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COMPLIANCE WITH DIALYSIS REGIMENS: THE EFFECTS
OF COPING AND SOCIAL SUPPORT

^ A Project
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Social Work

by
Toyoko Yagi

June 2006


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OF COPING AND SOCIAL SUPPORT

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ABSTRACT

Compliance with medical regimens is often critical for survival. However, noncompliance is a major problem among dialysis patients. The purpose of this study was to identify determinants of compliance behavior. Specifying determinants of compliance behavior in dialysis patients also helps to develop preventions and early interventions that increase compliance with the medical regimen. In this study, patients' internal coping strategies and their external supports were examined. In order to measure independent variables, quantitative data were collected by using self-administered questionnaires. In addition, biochemical indices which measure compliance were obtained from patients' medical charts. Although it was predicted that patients with greater use of coping strategies and greater social support were more likely to comply with dialysis regimens, support was not found for this hypothesis. It seemed that compliance was affected by multiple variables in a more complex manner than merely being affected by patients' coping style and social support.

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DEDICATION

For my son, Tobey

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CHAPTER ONE

INTRODUCTION

In Chapter One, problem statement, purpose of the study, and significance of the project for social work are discussed.

Problem Statement

Kidney disease is one of the most serious diseases in the United States (U.S.), and compliance with the medical regimen is critical for survival. However, there is a lack of knowledge regarding compliance behavior in patients with kidney disease. Kidney disease, also known as End-Stage Renal Disease (ESRD), occurs when kidneys can no longer function properly and are unable to remove toxic wastes from blood (Katz et al., 1998, as cited in Hailey, & Moss, 2000). The leading cause of ESRD is diabetes, but hypertension, glomerulonephritis, and cystic kidney disease can also cause ESRD (United States Renal Data System [USRDS], 2004).

In 2001, more than 90,000 people in the U.S. were diagnosed with ESRD, and nearly 400,000 U.S residents underwent some form of medical treatments (National Kidney and Urologic Disease information Clearinghouse

[NIKUDIC], 2004). Although ESRD affects all races, African Americans and Native Americans have the highest rates of incidence. Furthermore, in the recent years, incidence rates among Hispanics and Asians have increased. Males are more likely than females to be diagnosed with ESRD. The median age of the overall patient population is 64.5. Each year, the population with ESRD is increasing, and it is estimated that by 2030, the population with ESRD will reach 1.3 million (USRDS, 2004).

Although renal replacement (kidney transplant) is available for some patients, currently approximately 72 percent of ESRD patients are treated with dialysis. Dialysis comes in two different forms: hemodialysis (HD) and peritoneal dialysis (PD). HD is the most common form of ESRD treatment, and over 260,000 patients receive HD, which accounts for 65 percent of all ESRD patients (USRDS, 2004). HD patients are required to attend a local dialysis center three times per week for approximately four hours per treatment. During the HD treatment, patients are connected to the dialyzer, which removes extra fluid, waste, and salt from their blood. In contrast, PD is a home-based treatment. PD patients clean

their blood at home on their own schedule. A tube, which is called catheter, is surgically placed inside of the patient's peritoneum, and through the catheter the dialysis solution passes into the peritoneal sac. Within the peritoneal sac, removing waste and replacing of dialysis solution takes place simultaneously. The solution with waste is drained from the body through the catheter (Christensen, 2000).

The dialysis treatment not only brings with it unpleasant physical conditions, such as muscle cramps, headaches, nausea, fatigue and restlessness, but it often requires annual hospitalization due to osteodystrophy, peritonitis, hepatitis, and bursting access site (Baldree, Murphy, & Powers, 1982; Devins et al., 1990; Gurklis & Menke, 1988; Kutner, Brogan, & Kutner, 1986; Wolcott, Nissenson, & Landsevrk, 1988). Dialysis is also associated with many undesirable outcomes, such as changes in work, restriction in social life, loss of physical attractiveness, physical strength, and sexual activity (Shulman, Pacey, Price, & Spinelli, 1987; Wolcott et al., 1988). Moreover, dialysis requires patients to comply with scheduled dialysis treatments, fluid and diet restrictions, and a medication regimen

(Hailey & Moss, 2000). Thus, dialysis patients experience major adjustments in lifestyle changes (Arici et al., 1998).

Although the dialysis treatment along with lifestyle changes causes patients enormous stress, compliance with treatment is essential. Noncompliance with treatment increases the patients' risk of infections and cardiovascular failure. Patients who miss or shorten the dialysis session increase their risk of mortality (Leggat et al., 1998; Kimmel et al., 1998; Bolemborgen, Port, Mauger, & Wolfe, 1995). Noncompliance with a medication regimen also increases the risk of hospitalization and mortality in PD patients (Bernardini, Nagy, & Pirano, 2000). A number of research findings suggested that compliance with medical recommendations are related to survival, but noncompliance is a major problem in dialysis (Hailey & Moss, 2000). Nearly half of the HD patients do not comply with some part of the treatment (Leggat et al., 1998; Sherman, Cody, Matera, Rogers, & Solanchilck, 1994). Moreover, the prevalence of compliance in the U.S. is much higher than that is reported in Sweden and Japan (Bleyer et al., 1999, as cited in Hailey & Moss, 2000).

Although there is no clear policy to facilitate patients' compliance, all staff in the dialysis centers are required to encourage their patients to comply with the medical regimen. Social workers particularly play a key role in assisting dialysis patients to understand their treatments and make decisions to comply with treatment (Bordelon, 2002).

Purpose of the Study

One reason dialysis patients do not comply with their treatments is that they do not understand the severity of ESRD. Although noncompliance with treatment can have serious consequences, usually the patients do not develop aversive symptoms immediately. For example, even if patients do not take their medications, it takes a while until they feel really sick. Until then, they might not feel any differences. Moreover, even if patients skip or shorten dialysis sessions, they cannot see how much toxic wastes are accumulated in their blood. Therefore, it is hard for patients to believe that noncompliance with treatment eventually will damage their bodies, even though social workers repeatedly explain the

negative consequences and encourage them to comply with treatment.

Although Gambro Dialysis, one of dialysis treatment providers in the U.S., may have anticipated problems with patients' compliance, the absence of expertise made it hard for the agency to conduct research. Thus, the agency had not examined this problem yet.

The purpose of this study was to identify determinants of compliance behavior. This was explanatory research, which is usually designed to develop an understanding of the relationships between social problems and other variables. Often times, a cross-sectional survey is used in explanatory research. In a cross-sectional design, the data rely on one-time surveys, which are collected from samples (Grinnell, 2001). Therefore, in this study, in order to measure independent variables, such as social support and coping strategies, quantitative data were collected with surveys, specifically, by using self-administered questionnaires. In addition, because it is fairly standard that objective measures are used to assess compliance, biochemical indices which measure compliance were obtained from patients' medical charts.

Significance of the Project or Social Work

Since compliance among dialysis patients increases survival rate, it is important for social workers to identify patients who are at risk of noncompliance. Specifying determinants of compliance behavior in dialysis patients also helps to develop preventions and early interventions that increase compliance with the medical regimen.

Currently, in order to promote the planned change process, the generalist intervention model is widely used in social work practice. The model provides seven major steps: engagement, assessment, planning, implementation, evaluation, termination, and follow-up. In the model, identifying the client occurs in the assessment phase and developing interventions occurs in the planning phase. Krist-Ashman and Hull (2002) define assessment as "the investigation and determination of variables affecting an identified problem or issues as viewed from micro, mezzo, or macro perspective" (p. 31). In the planning phase, based on information that is gathered in assessment, social workers create plans to solve problems. If social workers are aware of factors that influence noncompliance and find these factors in their patients during

assessment, they will be better able to predict potential noncompliance. The problem could be involved in micro (individual), mezzo (family), and/or macro (community) systems. Depending on the system that is associating with the problem, social workers will assist the patients by providing strategies and resources to prevent noncompliance before it occurs.

In this study, patients' internal coping strategies and their external supports were examined. The research question was as follows: How do coping strategies and social support influence behavioral compliance? For this study, coping strategies and social support were considered as independent variables, and compliance was considered as a dependent variable.

CHAPTER TWO

LITERATURE REVIEW

Introduction

In Chapter Two, compliance among dialysis patients, predictors of noncompliance, theories guiding conceptualization, and methodology in assessing compliance are reviewed.

Compliance among Dialysis Patients

The term compliance is used to measure the patient's ability or willingness to follow medical regimens (Curtin, Svarstad, Andress, Keller, & Sacksteder, 1997). Generally, dialysis patients have to comply with scheduled dialysis treatments, oral medications, dietary restrictions, and fluid restrictions (Curtin et al., 1997; Hailey & Moss, 2000).

HD patients are required to attend all scheduled dialysis sessions at the center and stay the entire session. PD patients also have to comply with a regular PD exchange schedule. Skipped and shortened dialysis sessions are associated with increasing the risk of death (Leggat et al., 1998). Bleyer et al. (1999, as cited in Hailey & Moss, 2000) found that out of 415 HD patients,

more than one-third of the patients skipped at least one session during a six months period. Similar to this finding, Leggat et al. (1998) also found that nearly 30% of the studied population skipped or shortened one or more sessions during the monitored period. Furthermore, the research findings suggest that approximately 33% of PD patients in the study missed prescribed PD exchanges (Piranio & Bernardini, 2000, as cited in Kutner, 2001).

Both HD and PD patients must take phosphate-binding medications and limit intake of phosphorus-rich foods, such as dairy products because their bodies cannot excrete phosphorus. Failure to comply with the medication and dietary regimen, can lead to low calcium levels, renal osteodystrophy, and bone demineralization. Patients are also required to follow strict guidelines regarding potassium intake. If they did not follow the guidelines, potassium levels would elevate and may cause cardiovascular complications (Christensen, 2000). Curtin et al. (1997) found that among 135 HD patients, only 2.1% of patients complied with prescribed doses of phosphate-binding medications.

In addition, fluid restrictions are usually imposed on HD patients. The patients are allowed to take an

extremely limited amount of fluid because their kidneys cannot excrete fluids. Poor compliance with fluid restrictions can lead to pulmonary edema, congestive heart failure, hypertension, muscle cramps, and dizziness (Christensen, 2000; Pang, Ip, & Chang, 2001). Leggat et al. (1998) reported that more than half of the patients in their study did not comply with fluid restriction.

Predictors of Noncompliance

A number of studies have been done to identify compliance behaviors in ESRD patients. Many researchers have examined the relationships between sociodemographic factors and noncompliance behaviors. It was found that age, smoking status, and race were associated with noncompliance (Curtin et al., 1997; DeOreo, 1997, as cited in Kutner, 2001; Leggat et al., 1998). Among HD patients, younger age and smoking are strong predictors of noncompliance with all aspects of the medical regimen (Leggat et al.). Particularly, younger patients were more likely to skip dialysis sessions (DeOreo, 1997, as cited in Kutner, 2001) and miss taking oral medications (Curtin et al., 1997). Compared to Caucasians, African Americans were more likely to miss dialysis sessions (Leggat et

al., 1998) and oral medication (Curtin et al., 1997). There were mixed results regarding gender. Curtin et al. (1997) found that older women were less likely than men to comply with phosphate binders. However, gender was not a significant predictor of noncompliance in the study which was conducted by Leggat et al. (1998). In addition, it was also suggested that living with someone reduces the chance of being noncompliant (Leggat et al., 1998).

In recent years, researchers have been focusing on cognitive and psychosocial factors as predictors of noncompliance. Compared to sociodemographic factors, cognitive and psychological factors are changeable, so there is the potential to increase compliance through interventions (Sensky, Leger, & Gilmour, 1996). Depression is a cognitive factor which influences compliance. Depression is known as the most common psychological problem in HD patients (Kimmel, Weihs, & Peterson, 1993; Welch & Austin, 2001). Kimmel et al. (1998) found that higher levels of depression were related to decreased compliance with medical regimens. Consistent with this finding, depression was found to be the key predictor of quality of life, which affects compliance among PD patients (Martin & Thompson, 2000).

Quality of life was measured with psychometric characteristics which include psychological well-being, physiological function, and social adaptation.

Although coping its self is not directly associated with compliance, it has been identified as a predictor of depression and quality of life which influences compliance. HD patients were more likely to use problem-focused coping methods (Baldree, Murphy, & Power, 1982). Patients who use more problem-focused coping methods showed higher levels of quality of life (Lok, 1996). Pucheu, Consoli, D'Auzac, Français, and Issad (2004) suggested that problem-focused coping helps patients have control over their illness and with it brings better health outcomes. Moreover, patients are more likely to comply with medical regimens when they use coping methods and are given a medical intervention simultaneously (Pucheu et al., 2004).

Another cognitive factor is health locus of control. Internal health locus of control is defined as people's belief that their behaviors and actions are responsible for the consequences of their health status. In contrast, external health locus of control is defined as people's belief that they are not capable of taking care of their

own health, so their health outcomes are influenced by other people, particularly healthcare providers. Sensky et al. (1996) found that young people who had external health locus of control were more likely to be noncompliant.

Similar to health locus of control, self-efficacy is also identified as a predictor of compliance. The concept of self-efficacy was developed by Bandura (1977). Bandura believed that individuals' efficacy expectations influence them to engage in behaviors that produce desired outcomes. Research findings indicated that higher dietary self-efficacy in HD patients is associated with increased compliance behaviors with medical regimens, better health outcomes, and good relationships with health care providers (Zrinyi et al., 2003).

Social support is a psychosocial factor that has been identified as a predictor of compliance. Many research findings suggested that social support was the key variable that influenced patients' compliance. It was found that social support provided by family members and professional caregivers was a significant predictor of compliance. Particularly, those who have family with a higher educational background were more likely to comply

with the medical regimen (O'Brien, 1990). Boyer et al. (1990, as cited in Hailey & Moss, 2000) also reported that high levels of family support were correlated with following dietary restrictions, resulting in lower potassium and phosphorus levels. It was found that HD patients with greater satisfaction with family support showed better fluid restriction compliance (Christiansen et al., 1992; Pang et al., 2001). However, Christiansen et al. (1992) found that compliance with dietary restrictions was not associated with family support. Moreover, Kimmel et al. (1998) found that social support was not associated with behavioral compliance, even though they found that higher levels of social support showed better health outcomes and adjustments to the illness.

Theories Guiding Conceptualization

Compliance behavior could be explained by excuse theory which was developed by Snyder and colleagues. In that theory, excuse making is defined as "the motivated process of shifting causal attributions for negative personal outcomes from sources that are relatively more central to the person's sense of self to sources that are

relatively less central" (Snyder & Higgins, 1988, p. 23, as cited in Tennen & Affleck, 1990, p.216). In other words, excuse making occurs when people facing a negative event perceive other people or situations as the cause of the event, but they do not perceive themselves as the cause. King (1983, as cited in Tennen & Affleck, 1990) found that patients with heart disease tended to believe that their illness was not caused by overeating, smoking, or lack of exercise, but rather it was caused by serious childhood illness, stress, or anxiety, which help to remove personal responsibility from the patients.

Higgins and Snyder (1990) explained that when people associate themselves with an aversive event, they believe that they are able to prevent recurrence, and this belief helps them to increase adaptation. In contrast, people who blame others for an aversive event disassociate themselves from the outcome. They believe that they are unable to control the outcome, so they make a poor adjustment. Thus, Tennen and Affleck (1990) suggested that people who blame others for a threatening event may use poor coping strategies. Blaming others may also interfere with seeking social support because a person who is blamed could be a potential support provider. In

addition, blaming others may hinder people from trusting more powerful people who could prevent a negative outcome. Often times, physicians are regarded as powerful people, and people blame physicians when they are unable to control outcomes. In all these cases, they concluded, blaming others is associated with making a poor adjustment and well-being.

Methodology in Assessing Compliance

Because there is no standardized method for defining and measuring compliance, compliance with dialysis regimens has been assessed by a variety of instruments (Lamping & Campbell, 1990). Both objective and subjective measures have been used to assess compliance (Lamping & Campbell, 1990; Kobrin, Kimmel, Simmens, & Reiss, 1991).

Biochemical indices, such as serum potassium (K), phosphorous (P), and blood urea nitrogen (BUN), and interdialytic weight gain (IWG) are regarded as traditional objective measures of compliance, and these indices have been used by many researchers (Arici et al., 1998; Christensen et al., 1991; Kimmel et al., 1995a, 1995b; Kobrin et al., 1991; Leggat, 1998; Pang et al., 2001; Sensky et al., 1996; Zrinyi et al., 2003). Some

studies also include protein catabolic rate (PCR) and Urea Kinetic Modeling (Kt/V) in biochemical indices (Bernardini et al., 2000; Kimmel et al., 1995a, 1995b; Kobrin et al., 1991; Leggat, 1998).

However, the criteria for a cut-off score that defines compliance varies. Particularly, there is an inconsistency in the criteria that is used in measuring IWG. This lack of a standardized method makes it difficult to interpret the results of the studies (Lamping & Campbell, 1990).

Behavioral indices are also used to assess compliance with prescribed hemodialysis treatments. Behavioral compliance is measured by three indices: percent time compliance, percent attendance, and total time attendance. Percent time compliance reflects shortening behavior, percent attendance reflects skipping behavior, and total time attendance reflect overall compliance (Kimmel et al., 1995a, 1995b; Kimmel et al., 1998; Kobrin et al., 1991; Sherman et al., 1994). In some studies, both biochemical and behavioral measures of compliance were used to assess compliance. However, the results of the studies indicated that biochemical

measures and behavioral measures were not correlated (Kimmel et al., 1995a; Kobrin et al., 1991).

In addition to objective measures, subjective measures are used to assess compliance. Most subjective measures are based on patients' self-report or staff ratings of objective data from medical chart or laboratory results. The major problem with subjective measures is biased reports. Patients tend to report themselves as more compliant than they really are, and staff ratings are affected by patients' personal characteristics (Lamping & Campbell, 1990).

Many studies have been conducted to investigate variables which are affecting compliance, yet there is an inconsistency in the research findings. One of the reasons for inconsistent findings may be the methodological problems in assessing compliance. Hence, this study will be focused to minimize methodological problems, and by doing so, will hope to find better explanations for relationships between compliance and its contributing factors.

Summary

Generally, dialysis patients have to comply with scheduled dialysis treatments, oral medications, dietary restrictions, and fluid restrictions. Compliance with medical recommendations is related to survival, but noncompliance is a major problem in dialysis. Research findings suggest that depression, internal health locus of control, and self-efficacy are associated with compliance. Although coping is not directly associated with compliance, it has been identified as a predictor of quality of life which influences compliance. In addition, there are mixed results regarding social support.

Compliance could be explained by excuse theory. Patients who do not comply with dialysis regimens may blame others or situations for the cause of their illness and may not see themselves as the cause. The lack of a standardized method for defining and measuring compliance may create inconsistencies in the research findings. Hence, this study was conducted by minimizing the methodological problems and would hope to find better explanations for relationships between compliance and its contributing factors.

CHAPTER THREE

METHODS

Introduction

Study design, sampling, data collection and instruments, procedure, protection of human subjects, and data analysis are discussed in Chapter Three.

Study Design

The purpose of this study was to identify contributing factors that influence compliance behaviors among dialysis patients. Previous research findings indicated that biochemical indices of compliance have been widely used to assess compliance even though these indices have problems in setting criteria for a cut-off score. In this study, chemical indices: phosphorus (p), Potassium (K), and Urea Kinetic Modeling (Kt/v) were used to assess medication, dietary, and behavioral compliance. For criteria for cut-off score, National Kidney Foundation Kidney Disease Outcomes Quality initiative (NKF K/DOQI) guidelines were used (NKF K/DOQI, 2001; 2003).

Biochemical indices were calculated on the basis of patients' medical charts. In order to reduce biased

reports, subjective measures, such as staff ratings and patients self-report were excluded. Because it is difficult to assess compliance in hemodialysis (HD) patients and peritoneal dialysis (PD) patients by using the same exact measures and methods, PD patients were excluded in this study. As contributing factors that influence compliance, social support and coping skills were examined by using questionnaires.

A limitation of this study was generalizability. Because this study only focused on HD patients, the results were not generalized to the entire dialysis population. Based on previous study findings, it was hypothesized that patients who have greater social support and greater use of coping skills are more likely to comply with dialysis regimens.

Sampling

Data were collected from hemodialysis patients who come to Gambro Dialysis Center in Upland, California. The sample consisted of 27 patients, including both females and males and a variety of ethnicities. Criteria for inclusion were as follows: patients must have been 18 years of age or older, English or Spanish-speakers, and

have been undergoing hemodialysis treatments more than 3 months. Patients with developmental disabilities, blindness, and psychiatric disorders, such as major depression and anxiety disorder were excluded from this study. Patients who met the criteria were selected and recruited at the dialysis center.

Data Collection and Instruments

In this study, compliance, coping skills and social support were measured. Coping skills and social support were considered independent variables, and compliance was considered a dependent variable. All these variables were measured at interval levels. Demographic items consisted of gender, age, ethnicity, educational background, and duration of dialysis treatment (see Appendix A). Gender and ethnicity were recorded at nominal levels, and age and duration of dialysis treatment was recorded at interval levels. Educational background was recorded at ordinal levels. By using the standardized instruments, quantitative data were collected to assess coping and social support.

Coping was measured with the Characteristics of Coping Strategy Indicator Scales (CSI), which was

developed by Amirkhan (1990). The CSI is a 15-item scale, which assesses general strategies that are employed to cope with stressful events. The scale consists of three subscales: problem solving, seeking support, and avoidance. Ratings are made on 1 to 5 Likert-type scales, ranging from always to not at all (see Appendix B). The CSI score has a potential range of 12 to 84, with higher scores reflect greater use of the coping strategy. The scale has been tested and has revealed good internal consistency, test-retest reliability, and construct validity. Overall, high reliability was reported with alpha of .89 for problem solving, .92 for seeking support, .83 for avoidance.

Multidimensional Scale of Perceived Social Support (MSPSS), which was developed by Zimet, Dahlem, Zimet, and Farley (1988) was used to measure social support. The MSPSS consists of 12 questions which measure social support from three sources: family, friends, and significant others. Each of these subscales consists of four questions, and all questions are scored on a 7-point Likert-type scale, ranging from 1 = very strongly disagree to 7 = very strongly agree (see Appendix B). The potential range of MSPSS scores is 15 to 75, with higher

scores indicating greater social support. The total scale has good internal reliability with an alpha coefficient of .88. Subscales also have reported higher reliability with alphas of .87 for family, .85 for friends, and .91 for the significant others. The MSPSS has been utilized most widely in patients with End-Stage of Renal Disease.

Three biochemical indices: the serum phosphorus (p), the serum potassium (K), Urea Kinetic Modeling (Kt/V) were used to assess patients' compliance with hemodialysis regimens. The serum P levels reflect dietary and medication compliance. According to NKF K/DOQI guidelines, normal levels of P in dialysis patients should not exceed 5.5 mg/dL (NKF K/DOQI, 2003).

The serum K levels also reflect dietary compliance. Baseline levels of K for dialysis patients are equal to or lower than 5.5 mEq/L (NKF K/DOQI, 2003). Both serum P and K have been regarded as the most valid biochemical indices which measure compliance (Kobrin et al., 1991).

In addition, Kt/V refers to adequacy of the hemodialysis treatment. Urea is an end product of protein metabolism and kinetic modeling is the mathematical representation of how much dialysis treatment removed urea in patients. Kt/V has been used to measure

behavioral compliance (Kimmel et al., 1998). A minimum of Kt/V of 1.2 is regarded as standard levels (NKF K/DOQI, 2001). Therefore, those who have equivalent to or lower than P of 5.5 mg/dL and K of 5.5 mEq/L, and equivalent to or higher than Kt/V of 1.2 were considered as compliant.

Procedure

Patients who met the criteria were selected and orally informed about the study by the researcher at the dialysis center, and those who agree to cooperate in the study were given a self-administered questionnaire. In order to obtain informed consent, the cover letter was attached to the questionnaire (see Appendix C). Debriefing statements were also attached on the end of the questionnaire (see Appendix D). Most patients completed the questionnaire individually during dialysis treatment; however, the researcher assisted those who had difficulty in reading or using their hands to fill out the questionnaire. The questionnaire was handed out to the participants in May 6, 2005. In order to obtain compliance data, the medical charts of the participants were reviewed for three consecutive months, between March and May. The results of each measure of compliance in all

participants were averaged over the three months period of time.

Protection of Human Subjects

Data were collected from both the survey and participants' medical charts. All participants were asked to fill out questionnaires regarding social support and coping strategy. The informed consent and debriefing statements were attached to the questionnaire.

Participants were not asked to provide their names or their medical identification numbers for the survey.

However, in order to match the survey data and data from the medical charts, each participant were assigned by an individual numeric code. The code appeared on the survey.

A list which included the code and participants' medical identification numbers was created and was used to distribute the survey and to match the patients' medical charts back to the survey. To protect confidentiality, the list was separated from any other data and was kept in a place which was accessible only to the researcher.

The description of the procedures as stated above was included in the informed consent along with

identification of the researcher and supervisor and the purpose, methods, and duration of the study.

Because risks to participants were minimized by excluding people with psychiatric disorders, it is unlikely that participating in this study would result in any significant distress. However, participants were given the name and telephone number of the facility's social worker who they could contact, in case of experiencing any discomfort or stress as the consequence of participation. They were also informed that participation would be voluntary, and they would be able to withdraw at any time with no penalty.

Data Analysis

Statistical analyses, including univariate, bivariate, and multivariate procedures were used in this study. Specifically, the Pearson Correlation was used to assess correlations among coping, social support, and compliance. Compliance measures, the serum phosphorus, the serum potassium, and Urea Kinetic Modeling levels, were assessed individually, and all scores on each parameter were added to create one interval variable. The correlation was also used to assess compliance, age,

educational background, and duration of dialysis treatment. An independent-samples t-test was used to assess mean differences by gender, marital status, and ethnicity. All data were recorded and analyzed by using SPSS.

Summary

The purpose of this study was to identify contributing factors that influence compliance behaviors among dialysis patients. It was hypothesized that patients who have greater social support and coping skills are more likely to comply with dialysis regimens. Coping skills and social support were considered independent variables, and compliance was considered a dependent variable.

Data were collected from hemodialysis patients who came to Gambro Dialysis Center in Upland, California. Only the patients who met criteria were selected and recruited at the center. A self-administered questionnaire regarding social support and coping were distributed by the researcher at the dialysis center to the patients who agreed to cooperate in the study. The informed consent and debriefing statements were attached

CHAPTER FOUR

RESULTS

Introduction

In Chapter Four, statistical analyses, including univariate and bivariate findings are presented.

Presentation of the Findings

A total of 27 patients participated in the study. The participants consisted of 12 females and 15 males ranging in ages from 33 to 90, with a mean age of 60.48. The marital status of the participants was: married 66.7%, single 14.8%, widowed 7.4%, and divorced 11.1%. Participants had a wide range of ethnic and educational backgrounds. The ethnicities of the participants were: American Indian/Native American 7.4%, Asian, Asian American, or Pacific Islander 7.4%, African American or African 22.2%, Hispanic or Latino/Latina 29.6%, Caucasian or European, not Hispanic 33.3%. The educational backgrounds of the participants were: grade school 7.4%, high school 40.7%, some college 22.2%, college degree 18.2%, undergraduate degree 7.4%, and doctoral degree 3.7%. All participants had a diagnosis of End-Stage Renal Disease and were being treated with hemodialysis. The

mean duration was 31.78 months, ranging from 3 months to 197 months.

Scores on the Multidimensional Scale of Perceived Social Support (MSPSS) and Coping Strategy Indicator Scales (CSI) were obtained for all participants. The mean score of the MSPSS was 69 with a range of 12 to 84 (SD = 20.21), which was comparable to the potential score range in the original study by Zimet et al. (1988). The reliability of the MSPSS was 0.95. The mean of the three scale scores on the CSI was 51.32 with a range of 36 to 69 (SD = 8.52). Compared to the potential score range in the original study by Amirkhan (1990), the score range in this study was concentrated. The reliability of the total CSI scale was 0.76. Compliance was measured based on the serum phosphorus, the serum potassium, and Urea Kinetic Modeling levels. The mean score of total compliance was 2.3 with a range of 1 to 3 (SD = 0.67).

Correlations among compliance, social support (MSPSS), coping (CSI), age, duration of dialysis treatment, and educational background were analyzed by using the Pearson correlation. None of these variables had a significant relationship with compliance. However, there were significant positive relationships between age

and social support ($r = 0.526$, $P = 0.006$) and seeking support ($r = 0.48$, $P = 0.013$). Older patients are more likely than younger patients to seek and receive support from their families and friends. Social support and seeking support were also significantly correlated ($r = 0.457$, $P = 0.022$). Duration of dialysis treatment was negatively correlated with social support ($r = -0.66$, $P = 0.000$) and seeking support ($r = -0.565$, $P = 0.003$). Patients with long-term dialysis reported less seeking support and receiving support. Moreover, age and duration of dialysis treatment had a significant negative relationship ($r = -0.414$, $P = 0.032$).

In addition, a t-test was used to assess the mean differences in compliance by gender, marital status, and ethnic background. Prior to this procedure, marital status and ethnic background were converted into two groups: married/single and majority/minority, respectively. Although there were no differences for gender and marital status, an association that approached significant was found for ethnic background. Caucasians were more likely to comply with dialysis regimens than minority patients ($t = 1.89$, $P < 0.07$, $df = 25$).

Summary

A total of 27 patients participated in the study. 12 of them were females and 15 of them were males, with a mean age of 60.48. The majority of participants were married. Participants had a wide range of ethnic and educational backgrounds. All participants had a diagnosis of End-Stage Renal Disease and were being treated with hemodialysis. The mean duration was 31.78 months.

Correlations among compliance, social support (MSPSS), coping (CSI), age, years of dialysis treatment, and educational background were analyzed by using the Pearson correlation. None of these variables had a significant relationship with compliance. However, it was found that older patients are more likely than younger patients to seek support and receive support from their families and friends. In contrast, patients with long-term dialysis reported less seeking support and receiving support. It was also found that Caucasians were more likely to comply with dialysis regimen than minority.

CHAPTER FIVE

DISCUSSION

Introduction

Discussion, limitations, recommendations for social work practice, policy and research of the study, and conclusions are presented in Chapter Five.

Discussion

One objective of the present study was to examine how social support and coping styles influence compliance among hemodialysis patients. Social support was measured with the Multidimensional Scale of Perceived Social Support (MSPSS), and the Characteristics of Coping Strategy Indicator Scales was used to measure patients coping preference. In order to assess compliance, serum phosphorus (P), serum potassium (K), and Urea Kinetic Modeling (Kt/V) were used.

Patients with greater social support and greater use of coping skills were predicted to be more compliant with their dialysis regimens, yet support was not found for the hypothesis. These findings were consistent with the work of Christensen et al. (1992). They reported no significant relationship between social support and

dietary compliance (Christensen et al., 1992). It has been suggested that the serum P and K may be affected by other factors unrelated to dietary compliance (Kimmel et al., 1995b; Korbin et al., 1991). Moreover, Kt/V was also found to have no correlation with social support (Kimmel et al., 1998). Although shortened dialysis lowers Kt/V, other factors including access problems, needle problems, catheter problems, inadequate blood flows, clotting of dialysis fibers, and dialyzer leaks may result in Kt/V falling below the recommended levels (NKF K/DOQI, 2001).

Coping and compliance also were not correlated in the study. These findings were comparable with the study conducted by Christensen et al. (1992). They examined associations among the serum P, K, and coping, but they found no association between P and coping. However, they reported that hemodialysis patients with greater information vigilance had significantly higher serum K values, which indicated poor dietary compliance (Christensen et al., 1992).

Although it was not predicted, results of this study indicated that older patients are more likely than younger patients to seek support and receive social support. The reason may be that older adults need more

assistance due to increasing severity of illness and decreasing functional capacity (Kimmel et al., 1995a). In contrast, patients with long-term dialysis reported less seeking and receiving support. In this study, younger patients had longer dialysis experiences than older patients. This finding suggests that as the duration of dialysis treatment gets longer, patients who are relatively younger and have better functional capacities are able to cope with difficulties which come with dialysis treatment and live independently without seeking or receiving support from other people.

In addition, it was also found that Caucasians were more likely to comply with dialysis regimens than other ethnic minorities. There was inconsistency in research findings regarding an association between race and compliance, yet the present research finding supported the result which was reported by Leggat et al. (1998). They found that Caucasians were less likely than African Americans to skip sessions.

Limitations

The present study had some limitations. Because the study had a small sample size and excluded peritoneal

dialysis patients, there was a concern that the results may not be applicable to all Patients with End-Stage Renal Disease. The study had been conducted by using some traditional objective measures of compliance, such as serum P, K, and Kt/V, yet as many studies reported, these parameters may be influenced by factors other than patients' compliance behavior (Christensen et al., 1992; Kimmel et al., 1995b; Kimmel et al., 1998; Kobrin et al., 1991). Moreover, although Kt/V levels reflect skipping and shortening behaviors, it does not tell how much skipping and shortening dialysis treatment lower Kt/V.

Another possibility was biased reporting. Social support and coping were measured based on a self-reporting survey, there was possibility that participants reported as they would like to be rather than as they really are. Thus, avoidance coping, one of the coping subscales may not be suitable for dialysis patients. One statement for avoidance coping was "I watch television more than usual," and more than 40 percent of the participants marked "frequently" or "always." One participant pointed out that people who are older or have limited physical function do watch television more than people who are healthier and younger because they do not

have a lot of things to do. Even though patients watch television more than usual after they were diagnosed with ESRD, it may not mean that they use an avoidance coping style.

Another statement of avoidance coping was "I daydream about better times," and the majority of the participants marked "frequently" or "always." Participants in this study were much older than the general population, so it is not surprising that older people daydream about better times. In addition, the overall reliability of avoidance coping scale in this study was relatively low, .47, compared to .839 in the original study by Amirkhan (1990). These findings suggest increasing sample size, modification of present scales, or developing new scales which measure compliance and psychological variables for dialysis patients.

Recommendations for Social Work Practice, Policy and Research

Because higher levels of compliance increase survival rate, it is important for social workers to encourage patients to comply with treatment regimens. Bordelon (2002) introduces DAVE, an intervention model which focuses on empowerment by developing the

collaboration relationship between social workers and patients. DAVE represents Dialogue, Acceptance, Validation, and Enactment. It encourages social workers to "engage in [d]ialogue with dialysis recipients about choices, [a]ccept the attitudes, beliefs, and values of renal recipients, [v]alidate recipient's concerns and emotional reactions, and [e]nact a plan with recipients as partners to resolve problems in making treatment choices" (Bordelon, 2002, p 36). Through communication with social workers, patients are able to understand the conditions of their health, to find and use their strengths to overcome difficulties in treatment, and ultimately to make decisions to comply with treatment regimens.

According to Clinical Indicators for Social Work and Psychological Services In Nephrology Setting (1994, as cited in Bordelon, 2002), social workers have ultimate missions to support and help to increase patients' psychological functioning and adjustment to treatment. Social workers are also responsible for developing policies that respect "the individuality, independence, and choice of each patients" (Clinical Indicators for Social Work and Psychological Services In Nephrology

Setting, 1994 as cited in Bordelon, 2002). As Bordelon implies, although compliance with treatment is mandated in dialysis facilities, social workers should not enforce patient compliance, but rather they should devote their energies to develop policies which reflect patients' empowerment.

Although associations among compliance, social support, and coping strategies were examined, no significant relationships were found among these variables. Biochemical indices are regarded as traditional objective measures of compliance and were used to assess compliance in this study. However, these indices seemed to be affected by multiple variables unrelated to compliance. It seemed that this methodological problem in assessing compliance made it hard to find a better explanation for associations between compliance and its contributing factors.

In addition to traditional measures of compliance, some researchers used interdialytic weight gain (IWG) and behavioral indices. IWG is used to assess fluid compliance, and behavioral indices assess skipping and shortening behaviors. Since measuring fluid intake and skipping and shortening dialysis sessions can control

influences of other variables, IWG and behavioral indices might be good methods to assess compliance.

Furthermore, this study focused mainly on dietary and medication compliance among hemodialysis patients. Dietary and medication compliance could be influenced by patients' socioeconomic status, food cultures, and insurance status. As O'Brien (1990) stated, patients with lower socioeconomic status may be noncompliant with dietary regimens because they cannot afford to purchase recommended foods for a special renal diet.

Patients' food culture might also affect their dietary compliance. Dietary compliance has been seen as the most difficult part of dialysis regimens because food provides pleasures and satisfaction for human beings, (O'Brien, 1990). Patients have to limit intake of phosphorus-rich foods, such as dairy products, beans, and liver/organ meats. They also need to avoid high potassium foods, such as fruits, beans, corns, tomato, and avocados. However, some ethnic groups eat these types of food more often than other ethnic groups, so it must be much more difficult for these patients to resist these phosphorus- and potassium-rich foods and ultimately change their eating habits.

In addition, insurance status might affect patients' medication compliance. Although the majority of dialysis patient have Medicare and Medicaid that pay for their treatment and prescription drugs, there are some patients who cannot qualify for Medicaid, but they cannot afford private insurance which has prescription coverage. These patients often have trouble in purchasing prescribed medications. These patients may not comply with the medication regimens because they do not have enough money to purchase these medications.

Although social support and effective coping with this chronic illness were believed to be important variables which influence compliance, it seemed that compliance was affected by multiple variables in a more complex manner than that was merely affected by social support and patients' coping styles. Therefore, future research should be conducted to include using IWG and behavioral measures of compliance and other social and psychological variables, and examining interactional patterns of these variables.

Conclusion

Kidney disease is an epidemic in the United States. Although kidney disease is treatable with dialysis, it requires major adjustments in lifestyle changes. Therefore, noncompliance is common, and it is also a major problem in dialysis regimens. The purpose of this study was to investigate relationships among compliance, coping, and social support. However, no significant relationships were found among these variables. One weakness of this study appeared to be methodological problems in assessing compliance and psychological variables. It was also assumed that the interaction among multiple variables causes noncompliance.

What is needed to discover and treat noncompliance patients may be an individual care plan. Each patient has different values, beliefs, cultural backgrounds, and concerns about dialysis treatment. Working with the interdisciplinary team, social workers need to have priority in communicating with patients and give them a chance to express their preferences regarding the treatment. By doing so, social workers are able to create a care plan which works best for each individual. When patients actively participate in treatment decisions,

compliance with the treatment will be more meaningful for them.

APPENDIX A
DEMOGRAPHICS

Demographic Items

Please circle the appropriate answer or fill in the space provided as carefully and accurately as you can.

1. How long have you been in dialysis treatment?
_____ years and _____ months
2. What is your ethnicity?
 - (1) American Indian/Native American
 - (2) Asian, Asian American, Asian-Pacific, or Pacific Islander
 - (3) African American, African
 - (4) Hispanic or Latino/Latina
 - (5) Middle Eastern
 - (6) Caucasian, European, not Hispanic
 - (7) Other (please specify): _____
3. What is your marital status?
 - (1) Married
 - (2) Single
 - (3) Widow
 - (4) Divorced
 - (5) Separated
4. What is your educational background?
 - (1) High school graduate
 - (2) Some college
 - (3) College degree
 - (4) Undergraduate degree
 - (5) Graduate degree
 - (6) Other (please specify): _____
5. What is your gender?
 - (1) Male
 - (2) Female
6. What is your age? _____

Artículos demográficos

Rodee por favor la respuesta apropiada o llene el espacio proporcionado como con cuidado y exactamente como usted puede.

1. ¿Cuán largo le tenido estuvo en el tratamiento del diálisis?
_____ años y _____ months
2. ¿Qué es su etnia?
 - (1) El asiático indio Americano del Indio Americano
 - (2) El asiático, Americano asiático, el asiático Pacífico, o Isleño Pacífico
 - (3) El Americano africano, el africano
 - (4) El hispano o Latina
 - (5) Medio-oriental
 - (6) El Caucásico, el europeo, no hispano
 - (7) Otro (especifica por favor) : _____
3. ¿Qué es su estado civil?
 - (1) Se Casó
 - (2) Viuda
 - (3) Sola a
 - (4) Divorció
 - (5) Separó
4. ¿Qué es su fondo educativo?
 - (1) El bachiller
 - (2) Algún colegio
 - (3) el grado Colegial
 - (4) el grado no graduado
 - (5) el grado Graduado
 - (6) Otro (especifica por favor) : _____
5. ¿Qué es su género?
 - (1) Masculino,
 - (2) la Hembra
6. ¿Qué es su edad? _____

APPENDIX B
QUESTIONNAIRE

o

Multidimensional Scale of Perceived Social Support

This is a questionnaire about your relationships with your family and friends, which includes a variety of statements that describe your relationships with them. Please indicate how much you agree or disagree with each statement as being true, and circle the number that best describes you. Please make sure that you answer every item and that you record only one number per item. There are no right or wrong answers, so please answer as honestly as you can.

1. There is a special person who is around when I am in need.

Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree
1	2	3	4	5	6	7

2. There is a special person with whom I can share my joys and sorrows.

Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree
1	2	3	4	5	6	7

3. My family really tries to help me.

Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree
1	2	3	4	5	6	7

4. I get the emotional help and support I need from my family.

Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree
1	2	3	4	5	6	7

5. I have a special person who is a real source of comfort to me.

Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree
1	2	3	4	5	6	7

6. My friends really try to help me.

Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree
1	2	3	4	5	6	7

7. I can count on my friends when things go wrong.

Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree
1	2	3	4	5	6	7

8. I can talk about my problems with my family.

Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree
1	2	3	4	5	6	7

9. I have friends with whom I can share my joys and sorrows.

Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree
1	2	3	4	5	6	7

10. There is a special person in my life who cares about my feelings.

Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree
1	2	3	4	5	6	7

11. My family is willing to help me to make decisions.

Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree
1	2	3	4	5	6	7

12. I can talk about my problems with my friends.

Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree
1	2	3	4	5	6	7

The Coping Strategy Indicator

Below is a list of statement that describes some styles of coping strategies. By using the following five-point scale, please rate how each statement describes your style of coping strategies. For each statement, please circle the number that best describe your style.

1. I try to solve the problem.

Not at all	Rarely	Sometimes	Frequently	Always
1	2	3	4	5

2. I try to carefully plan a course of action rather than acting on impulse.

Not at all	Rarely	Sometimes	Frequently	Always
1	2	3	4	5

3. I brainstorm all possible solutions before deciding what to do.

Not at all	Rarely	Sometimes	Frequently	Always
1	2	3	4	5

4. I set some goals for myself to deal with the situation.

Not at all	Rarely	Sometimes	Frequently	Always
1	2	3	4	5

5. I try different ways to solve the problems until I find one that work.

Not at all	Rarely	Sometimes	Frequently	Always
1	2	3	4	5

6. I confide my fears and worries to a friend or relative.

Not at all	Rarely	Sometimes	Frequently	Always
1	2	3	4	5

7. I seek reassurance from those who know me best.

Not at all	Rarely	Sometimes	Frequently	Always
1	2	3	4	5

8. I talk to people about the situation because taking about it helps me to feel better.

Not at all	Rarely	Sometimes	Frequently	Always
1	2	3	4	5

9. I accept sympathy and understanding from friends who has the same problem.

Not at all	Rarely	Sometimes	Frequently	Always
1	2	3	4	5

10. I go to a friend for advice on how to change the situation.

Not at all	Rarely	Sometimes	Frequently	Always
1	2	3	4	5

11. I avoid being with people in general.

Not at all	Rarely	Sometimes	Frequently	Always
1	2	3	4	5

12. I daydream about better times.

Not at all	Rarely	Sometimes	Frequently	Always
1	2	3	4	5

13. I wish that people would just leave me alone.

Not at all	Rarely	Sometimes	Frequently	Always
1	2	3	4	5

14. I identify with characters in novels or movies.

Not at all	Rarely	Sometimes	Frequently	Always
1	2	3	4	5

15. I watch television more than usual.

Not at all	Rarely	Sometimes	Frequently	Always
1	2	3	4	5

La Escala multidimensional de Apoyo Social Percibido

Esto es un cuestionario acerca de sus relaciones con su familia y amigos, que incluye una variedad de las declaraciones que describen sus relaciones con ellos. Indique por favor cuánto usted concuerda o disiente de cada declaración es como verdad, y rodea el número que mejor le describe. Cerciórese por favor que usted contesta cada artículo y que usted registra sólo un número por artículo. No hay las respuestas del derecho ni la injusticia, así que contesta por favor tan honestamente como que usted puede.

1. Hay una persona especial que está alrededor de cuando soy necesitado.

No convenga	No convenga	No convenga	Ni concuerda	Concuerde	Concuerde	Concuerda
<u>Totalmente</u>	<u>moderadamente</u>	<u>levemente</u>	<u>ni no conviene</u>	<u>levemente</u>	<u>moderadamente</u>	<u>totalmente</u>
1	2	3	4	5	6	7

2. Hay una persona especial con quien puedo compartir mis alegrías y las penas.

No convenga	No convenga	No convenga	Ni concuerda	Concuerde	Concuerde	Concuerda
<u>Totalmente</u>	<u>moderadamente</u>	<u>levemente</u>	<u>ni no conviene</u>	<u>levemente</u>	<u>moderadamente</u>	<u>totalmente</u>
1	2	3	4	5	6	7

3. Mi familia trata realmente ayudarme.

No convenga	No convenga	No convenga	Ni concuerda	Concuerde	Concuerde	Concuerda
<u>Totalmente</u>	<u>moderadamente</u>	<u>levemente</u>	<u>ni no conviene</u>	<u>levemente</u>	<u>moderadamente</u>	<u>totalmente</u>
1	2	3	4	5	6	7

4. Obtengo la ayuda emocional y sostengo necesito de mi familia.

No convenga	No convenga	No convenga	Ni concuerda	Concuerde	Concuerde	Concuerda
<u>Totalmente</u>	<u>moderadamente</u>	<u>levemente</u>	<u>ni no conviene</u>	<u>levemente</u>	<u>moderadamente</u>	<u>totalmente</u>
1	2	3	4	5	6	7

5. Tengo a una persona especial que es una fuente verdadera del consuelo a mí.

No convenga	No convenga	No convenga	Ni concuerda	Concuerde	Concuerde	Concuerda
<u>Totalmente</u>	<u>moderadamente</u>	<u>levemente</u>	<u>ni no conviene</u>	<u>levemente</u>	<u>moderadamente</u>	<u>totalmente</u>
1	2	3	4	5	6	7

6. Mis amigos tratan realmente ayudarme.

No convenga	No convenga	No convenga	Ni concuerda	Concuerde	Concuerde	Concuerda
<u>Totalmente</u>	<u>moderadamente</u>	<u>levemente</u>	<u>ni no conviene</u>	<u>levemente</u>	<u>moderadamente</u>	<u>totalmente</u>
1	2	3	4	5	6	7

7. Puedo contar con mis amigos cuando las cosas fallan.

No convenga	No convenga	No convenga	Ni concuerda	Concuerde	Concuerde	Concuerda
Totalmente	moderadamente	levemente	ni no conviene	levemente	moderadamente	totalmente
1	2	3	4	5	6	7

8. Puedo hablar acerca de mis problemas con mi familia.

No convenga	No convenga	No convenga	Ni concuerda	Concuerde	Concuerde	Concuerda
Totalmente	moderadamente	levemente	ni no conviene	levemente	moderadamente	totalmente
1	2	3	4	5	6	7

9. Tengo a amigos con quien puedo compartir mis alegrías y las penas.

No convenga	No convenga	No convenga	Ni concuerda	Concuerde	Concuerde	Concuerda
Totalmente	moderadamente	levemente	ni no conviene	levemente	moderadamente	totalmente
1	2	3	4	5	6	7

10. Hay una persona especial en mi vida que tiene interés en mis sentimientos.

No convenga	No convenga	No convenga	Ni concuerda	Concuerde	Concuerde	Concuerda
Totalmente	moderadamente	levemente	ni no conviene	levemente	moderadamente	totalmente
1	2	3	4	5	6	7

11. Mi familia está dispuesta a ayudarme hacer las decisiones.

No convenga	No convenga	No convenga	Ni concuerda	Concuerde	Concuerde	Concuerda
Totalmente	moderadamente	levemente	ni no conviene	levemente	moderadamente	totalmente
1	2	3	4	5	6	7

12. Puedo hablar acerca de mis problemas con mis amigos.

No convenga	No convenga	No convenga	Ni concuerda	Concuerde	Concuerde	Concuerda
Totalmente	moderadamente	levemente	ni no conviene	levemente	moderadamente	totalmente
1	2	3	4	5	6	7

El Indicador de la Estrategia que se Enfrenta

Debajo de es una lista de la declaración que describe algunos estilos de enfrentar las estrategias. Utilizando la escala del cinco-punto de siguiente, valora por favor cómo cada declaración describe su estilo de enfrentar las estrategias. Para cada declaración, rodea por favor el número que describe mejor su estilo.

1. Trato de resolver el problema.

Nada en absoluto	Raramente	A veces	Con frecuencia	Siempre
1	2	3	4	5

2. Trato de planear con cuidado un línea de acción antes que actuando sobre el impulso.

Nada en absoluto	Raramente	A veces	Con frecuencia	Siempre
1	2	3	4	5

3. Pongo en común todas soluciones posibles antes decidir lo que hacer.

Nada en absoluto	Raramente	A veces	Con frecuencia	Siempre
1	2	3	4	5

4. Puse algunas metas para yo mismo tratar con la situación.

Nada en absoluto	Raramente	A veces	Con frecuencia	Siempre
1	2	3	4	5

5. Trato las maneras diferentes de resolver los problemas hasta que encontrara uno que trabajó.

Nada en absoluto	Raramente	A veces	Con frecuencia	Siempre
1	2	3	4	5

6. Confío mis temores y las preocupaciones a un amigo o el pariente.

Nada en absoluto	Raramente	A veces	Con frecuencia	Siempre
1	2	3	4	5

7. Busco la tranquilidad de los que mí saben mejor.

Nada en absoluto	Raramente	A veces	Con frecuencia	Siempre
1	2	3	4	5

8. Hablo a personas acerca de la situación porque tomando acerca de lo mí ayuda a sentirme mejor

<u>Nada en absolute</u>	<u>Raramente</u>	<u>A veces</u>	<u>Con frecuencia</u>	<u>Siempre</u>
1	2	3	4	5

9. Acepto la simpatía y understading de amigos que tuvieron el mismo problema.

<u>Nada en absolute</u>	<u>Raramente</u>	<u>A veces</u>	<u>Con frecuencia</u>	<u>Siempre</u>
1	2	3	4	5

10. Voy a un amigo para el consejo en cómo cambiar la situación.

<u>Nada en absolute</u>	<u>Raramente</u>	<u>A veces</u>	<u>Con frecuencia</u>	<u>Siempre</u>
1	2	3	4	5

11. Evito está con personas en general.

<u>Nada en absolute</u>	<u>Raramente</u>	<u>A veces</u>	<u>Con frecuencia</u>	<u>Siempre</u>
1	2	3	4	5

12. Soueno despierto acerca de mejores tiempos.

<u>Nada en absolute</u>	<u>Raramente</u>	<u>A veces</u>	<u>Con frecuencia</u>	<u>Siempre</u>
1	2	3	4	5

13. Deseo que personas apenas mí salgan sólo.

<u>Nada en absolute</u>	<u>Raramente</u>	<u>A veces</u>	<u>Con frecuencia</u>	<u>Siempre</u>
1	2	3	4	5

14. Identifico con caracteres en novelas o películas.

<u>Nada en absolute</u>	<u>Raramente</u>	<u>A veces</u>	<u>Con frecuencia</u>	<u>Siempre</u>
1	2	3	4	5

15. Miro la televisión más que usual.

<u>Nada en absolute</u>	<u>Raramente</u>	<u>A veces</u>	<u>Con frecuencia</u>	<u>Siempre</u>
1	2	3	4	5

APPENDIX C
INFORMED CONSENT

Informed Consent

The study in which you are being asked to participate is designed to investigate relationships among social support, coping strategy, and behavioral compliance with hemodialysis regimens. This study is being conducted by Toyoko Yagi under the supervision of Rosemary McCaslin, Ph.D., A.C.S.W., Professor of Social Work at California State University San Bernardino. This study has been approved by the Department of Social Work Subcommittee of the Institutional Review Board, California State University San Bernardino.

In this study, you will be asked to respond to several statements regarding your coping styles and relationships with your family and friends. The questionnaires should take about 15 to 30 minutes to complete. Your name will not be reported with your responses. You are also asked to permit the researcher to review your medical chart and obtain data on the number of dialysis sessions and length of the sessions that you attended compared with the number of prescribed sessions and times. In order to match your questionnaire responses to the data from your medical chart, you will be assigned an individual numeric code. The code appears on the questionnaire. All of your responses and data from your medical chart will be held in the strictest of confidence by the researcher. All data will be reported in group form only.

Your participation in this study is totally voluntary. You are free not to answer any questions and to withdraw at any time during this study without penalty, and remove any data at any time during this study. When you have completed the questionnaire, you will receive a debriefing statement describing the study in more detail. In order to ensure to validity of the study, we ask that you not discuss this study with other participants.

Please be assured that the study is not expected be harmful. However, if you experience psychological distress as a consequence of participation in the study, please contact Paula Ferro, BSW at 951-464-0347, or if you have any questions about the research, including your rights as a research subject, please contact Dr. Rosemary McCaslin at 909-880-5507.

By placing a check mark in the space below, I acknowledge that I have been informed of, and I understand, the nature and purpose of this study, and I freely consent to participate. I also acknowledge that I am at least 18 years of age.

Place a check mark here: _____ Today's date: _____

I give permission for the information described above to be taken from my medical charts.

Place a check mark here: _____ Today's date: _____

Consentimiento informado

El estudio en el que usted es pedido tomar parte en es diseñado para investigar las relaciones entre apoyo social, enfrentándose la estrategia, y la conformidad conductista con réyginenes de diálisis. Este estudio es realizado por Toyoko Yagi bajo la supervisión de Rosemary McCaslin, Ph.D., A.C.S.W., el Profesor de la asistencia social en Universidad Pública de California San Bernardino. Este estudio ha sido aprobado por el Departamento de la Subcomisión de la asistencia social de la Tabla Institucional de la Revisión, Universidad Pública de California San Bernardino.

En este estudio, usted será pedido responder a varias declaraciones con respecto a sus estilos que se enfrentan y las relaciones con su familia y amigos. Los cuestionarios deben tomar acerca de 15 a 30 minutos de completar. Su nombre no se informará con sus respuestas. Usted es pedido también permitir que el investigador para revisar su gráfico médico y obtener los datos en el número de sesiones de diálisis y longitud de las sesiones que usted asistió comparado con el número de sesiones y tiempos prescritos. Para emparejar sus respuestas de cuestionario a los datos de su gráfico médico, usted será asignado un código numérico individual. El código aparece en el cuestionario. Todas sus respuestas y los datos de su gráfico médico se tendrán en el más estricto de la confianza por el investigador. Todos datos se informarán en la forma del grupo sólo.

Su participación en este estudio es totalmente voluntaria. Usted es libre no contestar que cualquiera pregunta y para retirar en tiempo durante este estudio sin pena, y quitar ningún datos en tiempo durante este estudio. Cuando usted ha completado el cuestionario, usted recibirá una declaración de interrogatorio que describe el estudio en más detalle. Para asegurar a la validez del estudio, nosotros preguntamos que usted no discute este estudio con otros participantes.

Sea asegurado por favor que el estudio no se espera es perjudicial. Sin embargo, si usted experimenta la pena psicológica como resultado de participación en el estudio, por favor contacto Paula Ferro, BSW en 951-464-0347 si usted tiene cualquiera pregunta acerca de la investigación, inclusive sus derechos como un sujeto de investigación, contacta por favor a Dr. Rosemary McCaslin en 909-880-5507.

Colocando una marca en el espacio abajo, yo reconozco que he sido informado de, y entiendo, la naturaleza y el propósito de este estudio, y de consiento libremente participar. Reconozco también que soy por lo menos 18 años de la edad.

Coloque una marca aquí: _____ Hoy'la fecha de s: _____

Doy el permiso para la información descrita encima de ser tomado de mis gráficos médicos.

Por favor una marca aquí: _____ Hoy'la fecha de s: _____

APPENDIX D
DEBRIEFING STATEMENT

Debriefing Statement

Thank you for participating in this study and for not discussing the contents of the questionnaires with other participants. The study you have just completed was designed to investigate relationships among social support, coping strategies, and behavioral compliance with hemodialysis regimens. This study is being conducted by Toyoko Yagi under the supervision of Rosemary McCaslin, Ph.D., A.C.S.W., Professor of Social Work at California State University San Bernardino. We are particularly interested in how the patients' relationships with their families and friends and their style of coping strategies influence compliance with dialysis regimens.

It is unlikely that participating in this study will result in any significant distress. However, if you feel you are experiencing any discomfort or stress due to your participation, please contact Paula Ferro, BSW at 951-464-0347.

We anticipate the group results of the study will be available at the end of Fall Quarter of 2005 in Pfau Library at California State University San Bernardino. If you have questions or concerns about this study, please contact Dr. McCaslin at 909-880-5507. Your participation in this study is greatly appreciated.

Declaración de interrogatorio

Gracias para tomar parte en este estudio y para no discutir el contenido de los cuestionarios con otros participantes. El estudio que usted acaba de completar se diseñó para investigar las relaciones entre apoyo social, enfrentándose las estrategias, y la conformidad conductista con réyģimenes de diálisis. Este estudio es realizado por Toyoko Yagi bajo la supervisión de Rosemary McCaslin, Ph.D., A.C.S.W., el Profesor de la asistencia social en Universidad Pública de California San Bernardino. Somos interesados especialmente en cómo los pacientes' las relaciones con sus familias y amigos y con su estilo de enfrentar las estrategias influyen la conformidad con réyģimenes de diálisis.

Es improbable que tomando parte en este estudio tendrá como resultado alguna pena significativa. Sin embargo, si usted se siente que usted experimenta cualquier molestia o enfatiza debido a su participación, por favor contacto Paula Ferro, BSW en 951-464-0347.

Anticipamos los resultados del grupo del estudio estarán disponible a fines del Cuarto de la Caída de 2005 en la Biblioteca de Pfau en Universidad Pública de California San Bernardino. Si usted tiene las preguntas o concierne acerca de este estudio, contacta por favor Dr. McCaslin en 909-880-5507. Su participación en este estudio se aprecia mucho.

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