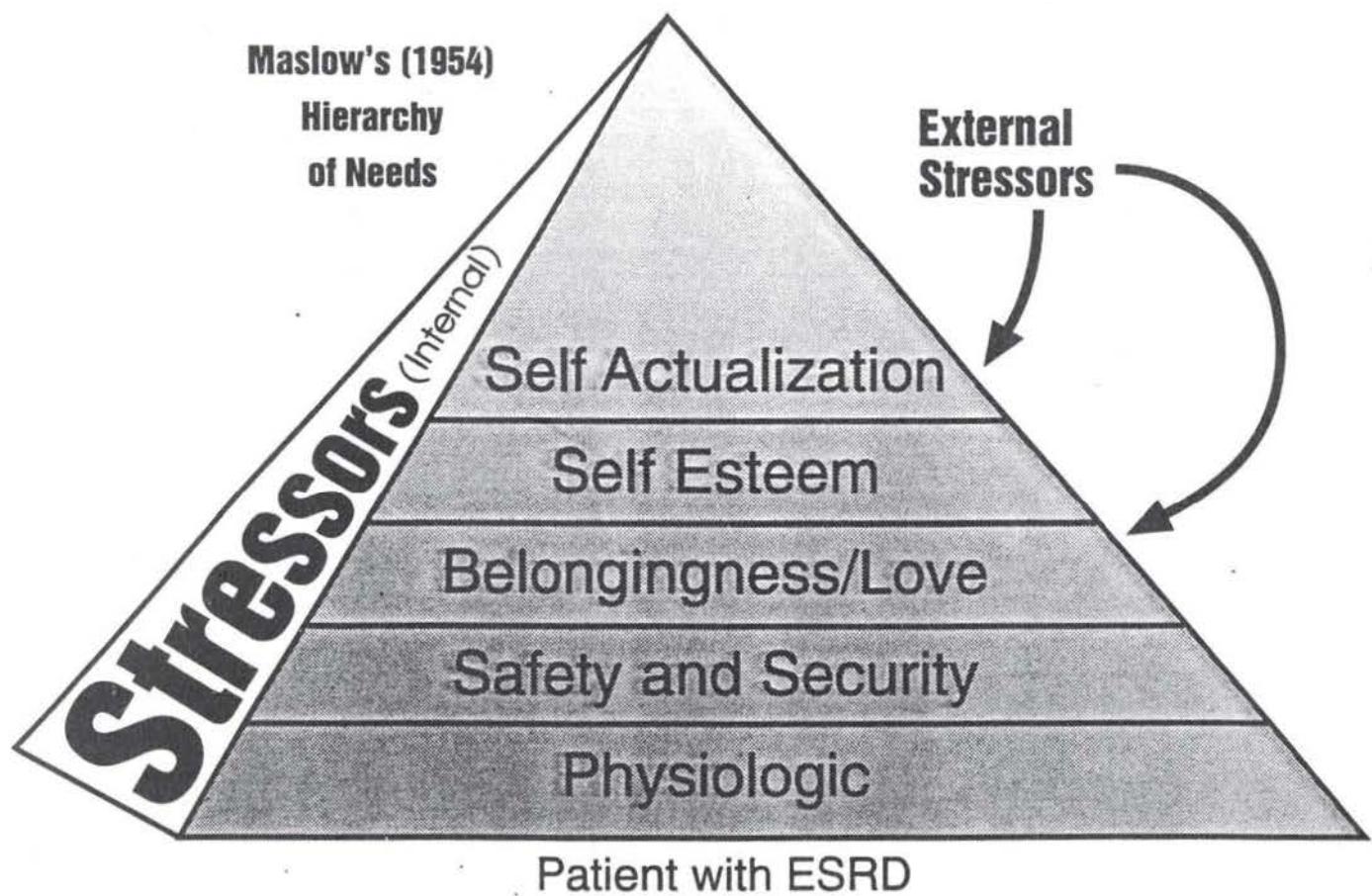


Figure 1. The End Stage Renal Disease Patient in Relation to Hierarchy of Needs and Stressors.

Physiologic requirements, according to Maslow, are identified as the most basic lower level needs, and includes such things as air, food, water, elimination. Physiologic needs are those needs necessary to sustain life. These needs are posited to be the starting point for human motivation, and are of necessity at the beginning of the needs hierarchy, hence, the most "proponent" of all human needs (Maslow, 1954). These basic needs, or drives, must be at least partially met before the individual is motivated to satisfy the higher level need.

Once an individual's physiologic needs are at least partially met, safety and security needs become the motivating needs, and the individual will attempt to satisfy the second level of the hierarchy. Safety and security needs include the need for stability, dependency, protection from internal and external forces, freedom from fear, anxiety, and chaos (Maslow, 1954). Other examples of safety needs are laws and limits, safe home, work, and hospital environment. Regulations and nursing care standards that insure safe patient care are also examples of safety and security needs.

Social and belongingness needs, as well as the need for love are designated as the third level in the hierarchy of

needs (Maslow, 1954). Maslow (1954) believed that the need for love was an essential part of the hierarchy, and included not only the receiving of love, but the giving as well. The need for family, friends, and friendships as well as the need for a sense of belongingness all correspond to needs found in this group. Congenial and supportive relationships among patients and health care providers within the organizational climate and culture of a freestanding chronic hemodialysis center could represent needs within the belongingness/love level of hierarchy of needs.

The fourth group of needs are those which incorporate self esteem and ego needs (Maslow, 1954). Here again, individuals would be more likely to attempt to satisfy these needs once the lower level needs, i.e., physiologic, safety and security, and love/belongingness needs, are met. Needs which are identified within this category include one's concern with one's own evaluation of self, self respect, and the esteem of others (Maslow, 1954). Likewise, the desires for freedom, competence, mastery and independence fall within this group. Other examples include desires for strength, status, achievement, prestige, recognition, praise, and competence. How an individual's body image

changes (insertion of circulatory access, inability to urinate, changes in skin color and texture, to name a few) may alter the individual's self esteem and might be included in this need level. Another example might be the individual's ability to master the dietary regimen and stay within prescribed weight limits between dialysis treatments. In addition, loss of status, competence, prestige, etc. related to loss of job, may also impact the ability to satisfy the self esteem or ego needs.

The apex or last hierarchical level in Maslow's (1954) hierarchy of needs is the self-actualization level. Again, this level cannot, contends Maslow, be satisfied prior to satisfying, at least partially, the four lower levels. The self-actualization needs are met by the individual being all that he or she can be. This is usually accomplished through creative means or by means of self fulfilling activities or achievements. Maslow (1954) suggests that this need is highly individualized and is rarely satisfied completely. This need might be characterized by the individual who, despite a debilitating chronic illness, chooses to strive for a proportional high level of life, does and is all that he or she can be, resulting in an augmented quality of life. Overall quality of life is influenced by every level of

personal need as well as those external stressors the individual does or does not manage every day (Figure 1).

Assumptions

The following assumptions have been made:

1. Perceptions of the subjects accurately reflect reality.
2. There are identifiable physical and psychosocial aspects of the hemodialysis treatment which influence a patient's perception of stress.
3. A subject's current level of stress, anxiety, and depression are relative to past experiences and present situations.
4. Enduring or chronic stressors wear the patient down psychologically and physically (Lazarus & Folkman, 1984, p. 98).
5. The format and design of the selected instruments can accurately capture and record the data (subject responses).

Hypotheses

The following hypotheses will be tested:

1. Treatment-related stress, satisfaction with nursing

care, and depression are predictive of quality of life in chronic hemodialysis patients.

2. Quality of life for the adult chronic hemodialysis patient is not related to demographic variables as: age, gender, race, marital status, employment status, socioeconomic status, educational background, length of time on chronic hemodialysis, or living arrangements.

3. Clinical laboratory indicators such as serum hemoglobin (Hgb), serum potassium (K^+), hematocrit Hct), serum phosphorus (Phos), blood urea nitrogen (BUN), and serum creatinine (Creat)-- all common measures of dialysis effectiveness (Bjorvell & Hylander, 1989) are predictive of depression and decreased QoL in the patient on chronic hemodialysis.

4. Treatment-related stress, satisfaction with nursing care, and depression are not related.

5. Patients who consistently experience interdialysis weight gains of less than 2 kg will report lower stress, and depression scores than those who experience an average interdialysis weight gain greater than 2 kg.

6. Treatment-related stress, satisfaction with nursing care, and depression and the demographic variables are not related.

Definition of Terms

Treatment-related stress: Although there are many definitions of stress, for the purposes of this study, stress will be defined as the "relationship between the person and the environment that is appraised by the person as taxing or exceeding [their] resources and endangering [their] well-being" (Lazarus & Folkman, 1984, p. 21). The operational definition of treatment-related stress is the level of stress experienced by the patient related to the chronic renal failure and its treatment as demonstrated by the mean score achieved on the Hemodialysis Stressor Scale (HSS) (Baldree, Murphy, & Powers, 1982) or the Simmons' Hemodialysis Stressor Scale (SHSS).

Adult chronic hemodialysis patient: Subjects in this study will be any patient 18 years or older with a medical diagnosis of chronic renal failure. The operational definition is any patient with the above definition who is currently being treated with hemodialysis three times each week at an outpatient or inpatient dialysis center.

Satisfaction with nursing care: Includes those activities performed by the nurse during each of the patient visits--usually three visits/week--which the patient may perceive as helpful and/or caring, and thus satisfactory, or

not helpful or caring, and therefore, not satisfactory. The operational definition of satisfaction with nursing care is the score achieved on the CARE/SAT instrument (Larson & Ferketich, 1993).

Depression: An emotional condition characterized by overwhelming feelings of gloom, despair, helplessness, and hopelessness. The operational definition of depression is the score achieved on the CES-D scale.

Quality of life: "a person's sense of well-being that stems from satisfaction or dissatisfaction with the areas of life that are important to him/her" (Ferrans, 1990). Quality of life is operationally defined as the score achieved on the Quality of Life Index (QLI) (Ferrans, 1985).

Predialysis weight gain: The difference between the patient's last post-treatment weight and their weight prior to dialysis. The gain/loss should be within ± 2 kilograms of the medically established baseline weight.

Clinical indicators: Those laboratory values commonly used to evaluate effectiveness of treatment, including hemoglobin, hematocrit, serum potassium, serum phosphorus, blood urea nitrogen, and creatinine. Clinical indicators were operationalized by using the most recent monthly values

recorded in the medical record for each of the clinical indicators noted on the Medical Data Form (Appendix A).

Limitations

1. The subject's own tendency toward more or less [trait] anxiety may influence responses to items.
2. Factors unaccounted for within the physical and psychosocial environments of the dialysis center may affect the subject's responses to items.
3. Conclusions drawn from the data are generalizable only to those subjects sampled.
4. Self-report is dependent on the individual's ability to understand the items and willingness to respond truthfully.
5. The variables of interest will be measured at one point in time and could be different at other times.
6. Subjects who choose to participate in the study may be different from those who do not.
7. All the instruments are paper and pencil methods of recording responses (mono-method bias).
8. Several of the instruments use summated Likert scale measurements which may obscure the individual's

pattern of response as different pattern responses may result in the same total score (Phillips, 1986).

Delimitations

The following delimitations will be noted for the study: The participant is an adult of either gender 18 years of age or older, currently being treated with maintenance hemodialysis, able to understand the English language, has no documented mental disorder and is physically able to complete the instruments.

Summary

This chapter has presented a discussion of the proposed research study which focuses on the identification and degree of treatment-related stress, satisfaction with nursing care, and depression experienced by the adult chronic hemodialysis patient and the impact those variables have on an individual's perceived quality of life.

Therefore, this chapter presents the rationale for studying treatment-related stress, satisfaction with nursing care, and depression and their relation to quality of life in the chronic hemodialysis patient. Problem statements and derived hypotheses which will guide the study, as will the

conceptual framework, are delineated. Assumptions and limitations of the study are also included as well as delimitations and definition of terms. The next chapter will further develop the conceptual framework and purpose of the study. A review of the literature is also presented.

CHAPTER II

REVIEW OF LITERATURE

Much has been written about the concepts of stress and depression. Likewise, there is a considerable aggregate of literature related to the notion of quality of life in the chronically ill patient. Therefore, the focus of this chapter will be to review the relevant literature as it pertains to: (1) the end stage renal disease patient; (2) stress and the chronic hemodialysis patient; (3) patient satisfaction with nursing care; (4) depression; (5) quality of life; and (6) clinical indicators and demographic data.

The Patient with End Stage Renal Disease

"The patient in chronic renal failure presents a multitude of challenges to the nurse. As kidney function deteriorates, all body systems eventually become involved. A person's quality of life must be entirely redefined as all normal body functions are drastically altered. Every aspect of physical, social, and psychological performance is touched by the disease process" (Lancaster, 1983a, p. 38).

Lancaster's (1983a) perceptions accurately reflect the magnitude of problems associated with the medical diagnosis

of chronic renal failure or ESRD. Most of the immediately observable stressors related to the patient in chronic renal failure are of a physiological nature. Yet, because of the vast involvement of the entire body, the physical stressors serve only as the foundation for the sociocultural, developmental, and psychological stressors. Psychological reactions may well determine how the patient adjusts to the multi-faceted stressors in his or her life. In the words of Burns (1983, p. 14), "helplessness, hopelessness and depression are words used to describe the inevitable debilitating state of mind of the patient with End Stage Renal Disease."

Renal failure, according to Papper (1971), refers to the inability of an organism's kidneys to regulate its internal environment. Lancaster (1983a, p. 38) defines ESRD as "irreversible kidney disease causing chronic abnormalities in the internal environment and necessitating treatment with dialysis or kidney transplantation for survival." There are several conditions and disease processes which are responsible for causing chronic renal failure.

No matter the cause, the end stage renal disease patient will be symptomatic and at risk of death unless

either organ transplantation or some type of dialysis is performed to sustain life (Lancaster, 1983a). Dialysis, whether it be in the form of intermittent peritoneal dialysis (IPD), automated peritoneal dialysis (APD), continuous ambulatory peritoneal dialysis (CAPD), hemodialysis (HD), continuous arteriovenous hemofiltration (CAVH), or continuous arteriovenous hemodialysis (CAVHD) (Winkleman, 1985; Lees, 1990), cannot mirror all the functions of the human kidney.

Renal failure is a stressful event. Treatment options are possibly as stressful as the chronic illness. All major body systems, both physiological and psychological, are involved and that the symptoms which occur are diverse (Butcher & Dolan, 1984; Gutch & Stoner, 1979; Lancaster, 1983a, 1983b). The need for effective intervention, particularly counseling to promote the psychological adjustment of chronic hemodialysis patients to treatment, has been supported by experts on the subject (Gokcakan, 1991). Not only does the end stage renal disease patient experience changes in the physical sense, but the patient also experiences changes in perception of the environment and his or her place in that environment. Due to the changes in perception, the chronic renal failure patient

must receive the support of the health care team in identifying those stressors which exceed or tax the individual's resources as well as assistance to cope with the identified stressors.

Stress and the Chronic Hemodialysis Patient

The concept of stress has been used for centuries (Lazarus & Folkman, 1984). In earlier times, stress was a term employed more in the physical sciences. Stress and strain were apt to be linked. When Selye (1979) introduced his theory of the General Adaptation Syndrome "stress" came to mean a reaction of a living organism in response to environmental demands, rather than the demand itself. Since that time stress has become a very popular concept, covering a variety of phenomena: anxiety, depression, alienation, isolation, disturbed states of the body, environmental conditions, or lack. To add to the confusion, stress sometimes refers to the agent, while at other times, stress refers to the response. Although the term stress was first used many years ago, researchers are still unable to agree as to what constitutes stress. Members of an Institute of Medicine panel state: "...after thirty-five years, no one has formulated a definition of stress that satisfies even a

majority of stress researchers" (Elliot and Eisdorfer, 1982, p. 11). Lazarus (1966) has suggested that stress be conceptualized as an organizing framework for understanding a broad range of phenomena related to human and animal adaptation. Stress, he asserts, is not a single variable, but rather a rubric which is made up of many variables and processes (Lazarus & Folkman, 1984).

There have been recent studies conducted which address the special concerns of chronically ill patients and their response to stress on a daily basis as well as that specific stress related to the treatment regimen. Bihl, Ferrans and Powers (1988) compared treatment-related stressors, quality of life, and health status of hemodialysis and continuous ambulatory peritoneal dialysis patients. Treatment-related stress was measured using a modified version of the HSS. Rather than using a 5-point Likert scale, Bihl, Ferrans and Powers (1988) utilized a 4-point Likert scale. The authors also added three additional items concerning dialysis equipment and the discomfort and boredom associated with the treatment (Bihl, Ferrans & Powers, 1988). The HSS was also modified for use with the CAPD patients and was called the CAPD Stressor Scale. Cronbach's Alpha was calculated for each scale: HSS (.80) and CAPD Stressor Scale (.93).

Regarding the stressor scores, Bihl, Ferrans and Powers (1988) reported findings similar to those of Baldree, Murphy and Powers (1982). Patients experienced similar stressors in both studies, however, those in the Bihl et al. (1988) study experienced a lesser degree of stress than those in the study conducted by Baldree et al. (1982).

In regards to what is "most stressful" to the hemodialysis patient, Tietze (1984) asserts, using the following example, that the patient and the nurse may have two distinctly different agendas. "Patients may have been most concerned about venipunctures or 'getting their weight off', while nurses focused on other patient care issues. The result was that sometimes the patient's most stressful concern was neither identified or dealt with" (Tietze, 1984, p. 13). In particular, the nurse's and the patient's perceptions of psychosocial distress associated with treatment-related stressors were often incongruent.

Using a sample of six chronic hemodialysis patients, Tietze (1984) conducted a study which tested an instrument (The Questionnaire: Stressors of Hemodialysis) which measured degree of stress caused by certain hemodialysis-related stressors. Findings of the study suggest that the most frequent stressor was related to fluid limitations, a

finding demonstrated in earlier studies (Baldree, Murphy & Powers, 1982; DeNour & Czaczkes, 1976; Procci, 1981; Ulrich, 1981). In terms of intensity or severity, at least 50% of the subjects reported the following stressors as generating at least a fair amount of stress: cost factors, fear of access complications, decreased libido, limitations of physical activity, fear of death, itching, uncertainty about the future and angry feelings (Tietze, 1984). Lack of vacation or traveling options, length of treatment, food and fluid restrictions and sleep disturbances were selected as moderate to high producers of stress (Tietze, 1984). Unfortunately, Tietze's (1984) small sample of six patients does not allow for generalization to other hemodialysis patients.

Patient Satisfaction with Nursing Care

In the wake of continuous quality improvement or CQI, health care practitioners and administrators are becoming increasingly concerned with meeting consumer/patient expectations in a manner deemed satisfactory by that consumer. Traditionally, the concern was only for objectively defined medical, treatment, and peer review indicators. Clinical outcomes remain important, but patient satisfaction with care is a priority also. The Joint

Commission on Accreditation of Healthcare Organizations (JCAHO) has included patient satisfaction as one of the domains healthcare providers must consider when measuring how well the institution is performing. No longer is quality care defined simply by the supplier of the service.

Four main areas of focus have been addressed in the literature in relation to studies of patient satisfaction with nursing care (Larson & Ferketich, 1993): 1) congruence/incongruence with anticipated care, 2) styles of nursing, 3) rapport with nurses providing care, and 4) perceived quality of care (Courts, 1988; Ferrans, 1988; Risser, 1975). However, the major portion of satisfaction studies deal not only with the patient's perceptions of nursing care, but with quality of medical care and physician interaction, as well as quality of care rendered by ancillary services (Abramowitz, Cote & Berry, 1987; Carey & Posvac, 1982; Cleary, Keroy, Karapanos, & McMullen, 1989; Guzman, 1988; Linn, 1975; Littlefield & Adams, 1987; Nelson & Niederberger, 1990; Nelson, 1989; Noon & Davero, 1987; Pienschke, 1973; Wiggers, Donovan, Redman, & Sanson-Fisher, 1990).

Patient satisfaction is a reflection of patient expectations, personal preferences and the realities of care

(Larsen & Rootman, 1976; Mechanic, 1968; Ware, Snyder, Wright & Davies, 1983). Several authors support the notion that patient opinion and input related to satisfaction with care is an essential component to be considered when evaluating effectiveness of care provided (Ferrans, Powers & Kasch, 1987); Locker & Dunt, 1978; Ware et al., 1983). They contend that care falls short of the mark if patients are dissatisfied, no matter how high the quality of care as defined by the provider (Locker & Dunt, 1978).

In their study of satisfaction with health care of hemodialysis patients ($n=416$), Ferrans, Powers, and Kasch (1987) found satisfaction with care was most highly correlated with satisfaction with medical ($r=.74$) and nursing care ($r=.74$). Satisfaction with care was only moderately correlated with quality of life ($r=.42$) and satisfaction with health and functioning ($r=.42$) (Ferrans, Powers & Kasch, 1987). Weaker correlations were observed between satisfaction with care and socioeconomic aspects of life ($r=.31$), psychological/spiritual aspects ($r=.32$), and family ($r=.27$) (Ferrans, Powers & Kasch, 1987). Ferrans, Powers, and Kasch (1987) also found that patients who had been treated with hemodialysis for shorter periods of time and who had less education were more satisfied with care.

Depression

Depression is one of the most frequently occurring psychiatric disorders. It is characterized by a negative alteration in mood which may range in severity from a mild sadness to an overwhelming, debilitating despair (Lewis, Grainger, McDowell, Gregory & Messner, 1989). It has been described as "the expression of one's reaction to perceived loss" (Lewis, et. al., 1989, p. 40). Depression can be pathological, caused or exacerbated by certain medications, triggered by certain medical conditions or life/situational events.

According to Weissman, Merikangas and Boyd (1987), depression in the general population can be observed in 8%-12% of males and 20%-26% of females. In a 1977 article, Weissman and Klerman (1977) reported a significantly higher incidence of depression in females over males in the United States and various other parts of the Western world for a period of 40 years. The authors suggested the higher incidence could be explained in one of several possible ways: males under-report depression; females have biological or genetic predisposition for depression; presence of psychosocial factors; or female-learned helplessness (Weissman and Klerman, 1977). Based on an

extensive review of available evidence derived from four sources, the authors concluded that gender differences in depression in Western societies were not an artifact of reporting practices or health care behaviors (Weissman and Klerman, 1977).

Depression in the physically ill is common, with some level of depression seen in about 85% of patients (Lewis et al., 1989). Studies describing the frequency of depression occurring in chronic renal failure patients report estimates varying as high as 70%-100% and as low as 5% (Kennedy, Craven & Roin, 1989; Sacks, Peterson & Kimmel, 1990; Smith, Hong & Robson, 1985). The high incidence of reported depression in chronic renal failure patients may be related to the difficulty in distinguishing somatic symptoms related to the disease process (i.e., bowel, sleep and appetite disorders) from the somatic symptoms associated with depression (Sacks, Peterson & Kimmel, 1990). As Smith, Hong and Robson (1985) point out, the symptoms often considered classic for depression are similar to, even mimic, the psychosomatic symptoms experienced by the "typical dialysis patient."

Sacks, Peterson and Kimmel (1990) report that levels of depression were more strongly correlated with patients'

perception of illness than with actual physical indicators of illness. Based on the findings of their study, it is believed that therapeutic interventions which focus on improving patient perception of illness might reduce depression while improving quality of life and patient compliance with medical regimen (Sacks, Peterson & Kimmel, 1990).

Depression has also been linked with decreased rates of survival among patients with chronic renal failure (Burton, Kline & Lindsey et al, 1986). Although researchers and clinicians have often found it difficult to differentiate between somatic symptoms of depression and those of the chronic illness, one could question whether in fact diminished rates of survival are actually related to the severity of the illness rather than the depressive state, identifying and treating depressive states becomes important in light of how the depression may influence a patient's ability or willingness to comply with treatment or present for hemodialysis treatments.

Quality of Life

Padilla, Grant, and Ferrell (1992) reviewed the nursing quality of life literature for the years covering 1983 through 1991. Although the literature review was not

exhaustive, the search did indicate that quality of life issues are a high area of interest for the nursing community. Over 1,000 references were captured with approximately 20% of those references identified as research (Padilla, Grant & Ferrell, 1992). The bulk of the literature regarding quality of life during the period between 1983 to 1991 focused on the psychosocial and psychological domains, while fewer references involved the social domain (Padilla, Grant & Ferrell, 1992). Traditionally, quality of life has been measured by the health care provider. Objective attempts to measure the quality of life of chronic hemodialysis patients have suggested that patients experience unfavorable alterations in employment and financial status, marital and family life, sexual performance, body image, and functional ability (Stegman et al., 1985).

Quality of life is a multifaceted construct, intensely personal, and laden with subjective value for the individual--all of which make it difficult to measure (Cain & Henke, 1975; Ferrans, 1990; Ferrans & Powers, 1992; Grant et al., 1990; Lubkin, 1986; Young & Longman, 1983). Four components of the human experience influence quality of life: the physical, the psychosocial, the spiritual, and

the cultural (Lubkin, 1986). Similarly, four components of quality of life have been identified as crucial by George and Bearon (1980). They include life satisfaction, self-esteem, health & functioning and socioeconomic status, with life satisfaction being the critical indicator of subjective quality of life (George & Bearon, 1980; Evans et al., 1985). Ferrans (1990) recognizes four other domains, which are again, similar to previously identified domains. They include health and functioning, socioeconomic, psychological/spiritual, and family.

Several authors have attempted to define quality of life. Figure 2 provides a list of a few of the theoretical definitions of quality of life noted in the literature, while Figure 3 furnishes a list of operational definitions.

Ferrans & Powers (1985a) developed the Quality of Life Index (QLI) which measures satisfaction with and importance of: health care, physical health and functioning, marriage, family, friends, stress, standard of living, occupation, education, leisure, future retirement, peace of mind, personal faith, life goals, personal appearance, self-acceptance, general happiness and general satisfaction. Freidenberg, Gordon, Hubbard, Diller (1980)

Theoretical Definitions of Quality of Life

Author	Definition
Ferrans (1990)	A person's sense of well-being that stems from satisfaction or dissatisfaction with the areas of life that are important to him/her".
Grant, Padilla, Ferrell & Rhiner(1990)	"A personal statement of the positivity or negativity of attributes that characterize one's life".
Young & Longman (1983)	Individual aspirations, frustrations, attitudes and perceptions--"the degree of satisfaction with perceived present life circumstances".
Lewis (1982)	Personal control.
Goodinson & Singleton (1989)	"Freedom of action, a sense of purpose, achievement in one's work or family life, self-esteem, integrity and the fulfillment of some fundamental aspects of biological and psychosocial function in relation to activities of daily living and the maintenance of health".
Lewis (1982)	"The degree to which one has self-esteem, a purpose in life and minimal anxiety".
Hornquist (1982)	"The degree of need-satisfaction with the physical, psychological, social, material and structural areas of life".
Dalkey and Rourke (1973)	"A person's sense of well-being, his satisfaction/dissatisfaction with life or happiness/unhappiness in dimensions of health, activity, stress, life-goals, self-esteem, depression, social and family support".
Campbell et al. (1976)	--Satisfaction with marriage, family life, friendships, standard of living, finance and religion.
Cohen (1982)	"The plan and the inter-related purposes of a person that give his/her life what unity it has and bring us to regard them and ourselves as individuals who are irreplaceable".

Fayos & Beland (1981)	"The ability of patients to manage their lives as they evaluate it".
DeHaes & van Knippenberg (1982)	"An overall evaluation of the subjective experience of life".
Szalai (1980)	"The global evaluation of the good or satisfactory character of people's lives".

cont'd - Figure 2. Theoretical definitions of quality of life.

Operational Definitions of Quality of Life

Author	Definition
McCorkle and Young (1978)	Symptom Distress Scale
Benoliel, McCorkle, & Young (1980)	Social Dependency Scale
Ferrans & Powers (1985a)	Quality of Life Index (QLI)
Padilla, Presant, Grant, et al. (1983); Padilla & Grant (1985); Padilla, Mishel & Grant (1992)	Multidimensional Quality of Life Scale (formerly the Quality of Life Index)
Frank-Stromberg & Wright (1984)	Health Survey Instrument

Figure 3. Operational definitions of quality of life.

evaluated QoL indirectly by measuring the extremity of change in physical discomfort, medical treatment, hospital service, mobility, housework, vocational activities, financial, family, social, worry, affect, body image, and communication.

Frank-Stromberg & Wright (1984), using a Health Survey instrument, examined quality of life in terms of the patient's perception of and attitude toward the severity of change due to disease and the subsequent alteration in lifestyle. Includes such items as: demographic data, physical and psychological impact of disease/treatment, health professional and patient relation items. Several authors describe QoL as a multidimensional construct characterized by psychological well-being, physical well-being, symptom control, nutritional concerns, social concerns, and affective states which they measured using the Multidimensional Quality of Life Scale (formerly the Quality of Life Index) (Padilla, Presant, Grant, et al., 1983; Padilla & Grant, 1985; Padilla, Mishel & Grant, 1992).

Clinical Indicators and Demographic Data

There is some research which suggests psychosocial demographic factors play at least as important a role as physical factors in the maintenance of employment among hemodialysis patients (Rasgon et al, 1993). Factors such as level of education (Ferrans & Powers, 1985b; Gutman, Stead & Robinson, 1981; Kutner & Cardenas, 1981; Sherwood, 1983; Walker, 1976), predialysis work status (Ferrans & Powers, 1985b; Gutman, Stead & Robinson, 1981), and attitudes toward working (Antonoff & Mallinger, 1990; Kutner & Cardenas, 1981) have previously predicted the likelihood that patient on chronic hemodialysis would be employed (Rasgon et al., 1993).

In a study of clinical correlates of functional status, as measured by the Sickness Impact Scale (SIP), in patients with chronic renal insufficiency, no effect for commonly used clinical indicators of renal function, such as blood urea nitrogen (BUN) or creatinine, was found (Harris et al., 1993). This finding is supported by Ferrans & Powers (1985b) who found there were no significant differences between employed ($n=20$) and unemployed ($n=20$) hemodialysis patients as measured by seven commonly used illness related variables (Lowrie, Laird, Parker & Sargent, 1981):

predialysis serum potassium, blood urea nitrogen, serum phosphorus, mean arterial pressure, serum creatinine, hematocrit, and interdialytic weight gain. Demographic variables used, such as education, income, vital signs, gender, serum sodium showed varying degrees of correlation (Harris et al., 1993).

Summary

Stress, depression, and quality of life are broad, rather intangible, sometimes difficult to define, and even more difficult to measure concepts. However, each are critical components of the chronic illness experience. End stage renal disease patients comprise one of the largest groups of individuals with a chronic illness. They experience a variety of stressful demands, many of which can be attributed to the treatment they must undergo in order to continue living.

This chapter presented a review of selected literature relative to the ESRD patient, stress, satisfaction, depression, and quality of life. In the next chapter, the methodology of the research is presented in detail.

CHAPTER III

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

To describe and examine treatment-related stress, satisfaction with nursing care, and depression in chronic hemodialysis patients in relation to perceived quality of life, a predictive correlational design was used. Included in this chapter is a description of the research design, setting, sample selection, protection of human subjects, instrumentation, and procedures for data collection and analysis.

Methodology

In order to investigate the questions of this study, a predictive correlational research design was selected. A design of this type investigates the degree to which changes in one variable correspond to changes in another (Waltz & Bausell, 1981). The variables, whose interrelationships were examined, are treatment-related stress level, satisfaction with nursing care, depression, quality of life and demographic data. Although this design is

nonexperimental and cannot explain causality, it does have some distinct advantages for the clinical setting.

A correlational research design:

1. "permits the assessment of several variables and their interrelationships simultaneously" (Waltz & Bausell, 1981, p. 131).
2. "is an efficient and effective means of collecting a large amount of data about a problem area" (Polit & Hungler, 1983, p. 182).
3. is useful in instances where the problems of interest are not amenable to experimentation as often is the case in clinical research (Polit & Hungler, 1983; Walt & Bausell, 1981).
4. can be conducted in the clinical or "realistic" setting (Polit & Hungler, 1983; Walt & Bausell, 1981).

Setting

The data collection occurred in a freestanding outpatient dialysis center and a hospital-based acute care only hemodialysis center located in a southern city of about 250,000. The centers have the same medical director, are less than a mile apart, and have different nursing staffs.

The freestanding center is privately owned and is a for-profit enterprise. The hospital-based acute unit is a not-for-profit, public agency. Primarily, the freestanding center provides peritoneal and chronic hemodialysis. It is a new facility, having been in operation for less than six months. However, the patient population and many of the staff members are an established group. Several of the teaching hospital staff elected to move to the new dialysis center as did most of the patients--all of whom transferred from the large 499-bed academic health science center which now houses only an acute unit. Services offered by the two centers are dissimilar in that, although both units provide hemodialysis services, the freestanding center does not provide acute services or routinely do access or line placement procedures. The acute unit does not perform routine chronic hemodialysis nor are peritoneal dialysis services available. Peritoneal dialysis is done elsewhere in the teaching facility, by other specially trained medicine nurses. Patients in this acute setting are patients who are routinely dialyzed at the above mentioned freestanding center or possibly one of two other freestanding, privately-owned centers--both approximately 2 miles from the hospital-based program.

The setting for the administration of the selected instruments, medical data form and the demographic questionnaire was at the patient's chairside or bedside, unless the individual elected to complete the forms while waiting to get on dialysis ($n=0$) or after the hemodialysis treatment had been completed ($n=3$). In all cases, the research assistants facilitated the data collection period by insuring the subject had adequate lighting and space to complete the instruments in relative privacy. The subject was provided a writing area (a clipboard or lapboard) if a surface was not already available on which to complete the forms. The subject was also provided a pencil with an eraser. Although having the potential to be a stressor, conditions that the researcher was not able to control for included room temperature and extraneous noise, due to the fact several persons share the large dialysis areas (nurses, technicians, and patients).

Population and Sample

The target population included those individuals with the medical diagnosis of chronic renal failure or end stage renal disease (ESRD). For the proposed study, subjects

included in the sample were required to meet the following conditions:

1. 18 years of age or older.
2. On hemodialysis.
3. Able to understand the English language.
4. Alert and oriented to time, place, and person.
5. Have no current documented diagnosis of mental disorders.
6. Able and willing to complete the study packet.

Any chronic renal failure patient willing to participate in the study and who met the five other requirements outlined above was eligible to become a part of the sample. Thus, the sampling technique was nonprobability.

Although probability sampling techniques are preferred by most research scientists, nonprobability sampling techniques are more frequently employed by members of the health science community (Polit & Hungler, 1983 & 1989; Rubinson & Neutens, 1987; Wilson, 1989). In cases where nonprobability sampling techniques are used, all elements of the population are rarely known. The various sampling techniques are non-random, therefore, the results obtained for the sample are generalizable only to that sample. There are a number of reasons researchers in the health

community choose to use the inferior sampling technique. Constraints related to time, expense, and subject availability are the most common reasons for using any one of the many nonrandom sampling techniques.

Furthermore, when dealing with special population groups, such as the chronically ill, there are ethical and practical problems in addition to the more commonly encountered ones (Wilson, 1989). Sexton (1983) identified the following areas of concern when the population comprises the chronically ill:

identification of subjects and their reluctance to participate in studies--a problem of sufficient sample size;

implementation of certain designs (a panel study, longitudinal, experimental, or correlational) due to the exacerbations, remissions, and mortality of the illness--a problem of limited study design;

consideration of the feasibility of the energy and the abilities required of the patient for each type of data collection--a problem of data collection (Wilson, 1989, p. 268).

The proposed study used a nonprobability sampling technique--convenience sampling. The most influential reason for this choice of sampling method was patient availability. Lack of time and funds were also major factors influencing the choice of sampling style. In addition, difficulty obtaining support from freestanding

center administrators who expressed concern regarding liability related to the potential for researcher exposure to infectious diseases and/or blood products proved to be a major and burdensome obstacle. In order to attempt to obtain a sufficient sample of participants, the research assistants were instructed to approach each hemodialysis patient as a potential candidate, screen those who agreed to serve as volunteers and determine eligibility based on the inclusion criteria specified earlier.

For the purposes of this study, all available members of the population, approximately 48 patients in the freestanding center and unknown in the acute setting, were invited to participate. A total of 55 patients were asked to participate and of those, 45 agreed to consent to the study. Although there are no formulas for estimating adequate sample size when nonprobability sampling techniques are used (Polit & Hungler, 1989; Rubinson & Neutens, 1987; Wilson, 1989), Polit & Hungler (1989) recommend using a minimum of 10 subjects for each subdivision of the data, or cell of the design (p. 426). While ten subjects are considered the acceptable minimum--20 or 30 subjects per cell of the design are preferable.

Protection of Human Subjects

The proposed study was submitted for review and approval to two Human Subjects Committees. First, the proposal was submitted to the Institutional Review Board (IRB) of Louisiana State University Medical Center-Shreveport. Once approved, it was submitted to the Human Research Review Committee at Texas Woman's University prior to initiating any aspect of the study. In addition, agency approval was obtained as required prior to submitting the proposal to either of the respective Denton and Shreveport Human Subjects Committees. All approvals were documented in written form.

Prior to the collection of patient information or administration of the selected instruments, participant consent was obtained using a written consent form (see Appendix B). The consent form outlined, briefly, a description of the study and expectations required of the participants. To insure that the consent form was read in its entirety, the data collector reviewed the contents of the document with each subject. It was made clear to each subject that participation was strictly voluntary and that they retained the option to withdraw from the study at any time during the administration of the tests. To insure

confidentiality, a coding system was used to identify each instrument but did not indicate the identity of the subject. The coded consent forms were kept in the investigator's possession in a locked file cabinet. Identifying materials will be destroyed within two years after the completion of the study.

Instruments

It is important to ascertain the measurement framework of an instrument in order to "guide the design and interpretation of the measurement" (Waltz, Strickland & Lenz, 1984, p.3). Therefore, the researcher must ask are the instrument(s) norm- or criterion-referenced. Waltz and Bausell (1981) also contend that in addition to identifying the measurement framework, it is necessary to determine whether the instrument is objective or subjective.

Objective instruments are those instruments which contain items that have a predetermined, constructed response set (Waltz & Bausell, 1981). Subjects are, therefore, limited as to how they may answer or respond to an item. Subjective measures allow the subject freedom in responding to items as the response is not pre-constructed (Waltz & Bausell, 1981).

A criterion-referenced instrument is one used to determine whether an individual has acquired or mastered a predetermined set of behaviors (Waltz, Strickland & Lenz, 1984). In contrast, the norm-referenced instrument is used when the subject's performance is to be evaluated relative to the group's performance (Waltz, Strickland & Lenz, 1984). The norm-referenced tool should, if constructed well, discriminate between subjects possessing different amounts of the characteristic (Waltz, Strickland & Lenz, 1984).

For the purposes of this research study, the instruments were objective and the data obtained from each measure was interpreted using the norm-referenced approach. Each subjects' scores were compared to and evaluated in light of the group's statistics.

In order to explore the relationship between treatment-related stress, satisfaction with nursing care, depression and quality of life in the hemodialysis patient, subjects were asked to complete the Ferrans and Powers Quality of Life Index (QLI), dialysis version (Ferrans, 1990; Ferrans & Powers, 1985a; Ferrans & Powers, 1992), Larson's Caring Satisfaction Scale (CARE/SAT) (Larson, & Ferketich, 1993), the CES-Depression Scale (CES-D), the Hemodialysis Stressor

Scale (HSS) (Baldree, Murphy, & Powers; 1982) and the Simmons Hemodialysis Stressor Scale (SHSS). In addition to the study instruments, each of the subjects were also asked to complete a demographic data questionnaire soliciting information on age, ethnicity, gender, living arrangements, marital status, length of time on chronic hemodialysis, employment history, presence and type of family support, income, educational status and concomitant diseases. Clinical and laboratory data such as hemoglobin, hematocrit, serum phosphorus and potassium, etiology of the renal failure and interdialytic weight gains was also collected by the investigator.

Each participant study packet contained the CES-D (Appendix C), the HSS (Appendix D), the SHSS (Appendix E), the CARE/SAT (Appendix F), and the QLI (Appendix G). Also included in the study packet was a demographic data questionnaire (Appendix H) and a freshly sharpened pencil with an erasure. The arrangement of the instruments was the same for all packets: cover page with code, general instructions and research assistant initials (Appendix I), HSS, CES-D, SHSS, CARE/SAT, Demographic Data questionnaire, and QLI. Two copies of the consent form were included in the packet. One copy was signed and returned to the

research assistant. The other copy was made available to the subject as a personal copy, to be kept or discarded at their discretion.

It was expected that the average participant would complete all forms in one hour, however, subjects were allowed as much time as they required. Some subjects completed all documents in as little as 20 minutes, while others required up to 90 minutes. When the subject indicated that he/she had completed all the forms, final instructions were to return the packet of instruments to the manila envelope in order to promote confidentiality. Only then did the research assistant collect the packet.

The Hemodialysis Stressor Scale

The Hemodialysis Stressor Scale (HSS) is a 29-item, self-report, five-point Likert-scaled instrument which measures the degree and type of stress experienced by the hemodialysis patient. Individuals were asked to rate how stressful each item was on a scale of "1=not at all" to "5=a great deal." The participant's score was determined by summing the score for all items.

Validity

Although Gurklis and Menke (1982) discussed reliability of the HSS and JCS, no mention of validity was made.

Fortunately, Murphy, Powers & Jalowiec (1985) as well as Baldree, Murphy and Powers (1982) did address the validity of the HSS. Content validity was assessed using literature review, nurse experts and a patient pilot study (Baldree, Murphy and Powers, 1982).

In a later psychometric evaluation, construct validity was addressed by Murphy, Powers, and Jalowiec (1985). It was felt that although a two-factor solution explained 27% of the variance, loading on Factor I were the physiologic items and psychosocial items on Factor II, it was too simplistic (Murphy, Powers, & Jalowiec, 1985). Therefore, an unrestricted factor solution was run with an eight-factor solution the result. While the eight-factor solution, when subjected to Varimax[®], explained 45% of the variance, the authors note that of the eight factors, only three satisfied Kaiser's criterion (an eigen value of ≥ 1) for significance (Murphy, Powers, & Jalowiec, 1985).

Based on their analysis, a three-factor solution subjected to Varimax[®] rotation, provided the best fit for the data set, explaining 31% of the variance. The three

factors loaded as psychobiologic (Factor I), psychosocial (Factor II), and dependency/restriction (Factor III) (Murphy, Powers, & Jalowiec, 1985).

Reliability

In the following table are some examples of the reliability estimates obtained in previous studies for the HSS (Table 1). Two studies have reported reliability estimates for the total HSS and its physiological and psychosocial subscales (Murphy, Powers & Jalowiec, 1985; Gurkis & Menke, 1988). Reliability estimates for the psychosocial subscale were consistently high, .88 and .89 (Murphy, Powers & Jalowiec, 1985; Gurkis & Menke, 1988). However, reliability estimates for the physiological

TABLE 1

Reliability Estimates for the Hemodialysis Stressor

Scale (Cronbach's Alpha)

<u>Source</u>	Physiological		Psychosocial		<u>N</u>
	<u>Total</u>	<u>Subscale</u>	<u>Subscale</u>		
Murphy et al (1985)	.89	.69	.88		174
Gurkis & Menke (1988)	.90	.63	.89		68

subscale were much lower, .69 and .63 (Murphy, Powers & Jalowiec, 1985; Gurkis & Menke, 1988). Murphy, Powers and Jalowiec (1985) suggest that the low physiological subscale coefficient may have been due to the subscale's small number of items. Reliability estimates for the total stress scale were also consistently high: .89 and .90 (Murphy, Powers & Jalowiec, 1985).

Simmons' Hemodialysis Stressor Scale

The Simmons' Hemodialysis Stressor Scale is a 50-item, self-report, four-point Likert scale that was intended to measure type and degree of treatment-related stress experienced by the chronic hemodialysis patient. Patients were asked to rate the degree of stress experienced in regards to each of the 50 items on a scale of "1=the item never bothers me" to "4=the item constantly bothers me." Total score was achieved by summing the individual items. There was no reliability data for the SHSS. Content validity was assessed by means of an extensive literature review. Concurrent validity was investigated by determining the relationship with the HSS. This provided a validity coefficient.

CARE/SAT

Larson's Caring Satisfaction Scale (CARE/SAT) (Larson, & Ferketich, 1993) is a visual analog scale consisting of 29-items. Larson and Ferketich (1993) have completed extensive psychometric evaluation on the CARE-Q, the instrument upon which the CARE/SAT is based, however, the CARE-Q was limited in its use as it only allowed participants to rank the caring behaviors considered important in the nurse. For the CARE/SAT instrument, the patient was asked to mark an "X" along the 100-centimeter line to indicate how much or how little they agreed or disagreed with the particular nursing behavior or attitude (Larson & Ferketich, 1993). The CARE/SAT was scored by summing the individual scores which ranged from 0=strongly disagree to 10=strongly agree. The possible range was 0 to 290. The negatively worded items were reversed scored.

Validity

The CARE/SAT is the fourth phase of a study program conducted by Larsen (1993). To assess construct validity, Larson and Ferketich (1993) administered the CARE/SAT along with the Risser Patient Questionnaire (Hinshaw & Atwood, 1982). The reported correlation of $r=.80$ was significant at

p=.05, n=40. Construct validity was also demonstrated by means of factor analysis using responses of 264 subjects (Larson & Ferketich, 1993). A three-factor solution emerged following Varimax® rotation. To be considered, the factor had to load with a eigenvalue ≥ 1 . Larsen and Ferketich (1993) reported that Factor I accounted for 34.8% of the variance (eigenvalue, 10.09), Factor II explained 7.3% of total variance (eigenvalue, 2.11), and Factor III explained 4.8% of the variance (eigenvalue, 1.4). The resulting three subscales were respectively identified as Assistive, or basic nurse caring behaviors; Benign Neglect, or noncarative nursing behaviors; and Enabling, nurse behaviors which assist the patient in the understanding and management of his/her illness.

Reliability

The internal consistency of the CARE/SAT was assessed using Cronbach's alpha, for which a 0.94 was achieved (Larson & Ferketich, 1993). No measures of stability were reported. The CARE/SAT has been used only in hospitalized patients or those recently discharged (Larson & Ferketich, 1993).

CES-Depression Scale

The Center for Epidemiologic Studies Depression Scale (CES-D) is a 20-item scale measuring depression. The scale consists of a four-point Likert-type scale, ranging from zero to three, where individuals were asked to rate how often they experienced each of twenty symptoms during the past week. Responses could range from "0=less than 1 day" to "3=5 to 7 days". Four of the self-report items were positively worded and were reversed scored. The individual's score was determined by calculating the sum for all items. Subjects that achieved a total score of 16 or greater were considered depressed.

Validity

Content validity for the CES-D has been demonstrated. Items for the CES-D were selected from several sources, including the Beck Depression Inventory and the Zung Depression Scale. Item selection was driven by eight components of depression generally accepted as representative of depression that were identified through literature search and factor analysis. Those components included "depressed mood, feelings of guilt and worthlessness, feelings helplessness and hopelessness,

psychomotor retardation, loss of appetite, and sleep disturbance" (Radloff, 1977, p. 386).

Extensive support has been demonstrated regarding the concurrent validity of the CES-D. The CES-D has been correlated with the Hamilton Rating Scale, the Raskin Depression Scale, and the Symptom Checklist (SCL-90) (Weissman, Sholomskas, Pottenger, Prusoff & Locke; 1977). Using a sample of 406 psychiatric patients, divided into five groups (acutely depressed, formerly depressed, drug-addicted, alcoholics, and schizophrenics), alpha coefficients ranged from .28 to .87, $p < .05$ (Weissman, Sholomskas, Pottenger, Prusoff & Locke; 1977). The CES-D was able to discriminate between these groups, however, further investigation lead the authors to believe that the CES-D is a useful tool for screening for the presence of major depressive symptoms, but it cannot differentiate to such a degree as to be a diagnostic tool (Myers & Weissman; 1980).

Reliability

In a series of epidemiological studies, spanning a period of about 18 months, the Center for Epidemiologic Studies, conducted four household surveys using the CES-D. Over 3800 individuals participated in the surveys. Radloff

(1977) reported coefficient alphas of .85, .85, .84, and .90 for each of the surveys, respectively. Using the same data, split-halves α were calculated (.77, .76, .77, and .85) as well as coefficients resulting from analysis using Spearman-Brown (.87, .86, .87, .92) (Radloff, 1977).

Ferrans' Quality of Life Index

The Quality of Life Index (QLI) is a 64-item scale measuring quality of life in the general population (Ferrans & Powers, 1985a). The Quality of Life Index-dialysis version (Ferrans and Powers, 1985a) is a 70-item measure composed of two parts. Part I measures subject satisfaction with the domains of life; part II measures the importance of those domains to the individual (Goodinson & Singleton, 1989). Subjects were asked to indicate their satisfaction with or the importance of each of the items by rating each item on a 6-point Likert scale. A 6-point Likert scale was used in order to increase discrimination (Goodinson & Singleton, 1989). For part I, the scale ranged from "very satisfied or 6 to very dissatisfied or 1". For part II, the scale ranged from "very important (6) to very unimportant (1)". Quality of life scores were calculated by adjusting satisfaction scores with the corresponding importance score,

thereby, producing the highest score for items that had both high satisfaction and high importance. Quality of life scores were calculated for the entire instrument as well as subscale scores.

Items assessed by the QLI were health care; physical health; marriage; family; friends; stress; standard of living; occupation; education; leisure; future retirement; peace of mind; life goals; personal faith; appearance; self-acceptance; general happiness; and general satisfaction. The four domains were (a) health and functioning, (b) socioeconomic, (c) psychological/spiritual, and (d) family (Ferrans, 1990). The QLI has been used with elderly populations, general populations, graduate students, spouses of CAPD patients, and chronic hemodialysis patients with acceptable reliability.

Validity

Content and criterion-related validity of the QLI has been supported (Goodinson & Singleton, 1989). Content validity was determined based on an extensive literature review and on the domains that patients ($n=37$) and graduate student volunteers ($n=88$) identified as satisfying components of life (Ferrans & Powers, 1985a; Ferrans & Powers, 1992). In addition, using a panel of seven experts,

Oleson (1990) evaluated the content validity index of the QLI. To be considered a valid instrument, the instrument needed to achieve a score of 80% at the p-value level of significance of .05 (Oleson, 1990). The instrument achieved 87%, thus supporting its content validity (Oleson, 1990).

Criterion-related validity was assessed by asking subjects to respond to an overall satisfaction with life question and comparing that response with the responses achieved on the QLI. The resulting validity coefficients were 0.75 for graduate students ($n=69$) and 0.65 for dialysis patients ($n=37$) (Ferrans & Powers, 1985a). Construct validity has been demonstrated by results of a factor analysis using a sample of 349 in-unit dialysis patients (Ferrans & Powers, 1992). Ferrans and Powers (1992) found that correlations between factors were greater than .30 whether a three-, four-, five-, or six-factor solution was used; however, only the four-factor solution met all five criteria established by the authors to assist them in determining how many factors to extract. The four-factor solution explained 91% of the total variance, with factor eigenvalues for the four factors as follows: 26.02, 3.96, 2.78, and 2.28 (Ferrans & Powers, 1992). The four factors

were labeled, respectively: health and functioning, socioeconomic, psychological/spiritual, family (Ferrans & Powers, 1992).

Reliability

The QLI has extensive reliability data. Initial psychometric assessment of the instrument revealed internal consistency of 0.93 (graduate students) and 0.90 (dialysis patients). Test-retest reliability at 2-weeks was .87 (graduate students, n=69) and 0.81 at one month with the dialysis patients, n=20 (Ferrans & Powers, 1985a). Support for the internal consistency (Cronbach's alpha) of the QLI was achieved: 0.93 for the graduate students (n=69 and 0.90 for the dialysis patients (n=20) (Ferrans & Powers, 1985a).

In a later study, Ferrans (1990) reported a coefficient alpha at 0.95 for the entire instrument while the subscales' internal consistency ranged from 0.66 - 0.93; 0.90 for the health and functioning subscale, 0.84 for the socioeconomic subscale, 0.93 for the psychological/spiritual subscale, and 0.66 for the family subscale (see Table 2). For the dialysis version of the instrument, Ferrans & Powers (1992) reported Cronbach alphas 0.93 for the entire scale and 0.87,

TABLE 2Reliability Estimates for the Quality of Life Index(Cronbach's Alpha)

	Total	SS 1	SS 2	SS 3	SS 4	N
Ferrans &	.93	---	---	---	---	69*
Powers (1985a)	.90	---	---	---	---	20
Ferran (1990)	.95	.90	.84	.93	.66	---
Ferrans &						
Powers (1992)	.93	.87	.82	.90	.77	349

--- = data not available * = graduate students

SubScales: 1-Health and Functioning

2-Socioeconomic

3-Psychological/spiritual

4-Family

0.82, 0.90, and 0.77 for the health and functioning, socioeconomic, psychological/spiritual, and family subscales, respectively.

Demographic Data Questionnaire

In addition to the study instruments, each of the subjects were also asked to complete a demographic data questionnaire (Appendix H) soliciting information on age, race, gender, living arrangements, marital status, length of time of chronic hemodialysis, income, educational background and employment status.

Data Collection

The study was designed to measure the relationship of four variables on QoL in the chronic hemodialysis patient. Each participant was asked to complete all instruments (HSS, SHSS, CARE/SAT, CES-D, QLI, and a demographic questionnaire) during one session. The total number of items each participant was expected to complete was about 213. A written consent addressed participant requirements and risks/benefits of the study. For patients who could not read, the research assistant read the items aloud. It was expected that all forms could be completed in about one hour, but subjects were allowed as much time as they required.

Data was collected by seven research assistants-- associate degree (n=1), baccalaureate (n=3) and masters-

prepared ($n=3$) nursing personnel employed in staff development or infection control departments at a large academic health science center. All were females, with a range of nursing experience of nine to more than 20 years. Most of the research assistants had worked together on projects before. The principal investigator met with each of the nurse research assistants and discussed the nature of the study, expectations of each assistant, methodology and data collection procedures. The investigator also reviewed administration instructions for each instrument with the research assistants and how the instrument should be completed. A review of patient rights, including confidentiality and the right to decline to participate at any time, and the coding system was discussed. During data collection procedures, the principle investigator was available to answer questions for the research assistants and/or study participants. She was within walking distance and available by phone and beeper.

Potential candidates who met the pre-established criteria for age, treatment by means of hemodialysis, and orientation and who lacked a diagnosis for mental disorders and could understand the English language, were asked, one-on-one, to participate in the study. The brief verbal

explanation, based upon the contents of the consent form, addressed participant requirements and risks/benefits of the study. Each subject who volunteered was asked to read and sign a "consent for participation" form (Appendix B). The research assistants reviewed the form with the patient and answered any resulting questions. Participants were assured, throughout the testing procedure, that they retained the right to withdraw from the study at any point.

Prior to completing the test packet, each individual was asked to read the instructions for each instrument and proceed as directed. A sample item was included for most instruments to insure clear directions. Each packet contained the HSS, the SHSS, CARE/SAT, CES-D, QLI, a demographic data questionnaire and a freshly sharpened pencil with an eraser. The arrangement of the instruments was such that the demographic data questionnaire and QLI were last. The CES-D separated the HSS and SHSS. The CARE/SAT followed the SHSS. If a suitable writing surface was not available, a clip board was provided.

It was expected that the average participant would complete all forms in one hour, however, subjects were allowed as much time as they required. When the subject indicated that he/she had completed all the forms, final

instructions were to place the packet of instruments in the manilla envelope and return the packet to the research assistant, who then collected the packet.

To cue individuals that the form was changing and thus the instrument directions, the title headings were enlarged significantly with all except the CARE/SAT and QLI. Because the ESRD patient is often visually impaired, and may require large type print, the investigator provided for each patient, when possible, large print versions of the instruments. Where this was not available or possible, as in the case of the CARE/SAT, the research assistants read to or assisted the patient as necessary.

Treatment of Data

The data was analyzed using descriptive and inferential statistics. Reliability coefficients were reported for each of the instruments. The SHSS was examined for internal consistency as well as equivalence and homogeneity. Exploratory data analysis was used to determine if the data met the assumption of normality. Regression procedures were performed to analyze which of the independent variables were the best predictors of quality of life in hemodialysis

patients. Correlational statistics were performed to determine what relationships, if any, exist between the independent variables.

All analyses were performed using SAS[®] version 6.08. All tests were performed at the alpha =0.05 level of significance. Analysis where there were only two groups (e.g. sex, predialysis weight gain) being compared, were performed using a two-tailed t-Test for independent groups (see Figure 4).

Reliability of the study instruments (CES-D, HSS, SHSS, CARE/SAT, and QLI) were tested using Cronbach Alpha coefficients. This was performed both overall and by subscales. Pearson correlation coefficients were also calculated for the correlation of the CES-D scale with the HSS and SHSS scales. These coefficients were also determined for the QLI correlated with the CES-D, HSS, SHSS, and CARE/SAT scales. The p-values associated with the Pearson correlation coefficients only test whether the correlation is significantly different from zero and not whether the correlation itself is significant.

hypothesis	variable	level of data	instrument	statistical analysis
H ₁	1. Quality of life 2. Treatment-related stress 3. Treatment-related stress 4. Satisfaction w/nursing care 5. Depression	1. Interval * 2. Interval * 3. Interval * 4. Interval * 5. Interval *	1. QLI 2. HSS 3. SHSS 4. CARE/ SAT 5. CES-D	Multiple Regression Pearson Correlation
H ₂	1. Quality of life 2. Demographic variables: age, gender, race, marital status, employment status, education, income, length of time on dialysis (LOTOD), living arrangement	1. Interval * 2. Nominal (age to employment, living arrangement) Ordinal (education, income) Interval (LOTOD)	1. QLI 2. DDS ^a	Pearson Correlation
H ₃	1. Quality of life 2. Depression 3. Clinical laboratory data: Hgb, Hct, K ⁺ , BUN, creatinine, phosphorus, predialysis weight gain	1. Interval * 2. Interval * 3. Interval *	1. QLI 2. CES-D 3. MDF ^b	Multiple Regression (continued- next page)

H ₄	1. Treatment-related stress 2. Treatment-related stress 3. Depression 4. Satisfaction w/nursing care	1. Interval * 2. Interval * 3. Interval * 4. Interval *	1. HSS 2. SHSS 3. CES-D 4. CARE/SAT	Pearson Correlation
H ₅	1. Depression 2. Pre-dialysis weight gain	1. Interval * 2. Ratio	1. CES-D 2. MDF ^b	Two group t-Test
H ₆	1. Treatment-related stress 2. Treatment-related stress 3. Satisfaction w/nursing care 4. Depression 5. Demographic variables: age, gender, race, marital status, employment status, education, income, length of time on dialysis (LOTOD), living arrangement	1. Interval * 2. Interval * 3. Interval * 4. Interval * 5. Nominal (age to employment, living arrangement) Ordinal (education, income) Interval (LOTOD)	1. HSS 2. SHSS 3. CARE/SAT 4. CES-D 5. DDQ ^a	Pearson Correlation

* Data were assumed to be of equal interval (Kerlinger, 1986, p. 402).

^a Demographic Data Questionnaire ^b Medical Data Form

Figure 4. Data analysis of study hypotheses.

Summary

The design, setting, population and sample for this descriptive, correlational study of predictors of quality of life in chronic hemodialysis patients were discussed. Protection of human subjects and the measures to insure it were also examined. A discussion of the instruments used in the study was provided and the procedures for collection and treatment of data were addressed.

CHAPTER IV

ANALYSIS OF DATA

This descriptive, correlational, predictive study was designed to answer the following: What are the relationships among treatment-related stress, satisfaction with nursing care, and depression in the adult patient on chronic hemodialysis? What is the effect of treatment-related stress, satisfaction with nursing care, and depression on the quality of life of chronic hemodialysis patients? Are demographic and/or selected clinical variables predictive of quality of life? This chapter contains a description of the sample and the findings from this study of predictors of quality of life in the hemodialysis patient. Demographic data, the six hypotheses, and instrument performance are discussed. Additional findings are enumerated. A summary concludes the chapter.

Description of the Sample

Data were collected over a three-month period of time (January 26, 1995 through April 14, 1995) from a convenience sample using self-report instruments. A total of 55

patients were asked to participate in the study. Of those asked, 45 (81.82%) consented to be part of the study and completed the instrument packet. Another individual agreed to participate, however, he did not meet the criteria for age as he was 17.3 years old. Several of the individuals, particularly those in the acute setting, expressed a willingness to participate, but for various medical reasons, were too sick to do so. One elderly woman agreed to complete the self-report instruments, however, was unwilling to sign the consent without her daughter being present, and therefore, could not participate.

The demographic data questionnaire was used to collect data regarding: age, length of time on dialysis, employment history, marital status, ethnicity, gender, living arrangements, family support, education, income, and concomitant diseases.

Forty-five subjects completed the demographic data questionnaire. Twenty-eight (62.2%) of those agreeing to participate were patients at the freestanding chronic hemodialysis unit and 17 (37.8%) were patients admitted to the large teaching hospital and receiving hemodialysis treatments in the acute unit. The age of the sample ranged from 22 to 92 year of age with a median age of 46 years.

The mean age was 49 years. Eighteen (40%) of the participants were male and 27 (60%) were female. The predominant ethnic origin was Black/African American (91.1%), followed by Caucasian (6.7%), and American Indian (2.2%). Forty-four (97.8%) of the participants responded to the item regarding marital status. Fourteen (31.8%) of the subjects reported never having married. Ten (22.7%) of the subjects were married, eight (18.2%) were widowed, six (13.6%) were divorced, five (11.4%) were separated from their partners, and one (2.3%) indicated "other" as their marital status. Responses ($n=44$) to the question regarding living arrangements were varied: 19 (43.2%) lived either with a spouse and/or their children; ten (22.7%) lived with their parents; six (13.6%) lived alone and five (11.4%) lived with friends or non-relatives. Four (9.1%) of the individuals wrote in their response to living arrangement: three (6.8%) of the four indicated they lived with a sister while one (2.3%) lived in a nursing home. One (2.3%) individual elected not to respond to this item. A summary of dialysis center type, age, gender, ethnicity, marital status, and living arrangement is presented in Table 3.

Table 3

Summary of Sample (N=45) Characteristics for Patient
Location, Age, Gender, Ethnicity, Marital Status, and
Living Arrangement

Variable	n	(%)	Valid n
Center Type:			
Freestanding, chronic	28	62.2	45
Hospital, acute	17	37.7	
Age (years):			
20-29	6	13.3	45
30-39	9	20.0	
40-49	10	22.2	
50-59	8	17.8	
over 59	12	26.7	
Gender:			
male	18	40.0	45
female	27	60.0	
Ethnicity:			
American Indian	1	2.2	45
Asian	0	0	
Black	41	91.1	
Caucasian	3	6.7	
Hispanic	0	0	
Marital Status:			
no response	1	0	44
never married	14	31.8	
separated	5	11.4	
married	10	22.7	
widowed	8	18.2	
divorced	6	13.6	
other	1	2.3	

Table 3 continued next page

Table 3, cont'd

Summary of Sample (N=45) Characteristics for Patient
Location, Age, Gender, Ethnicity, Marital Status, and
Living Arrangement

Variable	n	(%)	Valid n
Living Arrangement:			44
no response	1	0	
lives alone	6	13.6	
spouse/children	19	43.2	
parents	10	22.7	
friend/nonrelative	5	11.4	
sister	3	6.8	
nursing home	1	2.3	

Subjects were asked to indicate the highest educational level achieved. Most of the subjects ($n=26$, 57.8%) completed the 9th-12th grade education level while ten (22.2%) completed 8th grade or less. Seven (15.6%) subjects reported having some college or trade school experience. One (2.2%) individual was a college graduate and one (2.2%) had attended graduate school. Most of the subjects were unemployed ($n=35$), either retired ($n=12$, 26.7%) or not working at this time ($n=23$, 51.1%). Ten subjects were employed either full-time ($n=7$, 15.6%) or part-time ($n=3$, 6.7%). Several subjects ($n=33$), reported having worked a number of years prior to starting dialysis, with a mean of

18.14 years and a range varying from one to 51 years. Forty-four subjects responded to the combined household income question with 70.5% (n=31) reporting an income of \$10,000 or less. Eight (18.2%) had an income of \$10,001 to 20,000. Only five individuals reported incomes of \$20,001-\$30,000 (n=3, 6.8%) and \$30,001-40,000 (n=2, 4.5%). Table 4 is a summary of the sample characteristics concerning education, employment, work history, and income demographic data.

Table 4

Summary of Sample (N=45) Characteristics for Education,
Employment, Work History, and Combined Household Income

Variable	n	%	Valid N
Education:			
≤8th grade	10	22.2	45
9th - 12th grade	26	57.8	
some college/trade	7	15.6	
college graduate	1	2.2	
graduate school	1	2.2	

Table 4 continued on next page

Table 4, cont'd

Summary of Sample (N=45) Characteristics for Education,
Employment, Work History, and Combined Household Income

Variable	n	%	Valid N
Employment:			
full-time	7	15.6	45
part-time	3	6.7	
not employed	23	51.1	
retired	12	26.7	
Work history:			
no response	4	0	41
did not work	8	19.5	
1-10 years	9	21.9	
11-20 years	12	29.3	
21-30 years	10	24.4	
31-51 years	2	4.9	
Combined household income:			44
no response	1	0	
≤ \$10,000	31	70.5	
\$10,001-20,000	8	6.8	
\$20,001-30,000	3	6.8	
\$30,001-40,000	2	4.5	

Forty-one, or 91.1% of the sample, responded to the length of time on dialysis question. Of the 41, the majority (n=30, 73.2%) had received hemodialysis treatments for less than two years. Six (14.6%) subjects had received hemodialysis treatments for two to three years and five (12.2%) greater than three years. Some patients had only recently begun hemodialysis (one week). The patient who had been dialyzing the longest time, reported five years. Forty-three (95.6%) of the subjects responded to the item asking the number of times hemodialysis treatments were received each week. Most of the patients, if they reported, dialyzed an average of 3.2 hours. However, the range is from one hour to four plus hours. Thirty-seven participants routinely received three treatments per week. Five individuals (11.6%) received hemodialysis treatments twice each week and one (2.3%) received treatments more than three times each week. Table 5 provides a summary of the subjects' characteristics regarding length of time on dialysis and number of treatments per week.

Table 5

Summary of Sample (N=45) Characteristics for Length of Time on Dialysis and Number of Treatments per Week

Variable	n	%	Valid N
Length of time on dialysis:	41		
no response	4	0	
less than 2 years	30	73.2	
2 to 3 years	6	14.6	
over 3 years	5	12.2	
Hemodialysis treatments/week:	43		
no response	2	0	
twice a week	5	11.6	
three times a week	37	86.0	
> three times a week	1	2.3	

Regarding the presence of family support, 44 (97.8%) subjects responded positively, indicating that they felt they had sufficient family support. One subject (2.2%) responded negatively. Forty-four subjects (97.8%) responded to the item that measured type of family support by their indication of what they felt it encompassed. Twenty-seven (60.0%) participants felt family support included emotional, financial, physical, and spiritual components, while nine

(20%) felt that family support encompassed some, but not all of the components. Seven individuals indicated that family support encompassed only one of the components: emotional ($n=4$, 8.1%), spiritual ($n=2$, 4.9%), physical ($n=1$, 2.2%). One (2.2%) individual felt that none of the characteristics were components of family support and one made no response. A summary of the samples' characteristics regarding presence and type of family support can be found in Table 6.

Table 6

Summary of Sample (N=45) Characteristics for Presence
and Type of Family Support

Variable	n	%	Valid N
Presence of family support:			45
yes	44	97.8	
no	1	2.2	
Type of family support:			44
no response	1	0	
emotional only	4	8.1	
financial only	0	0	
physical only	1	2.2	
spiritual only	2	4.9	
some but not all	9	20.0	
all of these	27	60.0	
none of these	1	2.2	

Additional information collected on the demographic data sheet related to presence of concomitant and chronic illnesses. Thirty-seven (82.2%) of the subjects reported having hypertension, while eight (17.8%) denied having that chronic illness. Less than half the group ($n=19$, 42.2%) reported diabetes as a chronic illness they lived with, and 26 (57.8%) indicated they were not diabetic. One third of the group ($n=15$) reported some form of heart disease, with 66.7% ($n=30$) denying a history of heart disease. Other concomitant diseases reported included asthma ($n=1$, 2.2%) and rheumatoid arthritis ($n=2$, 4.4%). A summary of chronic and concomitant illness appears in Table 7.

Table 7

Chronic and Concomitant Illnesses Reported in Sample

Subjects (N=45)

<u>Variable</u>	<u>n</u>	<u>%</u>
<u>Chronic Illnesses:</u>		
hypertension		
yes	37	82.2
no	8	17.8

Table 7 continued on next page

Table 7, cont'dChronic and Concomitant Illnesses Reported in SampleSubjects (N=45)

<u>Variable</u>		<u>n</u>	<u>%</u>
diabetes mellitus			
yes		19	42.2
no		26	57.8
heart disease			
yes		15	33.3
no		30	66.7
Concomitant			
asthma		1	2.2
rheumatoid arthritis		2	4.4

The research assistants completed a Medical Data Form (Appendix A) for each of the subjects they interviewed. Recorded on the Medical Data Form were the most recent laboratory and clinical data available on the medical record. Laboratory parameters included hemoglobin, hematocrit, potassium, phosphorus, blood urea nitrogen, and creatinine. Clinical data included the predialysis weight gain and primary etiology of the patient's renal failure as documented on the medical record. The group means were as

follows: hemoglobin, 9.48; hematocrit, 28.52; potassium, 4.46 mEq/L; phosphorus, 6.24 mEq/L; blood urea nitrogen, 60.05 mg/100 ml; creatinine, 10.10 mg/100 ml; predialysis weight gain, 2.33 kg. Findings related to the group clinical and laboratory data characteristics are presented in Table 8.

Table 8Descriptive Summary of Laboratory and Clinical Data, N=45

Variable	Valid N	Mean	STD	Min	Max
Hemoglobin	45	9.48	1.29	6.70	12.40
Hematocrit	45	28.52	3.92	20.20	37.50
Potassium (mEq/L)	45	4.46	0.81	2.20	6.40
Phosphorus (mEq/L)	45	6.24	1.89	2.80	11.90
Blood Urea					
Nitrogen (mg/100ml)	44	60.05	22.5	20.00	111.00
Creatinine					
(mg/100 ml)	45	10.10	4.08	3.00	25.60
Predialysis					
Wt. Gain (kg)	39	2.33	1.60	0.00	7.10

Differences among means between male and female groups were compared using a two group *t*-test. The mean values for the male group were as follows: hemoglobin, 9.16; hematocrit, 27.64; potassium, 4.70 mEq/L; phosphorus, 6.55 mEq/L; blood urea nitrogen, 58.47 mg/100 ml; creatinine, 11.61 mg/100 ml; predialysis weight gain, 2.66 kg. The mean values for the female group were as follows: hemoglobin, 9.70; hematocrit, 29.10; potassium, 4.31 mEq/L; phosphorus, 6.04 mEq/L; blood urea nitrogen, 61.04 mg/100 ml; creatinine, 9.09 mg/100 ml; predialysis weight gain, 2.11 kg. None of the means were statistically significant at the 0.05 level of significance. Findings related to the comparison of group means for laboratory and clinical data by gender are presented in Table 9.

Also noted on the Medical Data Form were beginning and ending times of the dialysis treatment, beginning and ending times of the data collection process, and researcher initials. Length of treatment time was reported for 28 (62.2%) of the subjects. Dialysis treatment times ranged from a low of 1.5 hours to 4.3 hours, with a mean of 3.2 hours observed. The data collection process referred to the time it took the patient to complete the self-report :

Table 9

Summary of Laboratory and Clinical Data for Male (n=18) and Female (n=27) Subjects

Variable	Mean	STD	Min	Max	T-value	P-Value	Valid N
Hemoglobin:							45
male (n=18)	9.16	1.32	7	11			
female (n=27)	9.70	1.24	8	12	-1.391	0.1715	
Hematocrit:							45
male (n=18)	27.64	4.08	20	34			
female (n=27)	29.10	3.78	21	38	-1.232	0.2247	
Potassium:							45
male (n=18)	4.70	0.96	2	6			
female (n=27)	4.31	0.67	3	6	1.618	0.1131	
Phosphorus:							45
male (n=18)	6.55	2.02	4	12			
female (n=27)	6.04	1.81	3	11	0.884	0.3817	(cont'd) 06

Table 9, cont'd

Summary of Laboratory and Clinical Data for Male (n=18) and Female (n=27) Subjects

Variable	Mean	STD	Min	Max	T-value	P-Value	Valid N
Blood Urea Nitrogen:							44
male (n=17)	58.47	26.46	20	111			
female (n=27)	61.04	20.18	32	108	-0.364	0.7178	
Creatinine:							45
male (n=18)	11.61	5.02	3	26			
female (n=27)	9.09	3.00	3	15	1.918	0.0666	
Predialysis Wt Gain:							39
male (n=16)	2.66	2.66	0	7			
female (n=23)	2.11	1.18	0	5	0.958	0.3484	

P-value was taken from analysis using the two group T-test.

* Indicates statistically significant at the 0.05 level of significance.

instruments and ranged from 15 to 90 minutes with a mean time of 54 minutes ($n=41$, 91.1%).

The research assistants recorded the etiology of the renal failure documented on the medical record, if available. Diagnoses included hypertension, diabetes mellitus, drug and alcohol abuse, AIDS nephropathy, glomerulonephritis, lupus, nephrosclerosis, and medication induced. Chart documented diagnoses were unavailable for 7 of the patients and six records indicated more than one cause. Table 10 summarizes the frequency of medically documented and self-reported diagnoses as cause of renal failure.

Table 10

Reported frequency of renal failure Etiology in Subjects
(N=45)

<u>Variable</u>	<u>frequency*</u>	
Etiology:	Self-report	Chart
no response/not available	7	7
did not know	3	--
hypertension	25	24
<u>diabetes</u>	7	12

Table 10 continued next page

Table 10, cont'dReported frequency of renal failure Etiology in Subjects(N=45)

<u>Variable</u>	<u>frequency*</u>	
AIDS/ AIDS nephropathy	1	1
drugs (i.e., cocaine)	1	2
drinking (i.e., alcohol)	1	1
glomerulonephritis	0	1
nephrosclerosis	0	1
kidney disease	1	0
lupus	0	1
hepatitis	1	0
pregnancy	1	0
medicine	1	1
weight	1	0
diet	1	0

* Some individuals/charts reported multiple causes.

Lastly, there was space available for the research assistants to make any pertinent comments. Only three comments were made. One indicated that the subject was four weeks pregnant. Another researcher commented, in response to the patient's comment that she had lost a lot of weight,

indicated that the patient now weighed 525 pounds. The last comment referred to the difficulty one researcher had in getting the patient not to use the forms differently than instructed. The patient wanted and did rate both the acute unit and the chronic unit she normally attended on the CARE/SAT. However, because the patient was currently an inpatient, the marks indicated for the acute unit were used.

Findings

In this section, a summary of the data obtained in the study is presented for each of the five instruments and six hypotheses. The statistics were performed by computer method utilizing the SAS[®] version 6.08. Instrument total scores were used unless otherwise noted.

Instruments

Five instruments and the demographic and medical data forms were used to test the six study hypotheses. They included the Hemodialysis Stressor Scale (HSS), the Simmons Hemodialysis Stressor Scale (SHSS), the Caring Satisfaction Scale (CARE/SAT), the CES-Depression Scale (CES-D), and the Quality of Life Index (QLI). Each of the instruments is discussed in the following sections.

Hemodialysis Stressor Scale

The Hemodialysis Stressor Scale is a 29-item, five-point Likert scale which assessed three domains of treatment-related stress: psychobiologic, psychosocial, and dependency/restrictive. Numbers of items within each of the domains ranged from five to 14. Each item was scored from one to five, with five indicating a great deal of stress and one indicating no stress. Scores for all items were summed to obtain a single score, the higher the score, the higher the treatment-related stress. The possible range for summed scores was 29 to 145 with a group mean of 66.89 ± 23.4 . The group range was 34 to 119. The mean score for male subjects was 67.28, while women tended to report a slightly lower stress with a mean of 66.63 (see Table 11). The Cronbach alpha coefficient for the total HSS was 0.913. For the three subscales, Cronbach alpha was 0.840 for the first subscale, psychobiologic; 0.849 for the second, psychosocial; and 0.702 for the dependency/ restrictive scale.

Table 11

Summary of differences between means for male (n=18) and females (n=27) for the HSS, SHSS, CES-D, CARE/SAT, and QLI

Variable	Mean	STD	Min Max	T-Value	P-value
HSS					
male	67.28	23.58	34 / 109		
female	66.63	23.65	34 / 119	0.090	0.9286
SHSS					
male	96.56	19.4	67 / 132		
female	93.04	23.9	59 / 155	0.520	0.6058
CARE/SAT					
male	192.49	35.3	115/244		
female	190.24	49.7	15 / 259	0.166	0.8689
CES-D					
male	17.50	8.12	8 / 35		
female	20.96	10.3	2 / 49	-1.201	0.2380
QLI					
male	20.30	5.36	11 / 28		
female	22.48	3.52	16 / 29	-1.655	0.1052

Based on subject responses, the ten most troublesome treatment-related stressors that were indicated on the HSS

included: limitation of physical activity, length of treatment, fatigue, decrease in social life, uncertainty concerning future, limitation of food, muscle cramps, sleep disturbances, limitation of fluid, and changes in bodily appearance. Table 12 provides a summary of the ten highest ranked stressors selected from the HSS with the rank and

Table 12

Ten Highest Ranked Treatment-related Stressors as Measured by the Hemodialysis Stressor Scale (HSS) of Male (n=18) and Female (n=27) Subjects

Stressor	Rank	Mean	Valid N
limitation of physical activity	1	2.98	45
length of treatment	2	2.82	44
fatigue	3	2.81	45
decrease in social life	4	2.80	42
uncertainty concerning future	5	2.71	45
limitation of food	6	2.60	45
muscle cramps	7.5	2.57	44
sleep disturbances	7.5	2.57	44
limitation of fluid	9.5	2.56	45
<u>change in bodily appearance</u>	9.5	2.56	45

item means noted. Items determined to produce the least amount of stress for the group were: decreased ability to have children, reversal of family role with spouse, fear of being alone, and limited to styles of clothing.

Simmons Hemodialysis Stressor Scale

The Simmons Hemodialysis Scale is a 50-item, self report, 4-point Likert scale which assesses treatment-related stress. Each item was scored from one to four, with four indicating a great deal of stress and one indicating no stress. Scores for all items were summed to obtain a single score, the higher the score, the higher the treatment-related stress. The possible range for summed scores was 50 to 200. The group range was 59 to 155 with a group mean score of 94.44 ± 22.1 . The mean score for male subjects ($n=18$) was 96.56, while women ($n=27$) tended to report a slightly lower stress with a mean of 93.04 (see Table 11). The Cronbach alpha coefficient for the total SHSS was 0.919.

Based on subject responses, the ten most troublesome treatment-related stressors that were indicated on the SHSS included: thirst, finances, low energy level, feeling ill, having a chronic illness like renal failure, feeling tired, inability to travel freely, fluid restriction, dependence on

others, and constipation. Table 13 provides a summary of the ten highest ranked stressors selected from the SHSS with the rank and item means noted. Items determined to produce the least amount of stress for the group were: resentment/anger towards staff or family, lack of staff, family or spousal support, and decreased ability to have children.

Table 13

Ten Highest Ranked Treatment-related Stressors as Measured by the Simmons Hemodialysis Stressor Scale (SHSS) of Male (n=18) and Female (n=27) Subjects

Stressor	Rank	Mean	Valid N
thirst	1	2.73	44
finances	2.5	2.53	45
low energy level	2.5	2.53	45
feeling ill	4	2.47	45
having a chronic illness	5	2.44	45
feeling tired	6	2.36	45
inability to travel freely	7	2.32	44
fluid restriction	8.5	2.31	45
dependence on others	8.5	2.31	45
<u>constipation</u>	10	2.27	45

In order to estimate concurrent validity of the SHSS instrument, a Pearson Correlation was done to measure how well the SHSS correlated with the HSS, an instrument that had demonstrated reliability. A comparison of treatment-related stress as measured by the HSS to treatment-related stress as measured by the SHSS resulted in an r value of 0.664 and a statistically significant p value of 0.0001. There is a statistically significant correlation between the HSS and the SHSS although at a level less than .70.

Larson's Caring/Satisfaction Scale

The Caring Satisfaction Scale (CARE/SAT) is a 29-item, visual analog scale which assessed patient satisfaction with nursing care in three domains: assistive, benign neglect, and enabling. Each item was scored by placing an "X" on the 100-centimeter line adjacent to the statement being measured to indicate the amount of agreement or disagreement the subject experienced regarding the item. Each item response could range from 0=strongly disagree to 10=strongly agree. Negatively worded items were reverse scored. Scores for all items were summed to obtain a single score, the higher the score, the higher the satisfaction with nursing care. The possible range for summed scores was 0 to 290. The group range was 15.20 to 259.80 with a mean score of 191.14 \pm 44.

The mean score for male subjects ($n=18$) was 192.49, while women tended to report a slightly lower satisfaction with nursing care with a mean of 190.24 (see Table 11). The Cronbach alpha coefficient for the total CARE/SAT was 0.898. For the three subscales, Cronbach alpha was 0.916 for the first subscale, assistive; 0.777 for the second, benign neglect; and 0.599 for the enabling scale.

CES-Depression Scale

The CES-Depression Scale (CES-D) is a 20-item, self report, 4-point Likert scale which assesses presence of depression. Each item was scored from zero to three, with three indicating that the patient experienced an item most of the time during the past week and zero indicating the patient experienced the item few, if any, time during the week. Scores for all items were summed to obtain a single score, the higher the score, the more depressed the individual. Positively worded items were reversed scored. The possible range for summed scores was 0 to 60. The group range was two to 49 with a group mean score of 19.48 ± 9.55 . The mean score for male subjects ($n=18$) was 17.50, while women ($n=27$) tended to report somewhat higher depression scores with a mean of 20.96 (see Table 11). The Cronbach alpha coefficient for the total CES-D was 0.825.

Ferran's Quality of Life Index

The Quality of Life Index is a two-part, 70-item, six-point Likert scale which assessed four domains of quality of life in the patient on dialysis. The four subscales were health and functioning, socioeconomic, psychological/spiritual, and family. Each item was scored from one to six, with six indicating a great deal of satisfaction (part one) or importance (part two). A score of one indicated very dissatisfied (part one) or very unimportant (part two). Scores for all items on part one (satisfaction) were recoded and weighted by the corresponding importance score in accord with author instruction. The calculations produced a single total score, the QLI score. The higher the score, the higher the subject's perceived quality of life. The possible range for summed scores was 0 to 30. The group range was 11.48 to 29.12. The group mean was 21.61 ± 4.43 . The mean score for male subjects ($n=18$) was 20.30, while women ($n=27$) tended to report a slightly higher quality of life with a mean of 22.48 (see Table 11). The Cronbach alpha coefficient for the total QLI was 0.923. For the four subscales, Cronbach alpha was 0.854 for the first subscale, health and functioning; 0.719 for the second, socioeconomic;

0.904 for the third, psychological/spiritual; and 0.749 for the family scale.

Some participants did not answer all the items for every instrument, however, no patterns were noted in responses except for six items on parts one and two of the QLI. For both parts, items 5, 9, 11, 12, 22, and 23 had six or more subjects who gave no response. The six items referred to satisfaction with or importance of transplantation, ability to have children, relationship with spouse or significant other, sex life, job if employed, and lastly, not having a job. Table 14 summarizes the items which had a high "no response" rate.

Table 14

Summary of items on the QLI with frequent 'no response'

Selection by Subjects (N=45)

Item number	Subscales	
	Satisfaction	Importance
	n (%)	n (%)
5. Transplantation	10(22.2)	7(15.6)
9. Children	9(20.0)	9(20.0)
11. Relationship w/spouse	7(15.6)	7(15.6)
12. Sex life	7(15.6)	6(13.3) cont'd

Table 14, cont'dSummary of items on the OLI with frequent 'no response'Selection by Subjects (N=45)

Item number	Subscales	
	Satisfaction	Importance
	n (%)	n (%)
22. Job, if employed	21 (46.7)	21 (46.7)
23. Not having a job	8 (17.8)	9 (20.0)

Reliability of the Instruments

Reliability coefficients for internal consistency were calculated for each instrument and its respective subscales. Cronbach alpha coefficients were estimated and are summarized for each of the instruments in Table 15.

The HSS had a reliability coefficient of 0.913. The psychobiologic, psychosocial, and dependency/restrictive scales had Cronbach alpha coefficients of 0.840, 0.849, and 0.702, respectively. The SHSS had a reliability coefficient of 0.919. Reliability coefficients of 0.70 are considered acceptable for beginning stages of research and basic research (Nunnally, 1978). Table 15 provides a summary of the reliability information for the HSS and the SHSS.

Table 15

Reliability Estimates for the HSS, SHSS, CES-D, CARE/SAT
and QLI Instruments and Subscales (N=45)

<u>Instrument</u>	<u>Cronbach's alpha</u>
Hemodialysis Stressor Scale (HSS)	0.913
Psychobiologic	0.840
Psychosocial	0.849
Dependency/Restrictive	0.702
Simmons' Hemodialysis Stressor Scale	0.919
CES-Depression Scale (CES-D)	0.825
Larson's Caring/Satisfaction Scale (CARE/SAT)	0.898
Assistive	0.916
Benign Neglect	0.777
Enabling	0.599
Quality of Life (QLI)	0.923
Health and Functioning	0.854
Socioeconomic	0.719
Psychological/spiritual	0.904
Family	0.749

*Indicates statistically significant at the 0.05 level of significance.

The CARE/SAT had a reliability coefficient of 0.898. Each of the subscales, assistive, benign neglect, and enabling, had the following alpha coefficients calculated: 0.916, 0.777, and 0.599. The reliability coefficient for the CES-D was 0.825. Reliability coefficients for the CARE/SAT, its three subscales, and the CES-D are summarized in Table 15.

Reliability coefficients for the QLI and its respective subscales generated the following alpha coefficients. Reliability for the total instrument was 0.923. Cronbach alpha values for the four scales, health and functioning, socioeconomic, psychological/spiritual, and family, produced coefficients ranging from 0.719 to 0.904. Reliability coefficients for the QLI and the four subscales are outlined in Table 15. The measures for treatment-related stress, as measured by the HSS and SHSS; satisfaction with nursing care, as measured by the CARE/SAT; depression, as measured by the CES-D; and quality of life, as measured by the QLI were shown to demonstrate sufficient internal consistency such that H_1 through H_6 could be tested.

Hypotheses

In this section, the findings for each of the six hypotheses will be discussed.

Hypothesis One

The first hypothesis for the study was: Treatment-related stress, satisfaction with nursing care, and depression are predictive of quality of life in chronic hemodialysis patients. As a first step in the analysis of this hypothesis, Pearson coefficients were calculated to test for the presence of a relationship for the dependent and criterion variables. The level of significance was at the alpha=0.05 level of significance for all calculations. Those data are summarized in Table 16.

Table 16Summary of Pearson Correlation Coefficients for QLI
with HSS, SHSS, CARE/SAT, and CES-D

<u>Variable</u>	<u>r</u>	<u>p*</u>
QLI with HSS	-0.318	0.033*
QLI with SHSS	-0.410	0.005*

Table 16 continued on next page

Table 16, cont'd

Summary of Pearson Correlation Coefficients for QLI
with HSS, SHSS, CARE/SAT, and CES-D

<u>Variable</u>	<u>r</u>	<u>p*</u>
QLI with CARE/SAT	-0.129	0.400
<u>QLI with CES-D</u>	<u>-0.369</u>	<u>0.013*</u>

*Indicates statistically significant at the 0.05 level of significance.

Statistical analysis produced three correlation coefficients which were statistically significant, suggesting a relationship between quality of life and treatment-related stress as well as depression: HSS with QLI, r-value of -0.318 and a p-value of 0.033; SHSS with QLI, r-value of -0.410 and a p-value of 0.005; CES-D with QLI, r-value of -0.369 and a p-value of 0.013. Satisfaction with nursing care tended not to show a significant relationship with the quality of life measure, therefore, one might conclude for this sample of chronic hemodialysis patients, that satisfaction with nursing care was not related to the individual's perceived quality of life. As treatment-related stress or depression increased for the sample, quality of life scores decreased, an inverse

relationship one might expect. Table 16 summarizes the Pearson coefficients and companion p-values for each of the independent variables.

Following the exploration of the relationships of the variables, hypothesis one was submitted to statistical analysis using simple multiple regression. The data did not support hypothesis one (treatment-related stress, satisfaction with nursing care, and depression are predictive of quality of life in chronic hemodialysis patients), therefore, it was rejected. Although the Pearson correlations suggested that treatment-related stress and depression were related to quality of life, the data did not support a predictive relationship. A summary of the regression analysis is presented in Table 17.

Because the Pearson correlations were moderately strong, the researcher elected to do a stepwise multiple regression. The test was conducted post hoc and is considered "data snooping" (Kerlinger, 1986; Tabachnick & Fidell, 1983). Although the data must be interpreted with caution, data snooping can aid in ferreting out "insights

Table 17

Summary of Regression Analysis for Variables Predicting
Quality of Life in Chronic Hemodialysis Patients (N=45)

<u>Variable</u>	<u>B</u>	<u>SE B</u>	<u>Beta</u>	<u>T</u>	<u>Sig T</u>
SHSS	-0.05	0.04	-0.26	-1.31	.1970
HSS	-0.01	0.04	-0.07	-0.35	.7298
CES-D	-0.11	0.09	-0.20	-1.20	.2363
<u>CARE/SAT</u>	<u>-0.01</u>	<u>0.01</u>	<u>-0.10</u>	<u>-0.70</u>	<u>.4893</u>

* Indicates statistically significant at the 0.05 level of significance. $R^2 = .21362$ Adjusted $R^2 = .13498$

and clues" imbedded in the data (Kerlinger, 1986). The results of the stepwise multiple regression analysis (see Table 18) suggests that treatment-related stress as measured by the SHSS is predictive of quality of life in this sample (N=45) of chronic renal failure patients, accounting for 14.6% of the variance (t=.0054). However, the data must be interpreted cautiously as it does not account for the probable multicollinearity occurring between the HSS and SHSS. In addition, one must bear in mind the fact that the sample size was small.

Table 18Summary of Stepwise Regression Analysis for VariablesPredicting Quality of Life in Chronic HemodialysisPatients (N=45)

<u>Variable</u>	<u>B</u>	<u>SE B</u>	<u>Beta</u>	<u>T</u>	<u>Sig T</u>
SHSS	-0.08	0.03	-0.41	-2.93	.0054*

Variables that did not enter into the equation:

HSS

CES-D

CARE/SAT

*Indicates statistically significant at the 0.05 level of significance. $R^2 = .16630$ Adjusted $R^2 = .14691$

Hypothesis Two

The second hypothesis for the study was: Quality of life for the adult chronic hemodialysis patient is not related to demographic variables as: age, gender, race, marital status, employment status, socioeconomic status, educational background, length of time on chronic hemodialysis, or living arrangements. Hypothesis two was accepted. Each of the relationships was tested using Pearson's Correlation, with the statistical analyses

resulting in nine correlational coefficients, none of which were statistically significant. Table 19 summarizes the Pearson Correlation Coefficient for each relationship in

Table 19

Summary of Pearson Correlation Coefficient Determination
for the QLI Score as Compared to Selected Subject (N=45)

Demographic Data

<u>Correlation</u>	<u>Pearson r</u>	<u>p-value</u>
QLI with age	-0.056	0.715
QLI with gender	0.245	0.105
QLI with LOTOD	0.072	0.640
QLI with marital	0.004	0.977
QLI with income	-0.111	0.473
QLI with education	-0.082	0.591
QLI with employment	-0.095	0.536
<u>QLI with living arrangement</u>	<u>-0.105</u>	<u>0.499</u>

hypothesis two. Hypothesis two (quality of life for the adult chronic hemodialysis patient is not related to demographic variables as: age, gender, race, marital status, employment status, socioeconomic status, educational

background, length of time on chronic hemodialysis, or living arrangements) was accepted as there was no significant relationship between QLI and any demographic variables.

Hypothesis Three

The third hypothesis for the study was: Clinical laboratory indicators such as serum hemoglobin (Hgb), serum potassium (K^+), hematocrit Hct), serum phosphorus (Phos), blood urea nitrogen (BUN), and serum creatinine (Creat)-- all common measures of dialysis effectiveness (Bjorvell & Hylander, 1989) are predictive of depression and decreased QoL in the patient on chronic hemodialysis. Hypothesis three was rejected. Selected clinical laboratory indicators were not related to quality of life or depression, nor were they predictive of those two variables. Pearson Correlation and simple multiple regression statistical analysis was conducted and revealed no significant relationship between this sample's clinical laboratory indicators and their mean depression or quality of life scores. Tables 20 and 21 summarize the data for hypothesis three.

Table 20

Summary of Regression Analysis for Variables Predicting
Quality of Life in Chronic Hemodialysis Patients (N=45)

<u>Variable</u>	<u>B</u>	<u>SE B</u>	<u>Beta</u>	<u>T</u>	<u>Sig T</u>
BUN	.02	.05	.09	.38	.7082
CREAT	-.03	.24	-.03	-.12	.9027
HCT	-.01	.76	-.01	-.02	.9884
HGB	.15	2.38	.04	.06	.9498
K ⁺	1.19	1.19	.22	1.00	.3222
PHOSP	-.04	.53	-.02	-.08	.9395
<u>PREDIAL</u>	<u>.03</u>	<u>.64</u>	<u>.01</u>	<u>.05</u>	<u>.9576</u>

*Indicates statistically significant at the 0.05 level of significance. $R^2 = .05545$ Adjusted $R^2 = -.12325$

Table 21

Summary of Regression Analysis for Variables Predicting
Depression in Chronic Hemodialysis Patients (N=45)

Variable	B	SE B	Beta	T	Sig T
BUN	.030	.09	.09	.39	.6967
CREAT	.44	.42	.22	1.04	.3041
HCT	1.66	1.32	.82	1.25	.2176
HGB	-5.10	4.15	-.82	-1.23	.2274
K ⁺	-1.12	2.07	-.11	-.54	.5917
PHOSP	-1.30	.93	-.31	-1.40	.1695
<u>PREDIAL</u>	<u>-.48</u>	<u>1.12</u>	<u>-.09</u>	<u>-.43</u>	<u>.6680</u>

*Indicates statistically significant at the 0.05 level of significance. $R^2=.11286$ Adjusted $R^2=-.05497$

Hypothesis Four

The fourth hypothesis for the study was: Treatment-related stress, depression, and satisfaction with nursing care are not related. Pearson coefficients were calculated to test the presence of a relationship among the variables in H₄. The hypothesis was partially rejected as statistical analysis demonstrated significant correlation between treatment-related stress and depression, however, no

relationship was demonstrated for satisfaction with nursing care. Table 22 summarizes the data for Hypothesis 4.

Table 22

Summary of Pearson Correlation Coefficients for OLI
with HSS, SHSS, CARE/SAT, and CES-D

<u>Variable</u>	HSS	SHSS	CARE/SAT	CES-D
HSS	---	0.664 ^a	-0.135	0.351 ^b
SHSS		---	0.073	0.448 ^c
CARE/SAT			---	0.083

^ap=0.0001 level of significance.

^bp=0.0181 level of significance.

^cp=0.0020 level of significance.

A comparison of treatment-related stress (as measured by the HSS) to satisfaction with nursing care (as measured by the CARE/SAT) resulted in an r value of -0.135 and a p value of 0.378, which did not support a statistically significant relationship. In addition, a comparison of treatment-related stress (as measured by the SHSS) to satisfaction with nursing care (as measured by the CARE/SAT) yielded an r value of 0.073 and a p value of 0.632 which

indicated there was no statistically significant relationship. The level of significance was set at .05.

A comparison of treatment-related stress (as measured by the HSS) to depression (as measured by the CES-D) resulted in an r value of 0.351 and a statistically significant p value of 0.0181. The level of significance was set at .05 level of significance. A comparison of treatment-related stress (as measured by the SHSS) to depression (as measured by the CES-D) resulted in an r value of 0.448 and a p value of 0.0020, also indicating a statistically significant relationship.

Furthermore, a comparison of satisfaction with nursing care (as measured by the CARE/SAT) to depression (as measured by the CES-D) resulted in an r value of 0.083 and a p value of 0.588 which indicated that there was no statistically significant relationship between satisfaction with nursing care and the patient's depressive state.

These data suggest there is a significant relationship between treatment-related stress and depression for this sample of chronic renal failure patients ($N=45$). The data also suggest there is no significant relationship between satisfaction with nursing care and treatment-related stress or depression. Therefore, hypothesis four (treatment-

related stress, depression, and satisfaction with nursing care are not related) was rejected for treatment-related stress and depression, but accepted for satisfaction with nursing care and treatment-related stress or depression.

Table 22 summarizes the Pearson coefficients and p-values for each of the hypothesized relationships.

Hypothesis Five

The fifth hypothesis for the study was: Patients who consistently experience predialysis weight gains of less than two kilograms will report lower stress and depression scores than those who experience an average predialysis weight gain greater than two kilograms. Hypothesis five was rejected. Statistical analysis using a t -Test for two independent groups demonstrated that there is no difference in depression scores of those individuals who report a predialysis weight gain greater than or equal to two kilograms in comparison to those who report a predialysis weight gain of less than two kilograms. A comparison of the depression as measured by the CES-D resulted in an t -value of 1.431 and a p value of 0.1596, which is not statistically significant.

Mean treatment-related stress scores for each group were analyzed with a two-tailed t -test for independent

groups. The level of significance was set at the .05 level of significance. A comparison of the treatment-related stress as measured by the HSS resulted in an t -value of 0.665 and a p value of 0.5094. There was not a statistically significant difference detected between the two groups.

In like manner, mean treatment-related stress scores, as measured by the SHSS, for each group were analyzed with a two-tailed t -test for independent groups. The level of significance was set at the .05 level of significance. A comparison of the treatment-related stress scores demonstrated a t -value of 0.526 and a p value of 0.6016, a value that is not statistically significant and suggests there is not a difference between the two groups. Therefore, hypothesis five (patients who consistently experience predialysis weight gains of less than two kilograms will report lower stress and depression scores than those who experience an average predialysis weight gain greater than two kilograms) was rejected as there was not a statistically significant difference detected between the two groups in relation to predialysis weights and depression

predialysis weight gain did not significantly influence depression in this sample, as measured by the CES-D, or treatment-related stress, as measured by the HSS and SHSS. Data related to hypothesis five are summarized in Table 23.

Table 23

Summary of Depression and Treatment-related Stress Scores
for Subjects with Weight Gains >2 kg Compared to Those
with Weight Gains <2 kg

Variable	n	Mean	STD	t-value	p-value
CES-D					
<2 kg	22	21.64	10.14		
≥2 kg	23	17.61	8.71	1.431	0.1596
HSS					
<2 kg	22	69.27	23.84		
≥2 kg	23	64.61	23.18	0.665	0.5094
SHSS					
<2 kg	22	96.23	22.74		
≥2 kg	23	92.74	21.75	0.526	0.6016

*Indicates statistically significant at the 0.05 level of significance.

Hypothesis Six

The sixth hypothesis for the study was: Treatment-related stress, satisfaction with nursing care, depression

and the demographic variables are not related. Hypothesis six was accepted with the exception of depression with income. Statistical analysis of each of the independent variables with age, gender, length of time on dialysis, education, living arrangement, employment, and marital status did not reveal statistically significant relationships among any of the demographic data. Pearson Coefficients ranged from $r=-0.004$, $p=0.991$ when HSS mean total score was compared to education to $r=0.276$, $p=0.066$ when the CARE/SAT was correlated with education. The one exception was when depression mean total score was correlated with income, there was a statistically significant positive relationship with income, $r=0.351$, $p=0.020$. Level of significance was set at the .05 level. Based on that statistical analysis, for this sample, as income levels increased, individuals were more likely to be depressed. Therefore, hypothesis six (treatment-related stress, satisfaction with nursing care, depression and the demographic variables are not related) was accepted for all but one relationship, namely depression and income. Data for hypothesis six are summarized in Tables 24, 25, 26, and 27.

Table 24Summary of Pearson Correlation Coefficient Determinationfor HSS Scores as Compared with Selected Subject (N=45)Demographic Data

<u>Correlation</u>	<u>Pearson r</u>	<u>p-value</u>
HSS with age	-0.113	0.461
HSS with gender	0.030	0.842
HSS with LOTOD	0.132	0.392
HSS with marital	-0.222	0.147
HSS with income	0.079	0.612
HSS with education	-0.004	0.981
HSS with employment	-0.090	0.556
<u>HSS with living arrangement</u>	<u>-0.036</u>	<u>0.817</u>

*Indicates statistically significant at the 0.05 level of significance.

Table 25

Summary of Pearson Correlation Coefficient Determination
for SHSS Scores as Compared with Selected Subject (N=45)
Demographic Data

<u>Correlation</u>	<u>Pearson r</u>	<u>p-value</u>
SHSS with age	-0.248	0.100
SHSS with gender	-0.079	0.606
SHSS with LOTOD	0.158	0.307
SHSS with marital	-0.191	0.214
SHSS with income	0.257	0.092
SHSS with education	-0.016	0.916
SHSS with employment	-0.080	0.604
<u>SHSS with living arrangement</u>	<u>-0.254</u>	<u>0.097</u>

*Indicates statistically significant at the 0.05 level of significance.

Table 26

Summary of Pearson Correlation Coefficient Determination
for CARE/SAT Scores as Compared with Selected subject
(N=45) Demographic Data

<u>Correlation</u>	<u>Pearson r</u>	<u>p-value</u>
CARE/SAT with age	-0.118	0.439
CARE/SAT with gender	-0.025	0.869
CARE/SAT with LOTOD	-0.199	0.196
CARE/SAT with marital	-0.054	0.726
CARE/SAT with income	-0.170	0.271
CARE/SAT with education	0.276	0.066
CARE/SAT with employment	0.064	0.675
<u>CARE/SAT w/living arrangement</u>	<u>-0.009</u>	<u>0.952</u>

*Indicates statistically significant at the 0.05 level of significance.

Table 27

Summary of Pearson Correlation Coefficient Determination
for CES-D Scores as Compared with Selected Subject
(N=45) Demographic Data

<u>Correlation</u>	<u>Pearson r</u>	<u>p-value</u>
CES-D with age	-0.174	0.254
CES-D with gender	0.180	0.238
CES-D with LOTOD	-0.125	0.420
CES-D with marital	-0.073	0.638
CES-D with income	0.351	0.020*
CES-D with education	0.028	0.853
CES-D with employment	-0.238	0.116
<u>CES-D with living arrangement</u>	<u>-0.064</u>	<u>0.678</u>

*Indicates statistically significant at the 0.05 level of significance.

Additional Findings

Additional analysis was conducted in order to examine the relationship of each of the four QLI subscales to treatment-related stress, satisfaction with nursing care, and depression. For subscale 1, health and functioning, treatment-related stress was significantly correlated. The

correlation coefficient for the HSS was $r=-0.350$, $p=0.018$.

For the SHSS, the coefficient was $r=-0.395$, $p=0.007$. These correlations suggest that as stress related to health and/or the ability to function increase, quality of life in this sample decreases. Depression nor satisfaction with nursing care correlated significantly with health and functioning, although the coefficient for depression, $r=-0.275$, $p=0.067$, approached significance. A larger sample might increase the strength of the relationship.

The SHSS correlated significantly with the second or socioeconomic subscale of the QLI, with a $r=-0.403$, $p=0.006$. None of the other variables reached statistically significant p -values, however, both the HSS and the CES-D had $p=0.051$ and $p=0.056$, respectively. In reference to subscale 2, it was observed that there was a statistically significant difference between males (18.80 ± 5.53) and females (22.12 ± 3.69) ($t=-2.415$, $p=0.0201$).

On the psychological/spiritual subscale, statistical analysis revealed for both the CES-D and the SHSS statistically significant Pearson coefficients. For the CES-D, $r=-0.427$, $p=0.004$. For the SHSS, $r=-0.312$ with a statistically significant $p=0.037$. Both relationships are inverse, therefore, the data suggests that as depression or

treatment-related stress increase, quality of life for the renal failure patient decreases. In addition, there was a statistically significant difference between patients at the freestanding center (25.11 ± 5.20) as compared to the acute unit (21.37 ± 7.03) in relation to the psychological/spiritual subscale ($t=2.046$, $p=0.0469$). And although not statistically significant, there was a slight difference observed in the predialysis weight gain <2 kg group (21.92 ± 6.85 , $t=-1.954$, $p=0.0573$) as compared to the predialysis weight gain ≥ 2 kg group (25.39 ± 4.98).

For the fourth and final subscale of the QLI, family, none of the variables achieved statistically significant Pearson coefficients. The CES-D did approach a statistically significant p -value: $r=-0.285$, $p=0.61$.

Statistical analysis using a two-tailed t -Test for independent groups revealed a statistically significant difference between the HSS mean scores for the depressed (73.71 ± 24.63) and not depressed (56.87 ± 16.86 , $t=-2.363$, $p=0.230$) groups.

Space was provided on each of the treatment-related stress measures to encourage subjects to add additional items they considered to be stressful and rank them accordingly. Eight additional stressors were added to the

HSS and four to the SHSS. Six patients added the eight comments to the HSS and ranked them as indicated in parenthesis (): not having the right sized-equipment, i.e., blood pressure cuff (5), psychological pressure of a chronic illness (5), a transplant (5), rejection of a transplant (5), SOB (2), infection (2), arm access (5), and changing of clinics for treatments (5). Only three patients noted additional stressors on the SHSS. Those included: going below dry weight (4), lack of eyesight (4), my mind wanders off (4), lose my concentration (4). A score of five on the HSS indicated a great deal of stress while a score of four on the SHSS had that designation. Additional comments written by the subjects were few, however, one female subject wrote several comments regarding her physician and her dissatisfaction with the care he provided in reference to item 41 on the SHSS. In addition to the comments made regarding item 41 (lack of staff support), this same individual made comments relating to items 24 (appearance), 27 (loss of control, 38 (difficulty in obtaining donor kidney), 43 (lack of support from spouse or significant other), and 50 (constipation). Her comments were as follows: "I circle[d] number 4 to[o], for the reason is when I am sick or just in pain." "I did have loss of

control when they (nurses) gave me too many drugs." "I don't want no kidney--especially no one elses." "Husband left cause of [my] disease." "I used to be all the time." On part two of the Quality of Life Index, another woman wrote "I have learned that your best friend is the man or woman who stares back at you, (smile) cause trust me, they are looking."

Summary

This chapter presented the statistical analysis of the data generated from this study of predictors of quality of life in a sample of 45 chronic hemodialysis patients. The sample was described and the findings for the instruments, hypotheses, and additional findings were discussed in a narrative and table format.

CHAPTER V

SUMMARY OF THE STUDY

This study was a descriptive, correlational, predictive study designed to answer the questions: What is the relationship between treatment-related stress, satisfaction with nursing care, and depression in the adult patient on chronic hemodialysis? What is the effect of treatment-related stress, satisfaction with nursing care, and depression on the quality of life of chronic hemodialysis patients? A summary of the study is presented in this chapter. In addition, a discussion of the findings and conclusions and implications is included. Recommendations for further study are given.

Summary

This study was a descriptive, correlational, predictive study design. It was designed to investigate the relationships between treatment-related stress, satisfaction with nursing care, and depression in the chronic hemodialysis patient and determine which, if any, of those variables were predictive of quality of life. Demographic variables and selected clinical indicators were also

assessed for their ability to predict quality of life in the chronic hemodialysis patient.

The nonprobability convenience sample of 45 adult end stage renal disease patients on chronic hemodialysis included 18 males and 27 females, most of whom were Black, low income, with a high school or less educational background. Most of the subjects had a primary diagnosis of hypertension or diabetes as the cause of their renal failure. Subjects entered the study while receiving chronic hemodialysis at a freestanding chronic center or while they were admitted to a 500-bed teaching hospital. Both facilities were located in a large southeastern U. S. city.

Instruments

All of the instruments were self-report and included two measures of treatment-related stress. The first was the Hemodialysis Stressor Scale, a 29-item, five-point Likert scale. The second measure, the Simmons Hemodialysis Stressor Scale (SHSS), was a 50-item, four-point Likert scale developed by the researcher. Larson's Caring Satisfaction Scale (CARE/SAT), a 29-item, visual analog was used to assess patient's level of satisfaction with nursing

care. The CES-Depression Scale (CES-D) was a 20-item, four-point Likert Scale used to estimate level of depression. Lastly, the Ferran's Quality of Life Index-Dialysis Version was used to assess perceived quality of life for chronic hemodialysis patients. Each of the instruments demonstrated sufficient total instrument internal reliability of .80 or above for the study. A researcher developed demographic data questionnaire and a medical data form were also used.

Data collection took place at the patient's bed- or chairside. One of seven registered nurses approached the patient regarding participation in the study, obtained consent, and administered the tests. Pencils and clipboards were provided as needed.

Hypotheses

Six hypotheses were tested. The first hypothesis was rejected for the variables assumed to be predictive of quality of life, i.e., treatment-related stress, depression, and satisfaction with nursing care. Pearson correlation, however, did reveal significant relationships between QoL, treatment-related stress (HSS and SHSS) and depression. There was no significant relationship between quality of

life and satisfaction with nursing care.

The second hypothesis was accepted as no significant relationships were found to be demonstrated between quality of life and the demographic variables. Hypothesis three was not accepted as statistical analysis did not reveal any significant predictive relationships between selected clinical laboratory indicators and quality of life or depression.

Hypothesis four was partially rejected as statistical analysis demonstrated a statistically significant relationship between treatment-related stress and depression, however, no relationship was demonstrated for satisfaction with nursing care. Hypothesis five was rejected as there was no statistically significant difference in depression scores detected between subjects whose predialysis weight gain was greater than or equal to two kg as compared to those whose predialysis weight gain was less than two kilograms.

Hypothesis six was accepted overall, however, one demographic variable, income, did correlate with depression. All other demographic variables failed to demonstrate a

significant relationship with treatment-related stress, satisfaction with nursing care, or depression.

Additional Findings

Additional analysis was conducted in order to determine what, if any, relationships existed between the QLI subscales and treatment-related stress, satisfaction with nursing care, or depression. The HSS and the SHSS demonstrated statistically significant correlations with the QLI health and functioning subscale. On the socioeconomic subscale, only the SHSS correlated significantly with the scale. It was also noted that there was a significant difference between means for males and female.

Discussion

The sample in this study was ethnically different than the sample described in earlier studies of quality of life in chronic hemodialysis patients (Ferrans & Powers, 1985a; Ferrans & Powers, 1992) where more Caucasian and Hispanic patients were part of the samples. In terms of the most common cause of renal failure, mean age, income, and educational level, the study sample did not appear to differ to a great degree from the samples in previous studies.

This study supported previous findings suggesting that

end stage renal disease patients on chronic hemodialysis perceive themselves to have a sufficient quality of life. Ferrans and Powers (1993) reported that in a sample of 349 hemodialysis patients, overall group mean for the QLI was 20.70 ± 4.77 (range 7.3-29.8). This was only slightly less than that of a group of healthy individuals ($N=88$) whose mean score was 21.90. For this study, the group mean was 21.61 ± 4.43 . In this study, males scored more closely to the mean for hemodialysis patients reported by Ferrans and Powers (1993) with a mean score of 20.30, while females in the study group scored higher than any group with a mean QLI score of 22.48. Given that there were items on the SHSS as well as the HSS that patients felt were difficult in their lives, therefore, indicating some degree of treatment-related stress, why does this group and those in previous studies report a QLI score not particularly different than the general population? Ferrans and Powers (1993) suggest that the passage of time may allow individuals to change and adapt to the changes which might at first cause sufficient distress so as to lower the level of quality of life initially. In this study, however, most of the patients (73%) had received dialysis for less than two years, which may or may not be deemed sufficient time to adapt to renal

failure and its treatment. One suggestion in the literature is that given the harsh realities of renal failure and its prognosis, goals, life priorities and value systems change (Ferrans & Powers, 1993; Goldberg, 1974). Therefore, priority may be given to intangibles, like family relations and less to work, money, and things (Ferrans & Powers, 1993; Goldberg, 1974).

The items reported as most distressing for the chronic hemodialysis patient on the HSS (limitation of physical activity, length of treatment, fatigue, decrease in social life, uncertainty concerning future, limitation of food, muscle cramps, sleep disturbances, limitation of fluid, and changes in bodily appearance) and the SHSS (thirst, finances, low energy level, feeling ill, having a chronic illness like renal failure, feeling tired, inability to travel freely, fluid restriction, dependence on others, constipation). Several of these items (thirst, fluid restriction, restriction in physical activity, fatigue, muscle cramps, and uncertainty regarding the future) have been identified as stressful in other studies (Baldree, Murphy & Powers, 1982; Bihl, Ferrans & Powers, 1988; Tietze, 1984).

Overall, this study sample was satisfied with nursing care, however, there was not a significant correlation with perceived quality of life. In an earlier study, Ferrans, Powers and Kasch (1987) found that satisfaction with nursing care was moderately correlated with quality of life, however, this study was not able to support that finding.

As observed in earlier studies (Weissman & Klerman, 1977), women did tend to report higher levels of depression, although the incidence was not significantly higher than the male subjects. Likewise, several authors (Kennedy, Craven & Roin, 1989; Sacks, Peterson & Kimmel, 1990; Smith, Hong & Robson, 1985) report that chronic renal failure patients as a group tend to have a high incidence of depression. This study was able to lend support to those studies as it was found in this study that a large number of the subjects (62.2%) were depressed.

There was a significant relationship between depression and income. Those individuals in the sample reporting higher incomes tended to also report a higher degree of depression. The reason for this is unknown and bears further examination.

Concurrent Validity of the Simmons
Hemodialysis Stressor Scale

Another finding of the study was that support for concurrent validity for the Simmons Hemodialysis Stressor Scale was provided by a strong correlation ($r=.664$, $p=0.0001$) between scores from the SHSS and an established assessment of treatment-related stress, the HSS. There is a statistically significant correlation between the HSS and the SHSS although at a level less than .70. However, because the correlation is significant at the $p=0.0001$, it suggests one must give the relationship serious consideration, because, as stated earlier, Nunnally (1978) purports that a correlation coefficient of 0.70 is sufficient for beginning phases of research or basic research. Although this coefficient cannot meet that criteria, it is sufficiently close as to suggest the need for future psychometric evaluation of the SHSS instrument. Initial assessment of internal consistency, $\alpha=0.919$, as well as the assessment of concurrent validity, are encouraging.

Conclusions and Recommendations

Conclusions

This sample ($N=45$) of patients was similar to other groups of chronic hemodialysis patients and demonstrated

similar rates of depression as has been reported for chronically ill individuals and end stage renal disease patients. Since the study also suggested a trend which indicates treatment-related stress and depression are inversely related to quality of life, relationships one might expect, it seems that some intervention to lessen either or both of these would prove helpful to the patient on hemodialysis. It would be interesting to note what methods of intervention would be most effective for this group of patients.

Although predialysis weight gain and clinical laboratory indicators did not account for any significant variance related to quality of life, they do represent some measure of health, wellness, and effectiveness of dialysis in the chronic hemodialysis patient. Therefore, it might be interesting to observe retrospectively and prospectively clinical data in relation to longevity as well as quality of life and compare differences between individuals whose lifestyle supported those measures as opposed to those who did not.

Recommendations

Based on the findings and conclusions of this descriptive, correlational, predictive study of chronic

hemodialysis patients, the following recommendations for future study are made:

1. The study should be replicated, using a larger sample and subjects from a variety of clinical agencies, which would increase the generalizability of the study.
2. A descriptive, exploratory study to compare quality of life and treatment-related stress of recently diagnosed patients placed on hemodialysis to those who were veterans of the treatment might be conducted to address the issue of changing values and personal/professional goals.
3. Replicate the study, removing the satisfaction with nursing care variable, replacing it with a variable such as hope or some other variable that might be related and help account for part of the variance associated with quality of life in the chronic hemodialysis patient.
4. Repeat the study, using a longitudinal, repeated measure approach to measure the effectiveness of antidepressant and/or erythropoietin drug therapy on depression and quality of life in chronic hemodialysis patients.
5. Repeat the study, but include transplant and peritoneal dialysis patients as part of the sample and compare differences between the groups.

6. Repeat the study, but eliminate those variables, such as clinical indicators and demographic variables, which did not suggest a significant relationship among the variables or differences among the groups.
7. Continue to evaluate the psychometric properties of the Simmons Hemodialysis Stressor Scale.

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APPENDICES

APPENDIX A

Medical Data Form

MEDICAL DATA FORM

(FOR INVESTIGATOR USE ONLY)

Researcher Initials _____ Subject Code _____
Today's Date _____Time hemodialysis treatment: started _____ AM / PM
completed _____ AM / PMTime data collection: started _____ AM / PM
completed _____ AM / PM

Most Recent Laboratory/Medical Data:

LAB TEST	LAB VALUE	DATE
HEMOGLOBIN		
HEMATOCRIT		
POTASSIUM		
PHOSPHORUS		
BLOOD UREA NITROGEN		
CREATININE		
MISCELLANEOUS	INDICATE IF KILOGRAMS OR POUNDS	DATE
PREDIALYSIS WEIGHT GAIN		

ETIOLOGY OF RENAL FAILURE, IF KNOWN _____

COMMENTS:

APPENDIX B

Consent Form

**LOUISIANA STATE UNIVERSITY
MEDICAL CENTER - Shreveport
INSTITUTIONAL REVIEW BOARD FOR HUMAN RESEARCH (IRB)
CONSENT FORM**

Project Title: Predictors of Quality of Life in the Hemodialysis Patient.

Name of subject: _____ Subject I.D. No.: _____

Age: _____ Date of Birth: _____ Sex: _____ Research Project No.: #94-188

Date: _____ Location: _____ Service: Nephrology

Definition of Consent Form

This consent form gives detailed information about the research study which you will be able to discuss with your doctor. It is not meant to frighten or alarm you; it is an effort to make you better informed in order for you to make a decision as to whether or not you wish to participate. This process is known as "informed consent."

Purpose of Study and Selection of Subjects

You are invited to participate in a research study about treatment-related stress, satisfaction with nursing care and predictors of quality of life in patients who are currently being treated with chronic hemodialysis. Researchers at LSUMC-Shreveport hope to learn what variables predict quality of life in the chronic renal failure patient. You were selected as a possible participant in this study because you have confirmed end stage renal disease and meet the other inclusion requirements for this project. The total time required to participate in the study is about one hour.

Description of Experimental Part of Study Including Procedures To Be Used
If you decide to participate, the investigator will ask you to complete questionnaires about your feelings of satisfaction with nursing care and stress related to the hemodialysis treatment. You will also be asked to complete a survey evaluating your quality of life. It will be necessary for you to complete the forms during the visit with the investigator.

Description of Procedures That May Result in Discomfort or Inconvenience
The procedures in this study should not cause you any pain or physical discomforts.

Risks

Your participation in the project involves the following risks: You will be sharing information about your feelings that may be considered sensitive.

Benefits

A possible benefit of this study is that the information collected may assist nurses and other health care workers identify ways of reducing treatment-related stress or improving patient satisfaction or quality of life. We cannot and do not guarantee that you will receive any benefits from this study.

Alternatives

The alternative is to not participate in this study.

Confidentiality

Any information obtained during this study and identified with you as a subject will remain confidential and will be disclosed only with your permission. The results of this research may be used or reported in a scientific presentation or publication, but you will not be personally identified and your confidentiality will be maintained.

Reimbursement and Costs

There are no added costs to the subject because of participation. Each subject will receive \$5.00 in cash for return of a completed study packet. There is no pro rata method of payment. There will be no other reimbursements made to the participant.

Nonparticipation or Withdrawal

Your decision whether or not to participate in this study will not involve any penalty or loss of rights nor will it prejudice your future relation with this institution. If you decide to participate, you are free to discontinue participation at any time without penalty or loss of benefits to which you are entitled.

Further Information

If you have any questions, please ask us. If you have any additional questions later, Pamela Simmons, MSN, RN, C at 675-7390 will be happy to answer them. If you have any questions about your rights or other concerns you may contact the Chairman of the Institutional Review Board at 675-5409 or the Dean of LSUMC-S at 675-5240 or TWU Office of Research & Grants Administration during office hours at 817-898-3375.

In accordance with federal regulations, we are obliged to inform you about the policy of LSUMC-S in the event injury occurs. LSUMC-S will provide medical care for any injuries directly resulting from your participation in approved research here. We have no voluntary program of compensation for research-related injuries. Further information can be obtained by calling Pamela Simmons at 675-7390.

Medical services and compensation for injuries as a result of your participation in the research are not available from TWU.

You will be given a copy of this form to keep.

You are making a decision whether or not to participate. Your signature indicates that you have read the information provided above and have decided to participate in this study. If you decide to participate you are free to discontinue participation at any time.

Signature of Participant

Date

TimeAM
PM

Signature of Witness

Signature of Investigator

IRB - Request for Approval of Investigation
Involving Use of Human Subjects

APPENDIX C

CES-Depression Scale

CES-D Scale

CIRCLE the number of the statement which best describes how often you felt or behaved this way --- **DURING THE PAST WEEK.**

	Less than 1 day	1-2 days	3-4 days	5-7 days
1. I was bothered by things that usually don't bother me.	0	1	2	3
2. I didn't feel like eating: my appetite was poor.	0	1	2	3
3. I felt that I could not shake off the blues even with help from my family or friends.	0	1	2	3
4. I felt that I was just as good as other people.	0	1	2	3
5. I had trouble keeping my mind on what I was doing.	0	1	2	3
6. I felt depressed.	0	1	2	3
7. I felt that everything I did was an effort.	0	1	2	3
8. I felt hopeful about the future.	0	1	2	3
9. I thought my life had been a failure.	0	1	2	3

10. I felt fearful.	0	1	2	3
11. My sleep was restless.	0	1	2	3
12. I was happy.	0	1	2	3
13. I talked less than usual.	0	1	2	3
14. I felt lonely.	0	1	2	3
15. People were unfriendly.	0	1	2	3
16. I enjoyed life.	0	1	2	3
17. I had crying spells.	0	1	2	3
18. I felt sad.	0	1	2	3
19. I felt that people disliked me.	0	1	2	3
20. I could not get "going".	0	1	2	3

-----DO NOT WRITE BELOW THIS LINE-----

TOTAL ITEMS ANSWERED IF LESS THAN 20 _____

0	1	2	3	TOTAL

APPENDIX D
Hemodialysis Stressor Scale

The Hemodialysis Stressor Scale was used
with the permission of Dr. S. Murphy.

APPENDIX E

Simmons Hemodialysis Stressor Scale

**SIMMONS' HEMODIALYSIS STRESS SCALE
(SHSS)
PART ONE**

DIRECTIONS: Please respond to the following questions by placing a circle around the word(s) which best describe how you feel **right now**.

- 1a. Basically, I am a (healthy) (ill) person.
 - 2a. Most of the time, I feel (well) (sick).
 - 3a. I experience (little) (a lot of) stress on a day to day basis.

PART TWO

DIRECTIONS: Please indicate the degree to which each of the following items affect you. Rate the item according to the following scale:

- 1-The item **NEVER** bothers me.
 - 2-The item **RARELY** bothers me.
 - 3-The item **FREQUENTLY** bothers me.
 - 4-The item **CONSTANTLY** bothers me.

Example-

Sunshine 1 2 3 4
 Headaches 1 2 3 4

There are NO RIGHT OR WRONG answers! Please circle the number which best describes how you feel *right now* about each of the items listed below.

- | | | | | |
|---|---|---|---|---|
| 1. Food limitations | 1 | 2 | 3 | 4 |
| 2. Fluid restrictions | 1 | 2 | 3 | 4 |
| 3. Frequency of hemodialysis treatments | 1 | 2 | 3 | 4 |
| 4. Muscle cramps | 1 | 2 | 3 | 4 |

- 1-The item **NEVER** bothers me.
2-The item **RARELY** bothers me.
3-The item **FREQUENTLY** bothers me.
4-The item **CONSTANTLY** bothers me.

5. Low blood pressure on hemodialysis	1	2	3	4
6. Itching	1	2	3	4
7. Decreased sexual desires	1	2	3	4
8. Frequent needlesticks	1	2	3	4
9. Employment status	1	2	3	4
10. Feeling tired	1	2	3	4
11. Maintaining prescribed weight	1	2	3	4
12. Thirst	1	2	3	4
13. Inability to travel freely	1	2	3	4
14. Risks of infectious diseases(AIDS or Hepatitis)	1	2	3	4
15. Clotting of fistula/grant	1	2	3	4
16. Risk of bleeding.	1	2	3	4
17. Depression	1	2	3	4
18. Waiting for transplant	1	2	3	4
19. Sleep disturbances	1	2	3	4
20. Uncertainty about future	1	2	3	4
21. Finances	1	2	3	4
22. Dependence on others	1	2	3	4

- 1-The item **NEVER** bothers me.
 2-The item **RARELY** bothers me.
 3-The item **FREQUENTLY** bothers me.
 4-The item **CONSTANTLY** bothers me.

23. Lack of urination	1	2	3	4
24. Appearance	1	2	3	4
25. Presence of access	1	2	3	4
26. Dialysis machine	1	2	3	4
27. Loss of control	1	2	3	4
28. Boredom (during hemodialysis treatment)	1	2	3	4
29. Resentment/anger towards staff	1	2	3	4
30. Resentment/anger towards family	1	2	3	4
31. Resentment/anger towards self	1	2	3	4
32. Presence of other illnesses	1	2	3	4
33. Decreased ability to have children	1	2	3	4
34. Changes in role on the job	1	2	3	4
35. Changes in role at home	1	2	3	4
36. Frequent hospitalizations	1	2	3	4
37. Weighing in before hemodialysis	1	2	3	4
38. Difficulty in obtaining donor kidney	1	2	3	4
39. Having a chronic illness like renal failure	1	2	3	4
40. Feeling ill	1	2	3	4

- 1-The item **NEVER** bothers me.
 2-The item **RARELY** bothers me.
 3-The item **FREQUENTLY** bothers me.
 4-The item **CONSTANTLY** bothers me.

- | | | | | |
|--|---|---|---|---|
| 41. Lack of staff support | 1 | 2 | 3 | 4 |
| 42. Lack of family support | 1 | 2 | 3 | 4 |
| 43. Lack of support from spouse
or significant other | 1 | 2 | 3 | 4 |
| 44. Limited physical activity | 1 | 2 | 3 | 4 |
| 45. Low energy levels | 1 | 2 | 3 | 4 |
| 46. Fear/anxiety related to illness or
its treatment. | 1 | 2 | 3 | 4 |
| 47. Fear/anxiety related to the future | 1 | 2 | 3 | 4 |
| 48. Reduction in activities that you use to
participate in. | 1 | 2 | 3 | 4 |
| 49. Diarrhea | 1 | 2 | 3 | 4 |
| 50. Constipation | 1 | 2 | 3 | 4 |
| 51. Other _____ (please specify) | 1 | 2 | 3 | 4 |
| 52. Other _____ (please specify) | 1 | 2 | 3 | 4 |

DO NOT WRITE BELOW THIS LINE

1	2	3	4	TOTAL

A:1&L SHEET 1/95

APPENDIX F

Larson's Caring Satisfaction Scale

Used with the permission of:

Patricia J. Larson, RN, DNSc, FAAN
Associate Professor
Program Coordinator of Oncology Graduate Program
Department of Physiological Nursing
School of Nursing, Box 0610
University of California
San Francisco, CA 94143-0610

APPENDIX G
Ferran's Quality of Life Index

Used with the permission of:

Carol Estwing Ferrans, PhD, RN
Assistant Professor
The University of Illinois at Chicago
Department of Medical-Surgical Nursing
College of Nursing
845 South Damen Avenue, 7th Floor
Chicago, Illinois 60612-7350

APPENDIX H
Demographic Data Questionnaire

DEMOGRAPHIC DATA SHEET

DIRECTIONS: Please complete the following questions.

1. How old are you? ____ YEARS
2. How long have you received hemodialysis? ____ YEARS
3. Please indicate your current employment status:
 EMPLOYED FULL TIME
 EMPLOYED PART TIME
 NOT EMPLOYED AT THIS TIME
 RETIRED
4. Did you work outside the home before your illness?
 YES NO

If you answered YES, please give the number of years you worked before you had kidney failure. ____ YEARS

5. What is your current marital status?
 NEVER BEEN MARRIED
 SEPARATED
 MARRIED
 WIDOWED
 DIVORCED
 OTHER
6. What is your race?
 NATIVE AMERICAN/INDIAN
 ASIAN
 BLACK/AFRICAN-AMERICAN
 CAUCASIAN
 HISPANIC
7. You are: FEMALE MALE

8. What is your present living arrangement?

- I LIVE ALONE
 I LIVE WITH MY SPOUSE AND/OR CHILDREN
 I LIVE WITH MY PARENTS
 I LIVE WITH FRIENDS OR NON-RELATIVES

9. How many times per week do you usually have hemodialysis?

TIMES EACH WEEK

10. Do you feel your family and friends provide you with enough support?

YES NO

11. Would you describe "support" as:

- emotional spiritual
 financial all of these
 physical none of these

12. What is the highest grade you completed?

- 8th grade or less
 9th - 12th
 some college/trade school
 college graduate
 graduate school

13. What caused your renal failure? _____

14. What is your combined household income?

- | | |
|---|--|
| <input type="checkbox"/> less than \$10,000 | <input type="checkbox"/> \$40,001 - 50,000 |
| <input type="checkbox"/> \$10,001 - 20,000 | <input type="checkbox"/> \$50,001 - 60,000 |
| <input type="checkbox"/> \$20,001 - 30,000 | <input type="checkbox"/> \$60,001 - 70,000 |
| <input type="checkbox"/> \$30,001 - 40,000 | <input type="checkbox"/> over \$70,001 |

15. Do you have any other chronic illness(es), such as:

- DIABETES YES NO
HIGH BLOOD PRESSURE YES NO
HEART DISEASE YES NO
OTHER _____
OTHER _____

APPENDIX I
Instrument Packet Cover Sheet

PREDICTORS OF QUALITY OF LIFE IN THE HEMODIALYSIS PATIENT

JANUARY/FEBRUARY 1995

THANK YOU FOR PARTICIPATING IN THIS STUDY. MANY OF THE QUESTIONS
MAY SOUND THE SAME TO YOU, BUT **PLEASE** ANSWER EACH ONE OF THEM AS
HONESTLY AS YOU CAN.

SUBJECT CODE _____

RESEARCHER INITIAL _____

APPENDIX J

Human Subjects Approval

**LOUISIANA STATE UNIVERSITY
MEDICAL CENTER - Shreveport
OVERTON BROOKS VA MEDICAL CENTER**
Institutional Review Board for Human Research (IRB)

**INITIAL REVIEW OF PROTOCOL:
REPORT OF COMMITTEE ACTION**

Location or Source of Subject Population

LSUMC-S VA BOTH X Other

If protocol includes VA patient, VA R&D Committee must review and approve protocol prior to entering VA patients.

Project No.: #94-188

Project Title: "Predictors of Quality of Life in Hemodialysis Patients"

Principal Investigator: Pamela B. Simmons, MSN, RN, C

This is to certify that the Institutional Review Board for Human Research reviewed the above project on 10/21/84. The IRB has evaluated the project in accordance with the guidelines established for activities involving human research subjects.

Recommendation of Institutional Review Board: Approved by Exemption

Comments or required modifications:

Ms. Simmons requested exemption under Category #2 - Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior. The study is designed to examine whether depression, anxiety, treatment-related stress, satisfaction with nursing care, and selected clinical and demographic variables are predictors of quality of life in patients receiving chronic hemodialysis.

If revisions are required, they should be submitted to the Office of Grants Administration for review and approval by the IRB Chairman before proceeding with this study.

Informed consent may be obtained only by the principal investigator or one of the listed co-investigators.

You are required to notify immediately, in writing, the Institutional Review Board for Human Research of any adverse reactions to your research project.

Use the assigned project number in corresponding with the IRB.

10-214

Date

S. Conrad
Steven A. Conrad, M.D., Ph.D.
Chairman, Institutional Review Board

If protocol includes VA patients, send a copy of this report to VA Medical Research Service
(151)
A:ANOCAINTEXR
10/21/84

**TEXAS WOMAN'S
UNIVERSITY**

December 6, 1994

HUMAN SUBJECTS
REVIEW COMMITTEE
P.O. Box 22939
Denton, TX 76204-0939
Phone: 817-898-3377

Pamela B. Simmons
3832 Claiborne Avenue
Shreveport, Louisiana 71109

Dear Pamela B. Simmons:

Social Security #: 350-52-8063

Your study entitled "Predictors of Quality of Life in Hemodialysis Patients" has been reviewed by a committee of the Human Subjects Review Committee and appears to meet our requirements in regard to protection of individuals' rights.

Be reminded that both the University and the Department of Health and Human Services (HHS) regulations typically require that agency approval letters and signatures indicating informed consent be obtained from all human subjects in your study. These are to be filed with the Human Subjects Review Committee. Any exception to this requirement is noted below. This approval is valid one year from the date of this letter. Furthermore, according to HHS regulations, another review by the Committee is required if your project changes.

Special provisions pertaining to your study are noted below:

- The filing of signatures of subjects with the Human Subjects Review Committee is not required.
- Other:
- No special provisions apply.

Sincerely,

Chair
Human Subjects Review Committee - Denton

cc: Graduate School
Dr. Maisie Kashka, Nursing
Dr. Carolyn Gunning, Nursing

APPENDIX K

Correspondence and Letters of Permission

3832 Claiborne Avenue
Shreveport, LA 71109
29 November 1988

Kathleen Baldree, M.S.N., R.N.
Instructor
North Park College
Chicago, IL

Dear Ms. Baldree,

I am pursuing doctoral studies in nursing at Texas Woman's University in Denton, Texas. For an assignment, I am developing an instrument which I must pilot next semester. I would like to use your instrument, the Hemodialysis Stressor Scale, to establish criterion validity. I am also interested in perhaps using your stressor scale in my doctoral research.

I am particularly interested in the end stage renal disease patient and the relationship, if any, between level of stress, level of hope and coping ability. Although I am only in the very preliminary stages of developing my research proposal, I would, at this time, like to ask your permission to use the Hemodialysis Stressor Scale in piloting my own instrument and later as one of the tools used to collect data for my dissertation.

If permission is granted, please advise me at your earliest possible convenience of any conditions or special instructions you might have pertaining to the use of your tool. I will, of course, be more than happy to provide you with the results of my study, including reliability and validity information should you desire it.

Please be advised that I will be responsible for any expenses related to the cost of copying and mailing the instrument.

I certainly appreciate any assistance you can provide.

Thank you

Pamela B. Simmons, MSN, RN

August 9, 1989

Dear Ms. Simmons

Here is a copy of the pressor pole.
You have my permission to duplicate and
use in your study.

I would really enjoy receiving
a copy of your study when it's
completed.

Best of luck to you! If you have
any further questions, please call
(604) 387-1583).

Sincerely
Dr. F. Murphy, Ph.D.

UIC The University of Illinois
at Chicago

Department of Medical-Surgical Nursing (MC 802)
College of Nursing
345 South Damen Avenue, 7th Floor
Chicago, Illinois 60612-7350
312-996-7300

July 26, 1994

Ms. Pamela Simmons
LSU Medical Center
1501 Kings Highway
Shreveport, LA 71130

Dear Ms. Simmons:

Thank you for your interest in the Ferrans and Powers Quality of Life Index (QLI). I have enclosed the generic and dialysis versions of the QLI and the computer program for calculating scores. I also have included a list of the weighted items that are used for each of four subscales: health and functioning, social and economic, psychological/spiritual, and family, as well as the computer commands used to calculate the subscale scores. The same steps are used to calculate subscale scores and overall scores.

There is no charge for use of the QLI. You have my permission to use the QLI for your study. In return, I ask that you send me any publications of your findings using the QLI. Such reports are extremely important to me.

If I can be of further assistance, please do not hesitate to contact me. I wish you much success with your research.

Sincerely,

Carol Estwing Ferrans
Carol Estwing Ferrans, PhD, RN
Assistant Professor

TEXAS WOMAN'S
UNIVERSITY
DENTON, DALLAS, HOUSTON

COLLEGE OF NURSING
P.O. Box 23426
Denton, TX 76204-3426
Phone: 817-898-2401

May 13, 1994

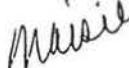
Pam Simmons
3832 Clairborne Avenue
Shreveport, LA 71009

Dear Pam,

I am sending an enrollment form for Summer Session II which begins July 12. Were you able to reach Dr. Hamilton and discuss your proposal ideas?

Hope we can plan a proposal defense for July.

Sincerely,



Maisie Kashka

**SCHOOL OF
MEDICINE IN SHREVEPORT**
Louisiana State University
Medical Center
University Hospital
1501 Kings Highway
Post Office Box 33932
Shreveport, LA 71130-3932
Telephone: (318) 674-7390
FAX# (318) 674-5666

Nursing Administration

Patricia J. Larson, R.N., D.N.Sc.
Associate Professor
Program Coordinator of Oncology Graduate Program
Department of Physiological Nursing
School of Nursing, Box 0610
University of California
San Francisco, CA 94143

Dear Dr. Larson:

I am a doctoral student at Texas Woman's University, Denton, Texas. Currently, I am reviewing instruments that might assist me in data collection for my dissertation. I am interested in using the Care/Satisfaction Questionnaire (CARE/SAT) which you described in the Western Journal of Nursing Research (1993), 15(6):690-707. May I have a copy of the instrument, any additional reliability information you may have, as well as your permission to use the instrument? In return, I will be happy to furnish you with my study results should I use the instrument.

Thank you.

Respectfully yours,

Respectfully yours,
Daniel B. Simmon

Pamela B. Simmons, MSN, RN, C
Acting Assistant Hospital Administrator
for Patient Care Services

PBS/mem



University of California San Francisco...A Health Sciences Campus

RECEIVED

OCT 10 1994

Nursing Administration
LSU Medical Center

Susan M. Larson
Department of Oncology
Nursing Faculty - BSN
Patricia J. Larson, DNSc, FAAN
Professor of Oncology Nursing
Director, Center for Symptom Management

August 17, 1994

Pamela B. Simmons, MSN, RN, C
Louisiana State University Medical Center
University Hospital, Nursing Administration
P.O. Box 33932
Shreveport, LA 71130-3932

Dear Ms. Simmons:

Thank you for your interest in my work on caring. I am enclosing the information on:
1) the description of the derivation of the CARE-Q I items and scales; and 2) the evolved CARE/SAT as detailed in the attached article.

To use the CARE/SAT, all questionnaires must be xeroxed from the enclosed copy. This is to ensure that the visual analog line remains a constant 100mm line (apparently xeroxing from copies causes the line to be enlarged in length). To gain the patients' response, use a metric ruler and measure at the mid-point of the "X". If the patient makes two "X's," toss a coin to select one. If the patient marks an "X" beyond the line, consider it 100; if below, it is then ranked as 0. The CARE-Q in its present form does not generate a total score.

You are welcome to use either instrument. If you want to change the content or format of either instrument, please be aware that it will be important that the psychometric properties of the changed instrument will need to be addressed. If you decide to use one or both, please let me know and provide me with an abstract of the study's findings upon completion. I would also appreciate your acknowledgement of my authorship of the instrument.

If I can be of further assistance, please let me know.

Sincerely,

Patricia J. Larson, RN, DNSc, FAAN
Associate Professor and Director of the Oncology Program
American Cancer Society Professor in Oncology Nursing
Director, Center for Symptom Management

PL/sn
Enclosures

LOUISIANA STATE UNIVERSITY
MEDICAL CENTER - Shreveport
OVERTON BROOKS VA MEDICAL CENTER
Institutional Review Board for
Human Research (IRB)

-FOR OFFICE USE ONLY-

Protocol No. 94-188

Date Received 10/20/94

**REQUEST FOR APPROVAL OF
INVESTIGATION INVOLVING USE
OF HUMAN SUBJECTS**

Read instructions carefully and then complete each item (please print or type). If an item is not applicable, indicate by "NA". Obtain required signatures. Submit original and 24 copies to the office of Grants Administration, Rm 1-214 at LSUMC. Include 24 copies of the Consent Form if your IRB protocol is a summary of a more complete official protocol, two (2) copies of the latter must be on file with the Office of Grants Administration.

Location or Source of Subject Population

LSUMC-S VA BOTH OTHER

If protocol includes VA patients, send 14 additional copies of this report after IRB approval to VA Medical Research Service (151). VA R&D Committee must give final approval to proceed.

1. Principal Investigator: Pamela B. Simmons, RN,C Degree: MSN 2. Academic Title: Instructor
Telephone No.: 674-7390 3. Department: Nursing Administration Section: Staff Development
4. Mailing Address: 1501 Kings Highway, P.O. Box 33932, Shreveport, LA
5. Protocol title: (use same title of externally-funded research, if applicable) Predictors of Quality of Life in the Chronic Hemodialysis Patient
6. Inclusive dates of study Nov 1994 to May 1995. Expected duration of study on individual subjects: < 1 hour.
7. Source of funds (be specific) _____
8. Proposal will not be _____ will be _____ has been submitted to funding agency (deadline date): _____
9. Co-investigators: name, degree, department, telephone number. (Only principal investigator or one of the listed co-investigators may obtain informed consent).
 - a. Bea Launius, RN, BS, CCRN; Nursing Administration; ext. 7187 Bea Launius RN, BS, CCRN
 - b. Stacey Durr, RN, BSN; Nursing Administration; ext. 6289 Stacey Durr RN, BSN
 - c. Bettye Meadors, RN, BSN, C; Nursing Administration; ext. 6288 Bettye Meadors
 - d. Jamie McCole, RN, BSN, C; Nursing Administration; ext. 6286 Jamie McCole
 - e. Beverly Hewitt, RN, BSN, CETN; Nursing Administration; ext. 7206 Beverly Hewitt
10. Student Research Investigator Yes No
Student Name _____ Enrolled at _____

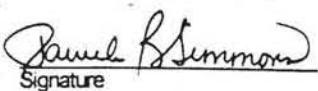
11. Does this protocol involve the use of human tissue or blood in a research laboratory not subject to clinical guidelines for handling human specimens? Yes No
If "Yes", the protocol must be submitted for Biosafety Committee Review.

IRB - Request for Approval of Investigation
Involving Use of Human Subjects

SECTION J. SIGNATURES

1. I certify that the above information concerning procedures to be taken for protection of human subjects is correct. I will seek and obtain prior approval for any change in this protocol and will report promptly to the IRB any unexpected or otherwise significant adverse effects encountered in the course of the study.

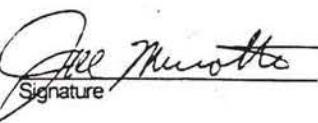
Pamela B. Simmons, MSN, RN, C
Principal Investigator


Signature

October 15, 1994
Date

This protocol has been reviewed and approved for submission to the Institutional Review Board for Human Research.

Joe M. Miciotto
Department Chairman/
Service Chief

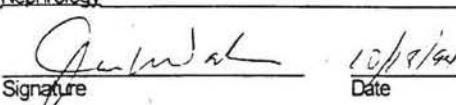

Signature

Oct 17, 1994
Date

2. If subjects covered under this research protocol are administratively the responsibility of another department, approval is required.

a. Department/Service: Nephrology

Jack Work, M.D.
Department Chairman/
Service Chief


Signature

10/19/94
Date

b. Department/Service: _____

Department Chairman/
Service Chief

Signature

Date

LOUISIANA STATE UNIVERSITY
MEDICAL CENTER - Shreveport
Institutional Review Board
for Human Research (IRB)

-FOR OFFICE USE ONLY-

Date Received 10/20/94

Protocol # G4-189

REQUEST FOR EXEMPTION

- To Be Completed By The Principal Investigator -

Location or Source of Subject Population.

LSUMC-S VA Both Other

If protocol includes VA patients, VA R&D Committee must give exemption for the VA.

Principal Investigator: Pamela B. Simmons, MSN, RN, C Title: Director

Department/Section: Nursing Administration Staff Support & Development Telephone No.: 675-5073

Protocol Title: Predictors of Quality of Life in Hemodialysis Patients

The following categories of research are exempt from review by the IRB. Please indicate the category for which you are requesting exemption.

1. Research conducted in established or commonly accepted educational settings involving normal educational practices.
2. Research involving the use of educational tests (cognitive, diagnostic, aptitude achievement), survey procedures, interview procedures or observation of public behavior.
3. Research involving the use of educational tests (cognitive, diagnostic, aptitude achievement), survey procedures, interview procedures or observation of public behavior that is not exempt under Paragraph 2, if:
 - a. The human subjects are elected or appointed public officials
 - b. Federal statute(s) require(s) without exception that the confidentiality of the personally identifiable information will be maintained.
4. Research involving the collection or study of existing data, documents, records pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified. directly or through identifiers linked to the subjects.
5. Research and demonstration projects which are conducted by or subject to the approval of department or agency heads, and which are designed to study, evaluate, or otherwise examine public benefit or service programs.
6. Taste and food quality evaluation and consumer acceptance studies.

Does this protocol involve the use of human tissue or blood in a research laboratory not subject to clinical guidelines for handling human specimens? Yes No

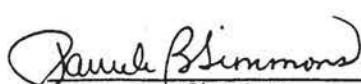
If "Yes," this protocol must be submitted for Biosafety Committee review.

Briefly describe your research project (please print or type):

The study is designed to examine whether depression, anxiety, treatment-related stress, satisfaction with nursing care, and selected clinical and demographic variables are predictors of quality of life in patients receiving chronic hemodialysis.

October 19, 1994

Date


Signature

EXEMPT.IRB
Rev. 6/94

TEXAS WOMAN'S
UNIVERSITY

DENTON DALLAS HOUSTON

THE GRADUATE SCHOOL
P.O. Box 22479
Denton TX 76204-479
Phone 817-888-3400
Fax 817-888-3412

January 4, 1995

Ms. Pamela Simmons
3832 Claiborne Ave.
Shreveport, LA 71109

Dear Ms. Simmons:

I have received and approved the Prospectus for
your research project. Best wishes to you in the
research and writing of your project.

Sincerely yours,

Leslie M. Thompson

Leslie M. Thompson
Associate Vice President for Research
and Dean of the Graduate School

d1

cc Dr. Maisie Kashka
Dr. Carolyn Gunning

LOUISIANA STATE UNIVERSITY
MEDICAL CENTER-Shreveport
OVERTON BROOKS VA
MEDICAL CENTER

-FOR OFFICE USE ONLY-

Institutional Review Board
for Human Research (IRB)

Date Received _____

ALTERATION OF PROTOCOL

Any proposed change(s) to be made in a protocol after its original approval must be reported to the Office of Grants Administration on this form. Changes must be reviewed and approved by the IRB prior to implementation. Submit the original and 24 copies at least 12 working days prior to the last Monday of the month. Check with the Office of Grants Administration for an amended holiday schedule.

If the proposed alteration necessitates a change in the Consent Form, an appropriately revised Consent Form must also be submitted.

If the change involves addition, deletion or substitution of investigators, list qualifications and summarize previous experience of the investigator relevant to the area of study and submit a revised face sheet.

Expedited review may be requested for minor changes in approved protocols. Submit original and one copy for expedited review.

-To Be Completed By The Principal Investigator-

Location and Source of Subject Population

LSUMC-S VA Both Other

Principal Investigator: Pamela B. Simmons Title: Director, Staff Support & Development

Department/Section: Nursing Administration/Staff Development Telephone No.: 675-7390

Protocol Title: Predictors of Quality of Life in the Hemodialysis Patient

Protocol No.: 94-188

Date of Original Approval: 10/21/94

Describe the proposed change(s) and reason(s) therefore:

Added TWU Office of Research and Grants Administration to the Further Information Section. Deleting the use of the Spielberger's State Trait Anxiety Index.

Indicate any new risks or benefits which might result from the proposed change:

NONE

Does this alteration of protocol involve the use of human tissue or blood in a research laboratory not subject to clinical guidelines for handling human specimen? YES NO

If "Yes" this protocol must be submitted for Biosafety Committee review.

Revised Consent Form is: Attached Expedited Review Requested
 Not Needed

January 9, 1995

Date

Pamela Blummus

Signature

IF PROTOCOL INCLUDES VA PATIENTS, SEND A COPY OF THIS REPORT TO VA MEDICAL RESEARCH SERVICE (151)

date: April 26, 1995

from: Pamela Simmons, MSN, RN, C
Director, Staff Support and Development

to: Bonnie Seelig
Director, Grants Administration

Enclosed are the consent forms for the study entitled "Predictors of Quality of Life in Chronic Hemodialysis Patients" (Project # 94-188). It is my understanding that your office requires that the forms be on file for 5 years.

Thank you for your assistance.

April 26, 1995

Human Subjects Review Committee
P. O. Box 22939
Denton, TX, 76204-0939

Dear Human Subjects Committee,

Enclosed are the consent forms for the study entitled "Predictors of Quality of Life in Chronic Hemodialysis Patients". It is my understanding that your office requires that the forms be on file for 5 years.

Thank you for your assistance.

Sincerely,



Pamela B. Simmons, MSN, RN, C
(SSN 350-52-8063)
3832 Claiborne Avenue
Shreveport, LA 71109
318/675-7390 (work)
318/631-1974 (home)

cc: Maisie Kashka, PhD, RN

TEXAS WOMAN'S
UNIVERSITY

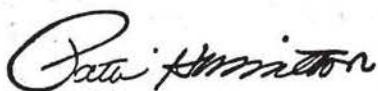
HUMAN SUBJECTS
REVIEW COMMITTEE
P.O. BOX 22050
Denton, TX 76204-0500
Phone: 817-882-3377

May 1, 1995

To: Dr. Maisie Kashka, Nursing
Dr. Carolyn Gunning, Nursing
Graduate School

This is to inform you that, as of this date, Pamela B. Simmons, Social Security #350-52-8063, has placed on file with the Human Subjects Review Committee the agency approval letters and signatures of the subjects who participated in his/her research project "Predictors of Quality of Life in Hemodialysis Patients." The signatures constitute evidence of informed consent of each subject.

Sincerely,



Chair
Human Subjects Review Committee

cc: Pamela B. Simmons
3832 Claiborne Avenue
Shreveport, Louisiana 71109