INFLUENCE OF PSYCHOSOCIAL FACTORS ON ADJUSTMENT TO CONTINUOUS AMBULATORY PERITONEAL DIALYSIS

by

Alice Anne Whittaker

A Thesis Submitted to the Faculty of the
COLLEGE OF NURSING
In partial Fulfillment of the Requirements
For the Degree of
MASTER OF SCIENCE
In the Graduate College
THE UNIVERSITY OF ARIZONA

1983

Copyright 1983 by Alice Anne Whittaker
STATEMENT BY AUTHOR

This thesis has been submitted in partial fulfillment of requirements for an advanced degree at The University of Arizona and is deposited in the University Library to be made available to borrowers under rules of the Library.

Brief quotations from this thesis are allowable without special permission, provided that accurate acknowledgment of source is made. Requests for permission for extended quotation from or reproduction of this manuscript in whole or in part may be granted by the copyright holder.

SIGNED: [Signature]

APPROVAL BY THESIS DIRECTOR

This thesis has been approved on the date shown below:

Joyce A. Verran

July 25, 1983
DEDICATION

This work is lovingly dedicated to Olga and James F. Whittaker who encouraged their daughter to achieve her potential.

"Study to show thyself approved unto God, a workman that needeth not be ashamed, rightly dividing the word of truth." II Timothy 2:15
ACKNOWLEDGMENTS

The investigator wishes to express sincere gratitude to Dr. Joyce Verran for her guidance and encouragement to explore new ideas from a variety of perspectives. To Dr. Carolyn Murdaugh and Dr. Mary MacKinnon, I extend my appreciation for the support and invaluable insight which strengthened this thesis immeasurably. I am indebted to the staff and patients of the Artificial Kidney Centers for their assistance and cooperation.

Finally, a very special thank you is given to my husband, Charles P. Eck, for his love, prayers and editorial support during this academic endeavor.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF TABLES</td>
<td>viii</td>
</tr>
<tr>
<td>LIST OF ILLUSTRATIONS</td>
<td>ix</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td></td>
</tr>
<tr>
<td>1. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Psychosocial Factors as Determinants of</td>
<td></td>
</tr>
<tr>
<td>Outcome in Chronic Illness</td>
<td>1</td>
</tr>
<tr>
<td>Psychosocial Factors as Determinants of</td>
<td></td>
</tr>
<tr>
<td>Outcome in Continuous Ambulatory Peritoneal Dialysis</td>
<td>2</td>
</tr>
<tr>
<td>Statement of the Problem</td>
<td>3</td>
</tr>
<tr>
<td>Significance of the Problem</td>
<td>4</td>
</tr>
<tr>
<td>Purpose of the Study</td>
<td>6</td>
</tr>
<tr>
<td>Summary</td>
<td>6</td>
</tr>
<tr>
<td>2. CONCEPTUAL FRAMEWORK</td>
<td>8</td>
</tr>
<tr>
<td>Relationship Between Personal Factors and Adjustment</td>
<td>11</td>
</tr>
<tr>
<td>Relationship Between Illness Factors and Adjustment</td>
<td>14</td>
</tr>
<tr>
<td>Relationship Between Social Factors and Adjustment</td>
<td>16</td>
</tr>
<tr>
<td>The Construct of Adjustment to CAPD</td>
<td>17</td>
</tr>
<tr>
<td>Conceptual Level</td>
<td>19</td>
</tr>
<tr>
<td>Summary</td>
<td>20</td>
</tr>
<tr>
<td>3. METHODOLOGY</td>
<td>21</td>
</tr>
<tr>
<td>Design</td>
<td>21</td>
</tr>
<tr>
<td>Setting</td>
<td>21</td>
</tr>
<tr>
<td>Sample</td>
<td>22</td>
</tr>
<tr>
<td>Protection of Human Subjects</td>
<td>22</td>
</tr>
<tr>
<td>Data Collection Instruments</td>
<td>23</td>
</tr>
<tr>
<td>Method of Data Collection</td>
<td>29</td>
</tr>
<tr>
<td>Analysis of Data</td>
<td>29</td>
</tr>
<tr>
<td>Summary</td>
<td>32</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>4. RESULTS</td>
<td>33</td>
</tr>
<tr>
<td>Comparison of the Patient Group</td>
<td>33</td>
</tr>
<tr>
<td>Comparison of Psychosocial and Adjustment Variables Between Adjusted and Nonadjusted Patient Groups</td>
<td>37</td>
</tr>
<tr>
<td>Summary</td>
<td>43</td>
</tr>
<tr>
<td>5. DISCUSSION OF FINDINGS</td>
<td>44</td>
</tr>
<tr>
<td>Findings Related to Program Continuation</td>
<td>44</td>
</tr>
<tr>
<td>Findings Related to Albumin Level</td>
<td>45</td>
</tr>
<tr>
<td>Findings Related to Peritonitis</td>
<td>45</td>
</tr>
<tr>
<td>Findings Related to the Composite Adjustment Measure</td>
<td>47</td>
</tr>
<tr>
<td>Implications for Nursing</td>
<td>48</td>
</tr>
<tr>
<td>Recommendations for Further Investigation</td>
<td>51</td>
</tr>
<tr>
<td>Conclusions</td>
<td>52</td>
</tr>
<tr>
<td>APPENDIX A</td>
<td>53</td>
</tr>
<tr>
<td>APPENDIX B</td>
<td>54</td>
</tr>
<tr>
<td>APPENDIX C</td>
<td>55</td>
</tr>
<tr>
<td>APPENDIX D</td>
<td>56</td>
</tr>
<tr>
<td>APPENDIX E</td>
<td>57</td>
</tr>
<tr>
<td>APPENDIX F</td>
<td>66</td>
</tr>
<tr>
<td>LIST OF REFERENCES</td>
<td>67</td>
</tr>
</tbody>
</table>
1. Concepts and Their Measuring Instruments .................................................. 24
2. Characteristics Measured by the 16-PF Questionnaire ................................. 26
3. Comparison of the Age and Prior Hemodialysis Experience of the CAPD Patient Group .................................................. 34
4. Comparison of the Sex and Ethnic Origin of the CAPD Patient Group ............... 35
5. Comparison of Adjustment Data ..................................................................... 36
6. Means and Standard Deviations (in parenthesis) on Psychosocial Variables for the Adjusted and Nonadjusted CAPD Patients Based Upon Adjustment Measures ............................................. 38
7. Standardized Discriminant Function Coefficients for Adjustment to CAPD Measures .................................................. 40
8. Regression Analysis of the Composite CAPD Adjustment Score ....................... 42
# LIST OF ILLUSTRATIONS

<table>
<thead>
<tr>
<th>Illustration</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Indirect Relationship of Patient Factors with Adjustment</td>
<td>9</td>
</tr>
<tr>
<td>2. Direct Relationship of Patient Factors with Adjustment: Construct and Conceptual Levels</td>
<td>12</td>
</tr>
</tbody>
</table>
ABSTRACT

A descriptive study was conducted to identify psychosocial factors which discriminate between patients who adjust to Continuous Ambulatory Peritoneal Dialysis and patients who do not adjust. Understanding the specific psychosocial factors that foster nonadjustment provides a rational basis for nursing interventions directed toward helping the patient cope with the stress associated with dialysis.

Twenty five adult CAPD patients completed the 16-PF Questionnaire and the Family Cohesion Subscale. With study subjects classified as adjusted or nonadjusted on the variables of continuation in the program, incidence of peritonitis and serum albumin level, the responses and demographic data were analyzed using a discriminant analysis procedure. Data analysis revealed each of the adjustment variables to be predicted by a different subset of independent variables. Lack of consensus between the three adjustment measures may indicate that psychosocial factors often associated with adherence to the medical regimen may not be those which facilitate long term adjustment to dialysis.
CHAPTER 1

INTRODUCTION

The purpose of this research was to investigate the influence of psychosocial factors on patient adjustment to Continuous Ambulatory Peritoneal Dialysis (CAPD). This chapter provides an overview of the literature on the influence of psychosocial factors as determinants of adjustment in chronic illness, and introduces the significance of the problem to be studied.

Psychosocial Factors as Determinants of Outcome in Chronic Illness

The relationship between mind and body in the development, course and outcome of disease processes has long intrigued science. Certain factors such as personality, cognitive ability, emotional state and social environment have been proposed to interact with illness-related factors to affect the individual's perception and coping skills as well as determining the success or failure in adjustment to the treatment program (Lipowski, 1970, 1977).

Psychosomatic literature reveals a concern for the predictive usefulness of certain patient factors. Some authors have described enduring interpersonal and psychological tendencies which result in distinctive patterns of cognitive, emotional, behavioral, and physiological responses (Lipowski, 1977; Millon et al., 1981; Teiramaa, 1981). Moos (1977) has identified assessment of the relative contributions of
psychological, physiological, and social factors to the course and outcome of the disease process as being of major importance in the patient with chronic disease. He suggests that adjustment and cooperation with the treatment regimen may be influenced by psychosocial variables. This same premise is supported in studies which correlated personality patterns and coping styles with outcome in surgical patients (Boyd et al., 1973; Cohen and Lazarus, 1973).

Malmquist (1973a, 1973b) acknowledges the importance of predicting psychological reactions of patients because different patients respond very differently to the dialysis situation. Kaplan De-Nour (1976) suggests that it is possible to predict patient's behavior during dialysis by assessing personality traits and other factors before placement in the treatment program.

**Psychosocial Factors as Determinants of Outcome in Continuous Ambulatory Peritoneal Dialysis**

Continuous Ambulatory Peritoneal Dialysis (CAPD) is a recent development in the treatment of end-stage renal disease. It is a relatively simple procedure, designed primarily for home and self-care dialysis (Moncrief, 1979). The self-care emphasis of CAPD dictates that the patient be responsible for the outcome of his care. The adaptive methods available to the patient for dealing with dialysis related responsibilities are determined by psychosocial characteristics, and therefore vary from patient to patient (Kaplan De-Nour, 1976; Lindsay, 1982).
Nursing literature on CAPD identifies the importance of assessment of both physical and psychosocial capabilities and deficits which may serve as meaningful predictive criteria. Most authors identify motivation as important to the patient’s outcome on CAPD (Hanson, 1979; Prowant, 1981; Allen, 1981; Sorrels, 1982). Motivation provides the incentive to adhere to the repetitive regimen. Perras (1981) acknowledges that motivation has a central role in successful adjustment to CAPD, but proposes that other factors may serve to negate its impact. She suggests that factors such as mental acuity, health beliefs and social support may also be determinants of outcome.

Statement of the Problem

End-stage renal disease patients face the difficult task of redefining life in accordance with their treatment program. Levenberg (1977) describes adjustment as being dependent upon the patient becoming comfortable with the disease and treatment process and setting new goals for himself.

Clinical experience has shown that individual patients exhibit marked differences in adjustment to renal disease and the CAPD regimen. The findings of early hemodialysis studies suggest that certain patient characteristics and social factors may be predictive of the patient's ability to successfully adjust to the dialysis situation. The implication of these findings is that improper selection may be decreased by directing attention toward identifying patient factors which facilitate or hinder the adjustment process. The intent of this study was to
investigate the influence of psychosocial factors on success or failure in adjustment to the CAPD program.

Significance of the Problem

CAPD possesses an economic incentive emanating from federal regulations governing Medicare reimbursement for renal replacement therapy. Currently, hemodialysis, peritoneal dialysis, and transplantation are the modes of renal replacement therapy available to patients with end-stage renal disease. Self-dialysis programs, such as CAPD, have been demonstrated to be more cost effective than incenter dialysis. Therefore, in an effort to promote cost containment, self-dialysis programs receive Medicare coverage beginning in the first month of dialysis, while incenter dialysis patients' reimbursement begins 90 days after treatment is initiated (USDHHS, 1982). In addition, the simplicity of CAPD and the aura surrounding its status as a new treatment have contributed to its rapid and widespread acceptance as a mode of therapy for patients with end-stage renal disease. It is now becoming apparent, however, that CAPD is not for every patient. Some centers are reporting dropout rates as high as 50 percent per year in their CAPD programs (Anäst, 1982). It is estimated that over 40 percent of patients will leave CAPD before the end of their first year in the program (Mion, 1981).

Recurrent peritonitis is the most frequently cited reason for abandoning CAPD (Mion, 1981). A number of authors indicate that non-compliance with the medical regimen plays a major role in the development of peritonitis as well as other medical conditions which could result in
death or removal from CAPD (Hanson, 1979; Allen, 1981; Perras, 1981; Oreopoulos, 1982). In the same context, Lindsay (1982) identified a number of psychosocial factors as being significant contributors to failure on CAPD.

The renal patient is affected by multiple physical and psychosocial factors which may serve as stressors. The patient faces the physical stress of catheter placement and peritonitis, as well as a variety of psychosocial stressors. Gross (1982) has suggested that self esteem deficits, dependency needs, security needs, and affiliative needs are some of the stressors affecting the adult patient. Other psychosocial factors that must be handled include denial, anger, frustration, and changes in family functioning (Sparks, 1982). Perras (1981) proposes that, in addition to physical and psychosocial stressors, the repetition and routine of the CAPD procedure itself becomes stressful to the patient.

Nephrology literature provides numerous illustrations that not all patients react to or handle these stressors in an adaptive way. If successful adjustment to CAPD is the treatment goal, then understanding the specific psychosocial patterns that cause maladjustment may provide a means for reducing selection error and preventing additional physical, psychological and economic stress to the patient.

As a member of the dialysis team, nursing has an important, yet underutilized, role in the evaluation of patients for CAPD. Through the incorporation of physiological, psychological, and sociological concepts, the nurse must assess and utilize information that relates to the
characteristics and special needs of each patient (Murray and Zentner, 1979). The nurse responsible for training and follow-up of the patient is in an ideal situation to obtain patient information relevant to CAPD adjustment. Assessment must begin prior to selection for CAPD. Integrated information on the patient's physical capacities, psychosocial functioning and coping skills may be used as a basis for nursing recommendations for entry into the CAPD program. Likewise, this body of knowledge is essential in formulating a comprehensive focused nursing treatment plan that will facilitate adjustment to the dialysis regimen (Dimond, 1979). Millon (1981) suggests that characterization of the patient's psychosocial make-up should encourage the use of therapies aimed at modifying the impact of the identified negative influences, and encouraging characteristics that promote adjustment.

Purpose of the Study

The purpose of this study was to identify psychosocial factors which discriminate between patients who successfully adjust and remain on CAPD and those who do not adjust. A number of authors have described the influence of psychosocial factors on adjustment to CAPD, however only one attempt (Lindsay, 1982) to quantify these factors is found in the literature.

Summary

This chapter has presented an overview of the literature describing the influence of psychosocial factors on adjustment to chronic illness. The patient with end-stage renal disease experiences a number
of physical and psychosocial stressors which may influence adjustment to Continuous Ambulatory Peritoneal Dialysis. The patient's adjustment to the CAPD treatment regimen is facilitated by nursing assessment of psychosocial variables which impede or enhance the adjustment process. This research sought to identify psychosocial factors which discriminate between successfully adjusted and nonadjusted CAPD patients.
The conceptual framework for this study was based on the assumption that man is a dynamic complex of interrelating physiologic, psychologic and sociocultural variables. This view is consistent with psychosomatic theory in which health and illness are conceptualized as an interaction of biological and psychosocial factors in a feedback process (Lipowski, 1970). All of these factors are viewed as influencing the individual's response to life events, susceptibility, and reactions to illness.

Nursing theorists also support the premise that man is a biopsychosocial being. Neuman (1980) views the individual as being a unique composite of physiologic, psychologic, sociocultural, and developmental factors. Roy (1980) considers man a biopsychosocial being who must be viewed as a unit or whole. She states that man copes with and adjusts to his changing environment through the use of both innate and learned biological, psychological and social adaptive mechanisms.

Many researchers (Moos, 1969; Lipowski, 1970; Lazarus, 1974) who study the influence of psychosocial factors on illness and adjustment to the treatment regimen have based their research on the model depicted in Figure 1. The model describes a positive relationship between the various personal, illness, and social factors and the patient's perception of illness and coping skills. The model also depicts positive
Figure 1 Indirect Relationship of Patient Factors with Adjustment
relationships between perception of illness and use of coping skills and adjustment to the treatment regimen. Researchers using this model view psychosocial variables as determinants of adjustment through their influence on perception and selection of coping skills.

In summarizing a number of personality theorists' position on the subjective frame of reference, Hall (1970) emphasizes that the physical environment and events can affect the individual only as he perceives them. Thus, perception or the assignment of meaning by the individual is viewed as the determinant of behavior.

This position has been investigated in reference to personal as well as social and illness-related factors. Pritchard (1977) has examined attitudes and perceptions in chronic hemodialysis patients. He concludes that certain perceptions and feelings influence illness behavior patterns and may have significance in the patient's ability to cope with dialysis.

Lazarus' (1966, 1974) work on stress and coping with illness suggests that response is dependent upon both the situational factors and the personality characteristics of the individual. He emphasizes that personality factors have an important role in the appraisal of stressful situations such as chronic illness. He further proposes that dissimilar personality characteristics will lead individuals to appraise the same illness situation in different ways. For example, one dialysis patient may see his need for dialysis treatments as a threat to his self-concept and lifestyle, while another may perceive it as being relatively benign. Likewise, differences in personality will affect the choice of coping
processes selected to manage the stressor, and therefore may influence adjustment to the illness. This is consistent with Lipowski's (1970) assertion that the ability to cope with illness or disability depends largely on the same factors that determine the psychological reaction.

The present research recognizes the important influence of perception and coping skills on adjustment to CAPD, however difficulty in quantification of these concepts has limited their utilization in the clinical setting (Backus, 1974). The model, shown in Figure 2, proposes that personal factors, illness factors, and social factors also have a direct quantifiable relationship with adjustment to the CAPD treatment program. Each of the constructs and concepts depicted in Figure 2 will be addressed in the following sections.

Relationship Between Personal Factors and Adjustment

The relationship between personal factors and adjustment has been demonstrated across a number of clinical populations. Of the personal factors addressed in the literature, personality characteristics have been demonstrated to have the most significant relationship with adjustment, and were used as the measure of the concept of personal factors in this study.

Cattell (1977) defines personality as that which allows a prediction of what an individual will do in a given situation. He suggests that personality is a complex and differentiated structure of traits which are the outcome of environmental and hereditary factors. Other theorists emphasize development as an important aspect of personality. Millon (1969) has proposed that personality patterns and behavioral
Figure 2 Direct Relationship of Patient Factors with Adjustment: Construct and Conceptual Levels
tendencies develop as a result of a shaping process. The individual begins life with a wide variety of perceptions and responses. Gradually, the range becomes narrowed and selective, until a characteristic pattern of perception and behavior is solidified.

A number of researchers have investigated the effects of personality factors on adjustment. Oostdam (1981) and associates studied the predictive value of MMPI scales on surgical outcome in low back pain patients. Their results indicated that the depression, hysteria and hypochondriasis scales were the most promising discriminators of patient outcome. Other studies in chronic pain patients also indicate that these personality factors may predict outcome of treatment, and should be integrated into the patient's treatment plan for rehabilitation (Rook, 1981).

Goble (1978) used the 16-PF questionnaire to investigate treatment outcome in patients with artificial pacemakers. His findings indicated that scales measuring ego strength and self-reliance were the optimal predictors of successful adjustment.

Early hemodialysis literature indicates a great concern with the relationship between personality factors and adjustment to hemodialysis. Malmquist (1973a; 1973b) evaluated patients prior to beginning hemodialysis and followed their adjustment through six and twelve months of treatment. His findings indicated a positive relationship between independence and optimism and adjustment to hemodialysis. Depression and anxiety were found to be negatively related. These results are consistent with Kaplan De-Nour and Czaczkes' (1975, 1976) investigations of
adjustment to chronic dialysis, in which depression, aggression and dependency were negatively correlated with dietary compliance, rehabilitation, and psychological condition.

Ziarnik et al., (1977) utilized the MMPI in studying psychological correlates of survival in dialysis patients. Their findings suggest that depression, denial, and anxiety levels affect adjustment and length of survival and hemodialysis. In a similar study, Schlebusch and Levin (1982) investigated the effect of personality characteristics on poor adherence and adaptation to hemodialysis. Significant differences were found in respect to three 16-PF factors. Patients who manifested nonadherence and poor adjustment tended to score high in expedient vs. conscientious, venturesome vs. shy, and experimental vs. conservative.

Lindsay (1982) studied psychosocial influences on adjustment in a group of home hemodialysis and peritoneal dialysis patients. Using the Basic Personality Inventory Scale, Lindsay demonstrated correlations between success and high levels of denial. Depression was found to be the most powerful determinant of both adaptation and survival. Patients scoring high in depression manifested significantly lower levels of physiological, psychological, social and economic adjustment.

**Relationship Between Illness Factors and Adjustment**

Moos (1977) proposes that illness-related factors affect adjustment in chronic illness by influencing perceptions of illness and determining the availability of resources that can be used to deal with stressors. He suggests that age at onset and duration are important
factors because they determine the coping experience from which the individual can draw. This is consistent with Lindsay's (1982) identification of age-related differences in stress counts and adaptation patterns in dialysis patients. Older patients were found to experience less stress from their treatment modality.

Other illness-related factors, such as severity of symptoms and amount of disability, may limit the availability of the coping resources required for successful adjustment. Failing vision or severe neuropathy are examples of illness factors which have been commonly identified as impediments to successful adjustment on CAPD.

Investigations of adjustment in dialysis patients have generally attempted to control for the impact of illness-related factors. Dimond (1979) found that the relationship between adjustment to hemodialysis and support of a friend or confidant was negated when medical problems were controlled. This supports the contention that the stresses of chronic medical conditions have a negative impact on adjustment through their detrimental effect on support systems.

Conversely, other studies discount the influence of illness factors on adjustment. Allen and Perkins (1981) discovered that the most successful group of CAPD patients also had the greatest number of complicating medical conditions, and were generally less healthy. These findings suggest that the importance of illness-related factors may be moderated by other factors when studying clinical populations of like disease processes.
Relationship Between Social Factors and Adjustment

The relationship between the patient's social environment and adjustment to chronic illness has been extensively investigated. A number of studies describe the importance of social support, from family members and other sources, on the patient's ability to adapt to the disease restrictions and therapeutic requirements.

Social support has been conceptualized in a variety of ways. Walker et al., (1977) defines social support systems as personal contacts which allow the individual to maintain social identity, provide emotional support, material goods and services, information, and new social contacts. Social support has also been viewed as a buffer or moderating influence on the impact of life stressors (Cobb, 1976).

Studies of social support in renal disease and dialysis situations suggest that a supportive environment has a positive impact on patient adjustment. MacElveen (1972, 1975) identified common goals, consensus on means of goal achievement, trust, and congruence of perceptions as four dimensions of social support positively related to adjustment in home dialysis. Patients with family environments containing these four aspects of social support demonstrated significantly higher morale, higher levels of activity, and greater compliance with the treatment program. Other studies have associated an unsupportive social environment with nonadherence and poor adjustment to the treatment regimen (Procci, 1981; Steidl et al., 1980).

Diamond (1979) identified family cohesiveness as the most important source of support in her study of adaptation to maintenance
hemodialysis. Family cohesiveness was significantly associated with higher levels of morale and less change in social functioning. In a similar study, Piltz-Kirkby and Fox (1982) found that successful home hemodialysis patients place a higher level of importance on social support systems than do their incenter counterparts. In addition, the home patients were able to utilize their support systems more effectively in promoting their adjustment.

Several authors suggest that changing from incenter hemodialysis to CAPD may have a negative impact on the patient's social environment (Allen, 1981; Perras, 1981). Many chronic dialysis patients obtain a sense of identity and belonging through socialization at the dialysis unit. CAPD is designed to be performed by the patient at home, and may therefore isolate the patient from his major social support system.

**The Construct of Adjustment to CAPD**

Adjustment in the chronically ill has been described as those behaviors congruent with the goals of biological survival, competent behavior, and responsible conduct (Weissman, 1972). The CAPD patient experiences both physical and emotional losses to which he must adjust. Not only must he deal with the restrictions placed on him by the disease process, but he is also required to master and faithfully carry out a daily treatment regimen on which his very life depends.

The investigation of adjustment to maintenance dialysis has typically involved measurement of outcome as a single dimension. Many studies attempt to measure adjustment by examining only one aspect of outcome, such as compliance, vocational rehabilitation or length of
survival. Blodgett (1981) has criticized single dimension studies as being too restrictive, and for incorrectly assuming that failure to achieve the established adjustment criteria is pathologic. In addition, many investigators have developed adjustment criteria peculiar to their own situation, making comparison and replication difficult.

Other researches embrace a more holistic view of adjustment and measure a variety of variables. Some authors have used physical, emotional, social, and economic factors as indices of adjustment (Lindsay, 1982).

Levenberg (1977) has applied Erickson's theory of development to the adjustment process in end-stage renal disease. Because of the demands placed on them by the disease and treatment processes, dialysis patients have to again resolve some of the conflicts present in each of Erickson's eight developmental stages. Since this is a normal developmental model, adjustment difficulties are not viewed as pathologic.

In the same context, the four adjustment phases identified in hemodialysis patients are also seen as being common to CAPD patients (Sorrels, 1982). Unique adjustment difficulties are encountered as the patient passes from the "honeymoon" to the "education" phase, and through the phase of "disillusionment" into the final "reality" phase.

These latter two concepts view successful adjustment as a consequence of satisfactory progression through each phase or developmental stage. They agree with Weissman (1972), that the successfully adjusted patient assumes responsibility for his treatment, and behaves in a manner
which assures physiologic homeostasis and maintenance in the program. This position allows outcome variables, such as physiologic parameters and continuance in the program, to be used as appropriate indicators of the adjustment process.

**Conceptual Level**

The model guiding this research (Figure 2) demonstrates the direct individual relationships of personal factors, social factors and illness factors to adjustment to CAPD. The concepts under investigation in this study are indicated in the model. It is proposed that there is a positive relationship between each of the three concepts of patient factors and the three concepts of adjustment.

Personality characteristics were used as the indicator of personal factors in this investigation. Of particular interest were the characteristics of dependency, expediency, conservatism, and self-conflict, which had been demonstrated to be predictive of adaptation to other chronic treatment regimens (Goble, 1978; Schlebusch, 1982).

Prior experience on hemodialysis therapy was proposed as an indicator of illness-related factors. Because of the design of this study, consideration of the effects of major medical problems was eliminated. Many illness factors were shared by all or most of the patients on CAPD, and therefore were not examined.

The level of family support as perceived by the patient was the indicator of social support examined in this study. Family support is identified as the amount of commitment, help, and support family members provide for one another.
Three indicators of adjustment were proposed by the model guiding this investigation. Continuance in the program, incidence of peritonitis, and the physiologic parameter of serum albumin have been identified as appropriate criteria for measuring adjustment to CAPD (Prowant, 1980; Allen, 1981; Oreopoulos, 1982), and were the defined indicators of adjustment used in this study.

Summary

In summary, the purpose of this descriptive study was to investigate the relationship between patient factors and adjustment to CAPD. A number of studies have identified correlations between certain psychological, social and illness factors and the patient's ability to adjust to chronic dialysis. Recognition of these factors may be useful in planning specific nursing interventions.
CHAPTER 3

METHODOLOGY

This chapter addresses the topics of design, setting, sample, and protection of human subjects. Data collection instruments, method of data collection, and method of data analysis will also be discussed.

Design

This was a descriptive study designed to examine the relationship between patient psychosocial factors and adjustment to CAPD. Data were obtained from the patient population to ascertain if there were any differences in psychosocial factors which discriminate between patients who successfully adjust to CAPD and those who do not adjust.

Setting

The study was conducted in a free-standing dialysis center located in the southwestern United States. In addition to incenter hemodialysis, this center provides training and follow-up services for patients on home hemodialysis and home peritoneal dialysis programs. Patients enter the CAPD program through physician referral. Following hospitalization for peritoneal catheter insertion, the patient begins an intensive two week training period with their primary nurse in the home training unit. At the end of the training period, the patient is expected to meet established standards of knowledge and technique. After completing the training, patients return to the center for monthly visits.
During these visits the CAPD tubing is changed and the patient's health status, knowledge and technique are assessed by the nursing staff.

Sample

A convenience sample of 25 patients was selected from the total group of patients who had completed the CAPD training program. Patients needed to be 18-75 years of age and capable of independently performing the CAPD procedure. All patients who participated in the study were required to be mentally alert, willing to participate, and able to read and speak English.

A number of illness-related factors were controlled for in order to provide a more homogeneous sample. Patients with severe medical problems, those blind or with significant neuropathy were excluded, because those conditions require them to have assistance in performing their exchanges.

The sample was drawn from two patient populations: those who remained on CAPD, and those who dropped out of the CAPD program. Because one of the measures of successful adjustment was continuance in the program for at least eleven months, patients who had started in the CAPD program less than eleven months prior to the study were omitted. The group of patients who abandoned CAPD were included in the sample regardless of the length of time they had been in the program.

Protection of Human Subjects

The proposal for this research was approved by the Ethical Review Committee of the University of Arizona College of Nursing, and the
Medical Directors of the dialysis centers where the study was conducted (Appendix A). The study included only patients who consented to participate. Subjects were given a disclaimer (Appendix B) to read prior to participation. The purpose of the study and the subject's right to withdraw at anytime without consequences were explained to every individual invited to participate. Each subject was assigned a code number in order to assure confidentiality of the information obtained.

**Data Collection Instruments**

The concepts under investigation and their corresponding measuring instruments are listed in Table 1. The instrument used to measure family support was the Cohesion subscale of the Family Environment Scale (Appendices C, D). The Family Environment Scale, developed by Rudolph Moos and associates (1981), consists of 90 true/false items scored on ten 9-item subscales which characterize the social environments of families.

The Family Environment Scale was developed through testing and revision of earlier scales. Initially, a 200-item scale was administered to 285 families of varying sociocultural backgrounds. Items which demonstrated desirable psychometric properties were retained, resulting in the 90-item scale composed of the 10 subscales. The Cohesion subscale possesses the highest internal consistency with a Cronbach's alpha subscale correlation of .78. Test-retest reliability of the Cohesion subscale indicated a correlation of .86 for the 47 members of 9 families tested over a two month interval.
<table>
<thead>
<tr>
<th>CONCEPT</th>
<th>INSTRUMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Support</td>
<td>Family Environment Scale - Cohesion Subscale</td>
</tr>
<tr>
<td>Personality</td>
<td>16 Personality Factor Questionnaire - Factor G, H, Q1, Q2, Q3</td>
</tr>
<tr>
<td>Adjustment</td>
<td>Continuance on CAPD &gt; 11 months Peritonitis episodes/months on CAPD 3 month mean serum albumin</td>
</tr>
</tbody>
</table>
No validity data have been provided; however, the Family Environment Scale does seem to represent the dimensions it is purported to measure, and therefore possesses face validity (Dreyer, 1978). The careful development and refinement of the subscales would suggest that content validity is also present. According to Moos (1981), validity does not appear to be compromised by the utilization of a single subscale. A number of investigators have administered the Cohesion subscale alone, or in combination with one or two other subscales.

The 16-Personality Factor Questionnaire Form E was used to measure personality variables (Appendix E). The 16-PF is an objective test designed to provide a relatively complete measure of personality. Table 2 lists the personality characteristics measured by the 16-PF.

Raw scores were obtained for each subscale. Possible scores on each subscale ranged from zero to eight, with higher scores indicative of the latter of the paired characteristics. Although the entire 128-item questionnaire was administered, the primary interest was in the factors expedient/conscientious, shy/venturesome, conservative/experimenting, group-dependent/self-sufficient, and undisciplined self-conflict/controlled.

Form E is a special adaptation for use in settings where clients may be physically, educationally, or culturally disadvantaged. The forced-choice, large-print format, and the concreteness of test items are ideally suited for a CAPD population in which a high percentage of clients utilize English as a second language. The Form E Manual (1976) provides estimates of reliability and validity for the 16 scales based
<table>
<thead>
<tr>
<th></th>
<th>Characteristic</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>Reserved/Outgoing</td>
</tr>
<tr>
<td>B.</td>
<td>Concrete/Abstract</td>
</tr>
<tr>
<td>C.</td>
<td>Affected by feelings/Emotionally stable</td>
</tr>
<tr>
<td>E.</td>
<td>Humble/Assertive</td>
</tr>
<tr>
<td>F.</td>
<td>Sober/Happy-go-lucky</td>
</tr>
<tr>
<td>G.</td>
<td>Expedient/Conscientious</td>
</tr>
<tr>
<td>H.</td>
<td>Shy/Venturesome</td>
</tr>
<tr>
<td>I.</td>
<td>Tough-minded/Tender-minded</td>
</tr>
<tr>
<td>L.</td>
<td>Trusting/Suspicious</td>
</tr>
<tr>
<td>M.</td>
<td>Practical/Imaginative</td>
</tr>
<tr>
<td>N.</td>
<td>Forthright/Astute</td>
</tr>
<tr>
<td>O.</td>
<td>Self-assured/Apprehensive</td>
</tr>
<tr>
<td>Q1.</td>
<td>Conservative/Experimenting</td>
</tr>
<tr>
<td>Q2.</td>
<td>Group-dependent/Self-sufficient</td>
</tr>
<tr>
<td>Q3.</td>
<td>Undisciplined self-conflict/Controlled</td>
</tr>
<tr>
<td>Q4.</td>
<td>Relaxed/Tense</td>
</tr>
</tbody>
</table>
on data derived from 914 male convicts and two samples of hearing impaired college freshmen. All but three of the scales demonstrated moderate internal consistency with a Cronbach's coefficient alpha of greater than .40. Construct validity of the questionnaire has been estimated by correlating the individual scale score with the pure factor it is proposed to measure. Construct validity values for 14 of the scales have been demonstrated to be .59 or greater. The mean values of correlations among the 16 scales is .15. This minimal overlap between scales indicates that the 16-PF scales also possess discriminant validity.

Three indicators of adjustment were used: continuance in the CAPD program; incidence of peritonitis; and serum albumin level. Adjustment data and demographic factors were recorded on a separate patient data sheet shown in Appendix F.

Continuation in the CAPD program was determined by whether the patient remained on CAPD at 11 months and thereafter. Time in the program was counted beginning with the day CAPD training was initiated in the dialysis center.

Peritonitis is one of the major problems associated with CAPD. In order to reduce the risk of peritonitis, the patient is taught to follow a strict aseptic procedure when doing the CAPD exchanges. Failure to incorporate these behaviors into the daily CAPD regimen results in an excessive incidence of peritonitis (Allen, 1981; Perras, 1981; Oreopoulos, 1982). In this study, incidence of peritonitis was described as the number of months on CAPD divided by the number of peritonitis episodes. Oreopoulos (1982) identifies the average incidence of
one episode per every twelve patient months. Because the center where
the study was conducted had a much higher incidence of peritonitis, the
criterion for adjustment was set at one episode per every eight patient
months (.125).

The peritoneal membrane is permeable to large blood proteins
such as albumin. Up to 15 grams of protein may be lost through the
exchange of CAPD fluid in a twenty-four hour period (Kligler, 1981). Be­
cause albumin is the chief component of the body's colloidal osmotic
pressure, losses must be replaced in order to maintain fluid balance
between the intravascular and interstitial compartments. CAPD patients
receive instruction on dietary protein intake during the training period,
and their serum protein levels are monitored during monthly follow-up
appointments. Nephrology literature indicates that the majority of pa­
tients on CAPD maintain their serum albumin levels at or above 3.4 grams/
deciliter (Prowant, 1980; Oreopoulos, 1982). For patients remaining on
CAPD, the mean value of each patient's serum albumin level during the
preceding three months was compared to the established standard of
3.4 grams/deciliter. For those patients transferring from CAPD, the last
three months of CAPD therapy were used to compute serum albumin level.
Because a single serum albumin level may be negatively influenced by an
episode of peritonitis or by laboratory error, a three month mean level
was used to more accurately describe the patient's ability to adjust
dietary protein intake to meet bodily requirements.
Method of Data Collection

Data were collected by interview, completion of the two data collection instruments, and review of the patient's medical record. All data were obtained during the patient's routine appointment at the dialysis center.

Each subject was interviewed prior to data collection. Interview data encompassed demographic and background information, including age, sex, length of time on CAPD, prior hemodialysis experience, and present mode of renal replacement therapy.

Following completion of the interview, instructions for both the Family Cohesion scale and the 16-PF questionnaire were read aloud by the investigator while the subject followed the printed text. The subject was asked to complete both instruments prior to leaving the center. As the instrument administration instructions suggest, the investigator remained nearby to answer any questions.

Laboratory reports from the patient's medical record were utilized to determine the incidence of peritonitis and mean serum albumin levels. Information obtained from the patient interview and medical record was recorded on the separate patient data sheet.

Analysis of Data

Discriminant analysis was used to determine if successfully adjusted CAPD patients could be differentiated from those patients failing to adjust to CAPD based on demographic variables and the patient's response to the Family Cohesion scale and the 16-PF questionnaire. Discriminant analysis is a statistical technique in which a number of
interval level variables may be studied to differentiate between two or more nominal level groups (Klecka, 1980). In this study the nominal level groups were determined by the three adjustment factors, therefore three discriminant analyses were performed. For the first analysis, the adjusted group was considered to be those on CAPD at eleven months or longer, and the nonadjusted group those who had abandoned CAPD. In the second analysis, the adjusted group was identified as those who maintained a mean serum albumin of 3.4 g/dl or greater, and the nonadjusted group those who had a mean serum albumin of less than 3.4 g/dl. For the third analysis, the adjusted group was considered those patients with an incidence of peritonitis of one per eight patient months or less, and the nonadjusted those with an incidence of peritonitis exceeding one per eight patient months.

Discriminant analysis does not assign direction of causation to relationships. Rather, the relationships are labeled as standardized discriminant function coefficients, with each coefficient revealing the contribution made by that item to the relationship between the various patient factors and adjustment. Discriminant function coefficients may be expressed as either a positive or negative value. The larger the number of the coefficient, the greater the contribution made by that item.

A multiple regression analysis was performed in order to understand the effects of the independent variables on a composite dependent measure of adjustment. A number of factors were influential in determining the composite measure. Continuation in CAPD was deleted from the composite score because of difficulties in equalizing the amount of time
the patient was in the program. Patients who had been in the program for 11 months could not be considered less adjusted than those who continued on CAPD at 36 months. Successful adjustment was defined by a higher serum albumin level and lower incidence of peritonitis, which resulted in two scores going in opposite directions. In order to equalize the direction, the composite measure of adjustment was obtained by subtracting the patient's incidence of peritonitis from the three month mean serum albumin level. Higher scores were indicative of more successful adjustment.

Multiple regression provides the best prediction of the dependent variable when correlations among several variables exist. The multiple correlation coefficient ($R$) varies from 0.0 to 1.0, showing the strength of the relationship but not the direction (Polit, 1978). A high value of the coefficient of determination ($R^2$) means that a large percentage of the variability in adjustment scores can be explained in terms of the independent variables being tested. The significance level for this analysis was set at $p < .05$.

Both multiple regression and discriminant analysis were chosen for this study in order to gain a more complete understanding of the variables which may predict CAPD adjustment. The use of multiple regression accounts for finite gradations in the adjustment measure, while discriminant analysis indicates those variables which are the best predictors of adjustment of nonadjustment.
Summary

This research was a descriptive study which utilized a group of adult CAPD patients. Subjects voluntarily participated during their monthly appointment at the dialysis center. Demographic data were obtained by interview. Psychosocial data were obtained by having the subjects complete the Family Cohesion Subscale and the 16-PF Questionnaire. Medical and laboratory data were derived from review of the patient's medical record. Discriminant analysis and multiple regression analysis were utilized to differentiate between patients who successfully adjust to CAPD and those who do not.
CHAPTER 4

RESULTS

This chapter presents the findings and statistical analysis of data collected regarding the influence of psychosocial factors on adjustment to Continuous Ambulatory Peritoneal Dialysis. Data were derived from a convenience sample of 25 patients who had completed the CAPD training program.

Comparison of the Patient Group

The demographic characteristics of the CAPD patient group are compared in Tables 3 and 4. The age of the patient group ranged from 18 to 72 years with a mean of 42.4 years. Fourteen of this group had been hemodialyzed prior to beginning the CAPD program. The amount of prior hemodialysis experience ranged from 5 to 120 months, with a mean length of 31 months. The group consisted of 15 males and 10 females. Sixty percent (N=15) of the group were Caucasian, thirty six percent (N=9) were Hispanic, and four percent (N=1) were Black.

Table 5 compares the data on the three adjustment measures, where adjustment for each measure was determined by the established criterion. Seventeen patients were continuing on in the CAPD program, while eight patients transferred from the program. Of the patients transferring from CAPD, four were on incenter hemodialysis, two received cadaveric renal transplants, one was placed on continuous cycler
TABLE 3 Comparison of the Age and Prior Hemodialysis Experience of the CAPD Patient Group.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>42.4</td>
<td>14.0</td>
<td>25</td>
</tr>
<tr>
<td>Prior Hemodialysis (months)</td>
<td>31.0</td>
<td>38.3</td>
<td>14</td>
</tr>
</tbody>
</table>
TABLE 4  Comparison of the Sex and Ethnic Origin of the CAPD Patient Group.

<table>
<thead>
<tr>
<th></th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>15</td>
<td>.60</td>
</tr>
<tr>
<td>Female</td>
<td>10</td>
<td>.40</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>15</td>
<td>.60</td>
</tr>
<tr>
<td>Hispanic</td>
<td>9</td>
<td>.36</td>
</tr>
<tr>
<td>Black</td>
<td>1</td>
<td>.04</td>
</tr>
</tbody>
</table>
TABLE 5 Comparison of Adjustment Data

<table>
<thead>
<tr>
<th></th>
<th>Adjusted*</th>
<th>Nonadjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Months in CAPD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>21.3</td>
<td>12.1</td>
</tr>
<tr>
<td>S. D.</td>
<td>9.2</td>
<td>7.1</td>
</tr>
<tr>
<td>(N=17)</td>
<td></td>
<td>(N=8)</td>
</tr>
<tr>
<td><strong>Incidence of Peritonitis</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>.047</td>
<td>.234</td>
</tr>
<tr>
<td>S. D.</td>
<td>.052</td>
<td>.119</td>
</tr>
<tr>
<td>(N=17)</td>
<td></td>
<td>(N=8)</td>
</tr>
<tr>
<td><strong>Serum Albumin</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>3.81</td>
<td>3.05</td>
</tr>
<tr>
<td>S. D.</td>
<td>.27</td>
<td>.25</td>
</tr>
<tr>
<td>(N=18)</td>
<td></td>
<td>(N=7)</td>
</tr>
</tbody>
</table>

* Adjustment defined as:
  a. Continuing in CAPD;
  b. Incidence of Peritonitis ≤ .125;
  c. Serum Albumin ≥ 3.4 g/dL.
peritoneal dialysis, and the treatment for one was undetermined at the
time the study was conducted. For the adjusted patient group, the
number of months in CAPD ranged from 12 to 36 months with a mean of
21.3 months. The eight patients in the nonadjusted group had been on
CAPD for periods of time ranging from 3 to 30 months. The length of
time reported did not represent continuous time in the CAPD program, as
one patient transferred to and from CAPD twice during a three year
period. The mean length of time on CAPD for nonadjusted patients was
12.1 months.

Incidence of peritonitis was calculated by dividing the number
of months on CAPD by the number of peritonitis episodes. The mean inci­
dence of peritonitis in the 17 patients classified as adjusted was .047,
with a range of .000 to .125. Eight patients failed to achieve the
criterion of .125. In these nonadjusted patients, the incidence of
peritonitis ranged from .130 to .500, with a mean of .234.

Eighteen patients were classified as adjusted with a serum
albumin level of ≥ 3.4 g/dl. The mean albumin level in the adjusted
group was 3.81 g/dl, with a range of 3.4 g/dl to 4.3 g/dl. The serum
albumin level for the seven nonadjusted patients ranged from 2.6 g/dl to
3.2 g/dl, with a mean level of 3.05 g/dl.

Comparison of Psychosocial and Adjustment Variables
Between Adjusted and Nonadjusted Patient Groups

Mean scores for the six psychosocial variables under investi­
gation are presented for each of the three adjustment measures in Table
6. Low scores are associated with the former of the paired personality
<table>
<thead>
<tr>
<th>Factor</th>
<th>Continuation</th>
<th>Peritonitis</th>
<th>Albumin</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Adjusted N=17</td>
<td>Nonadjusted N=8</td>
<td>Adjusted N=17</td>
</tr>
<tr>
<td>Family Cohesion</td>
<td>6.82 (2.60)</td>
<td>6.13 (3.23)</td>
<td>6.82 (2.67)</td>
</tr>
<tr>
<td>G</td>
<td>4.88 (2.20)</td>
<td>4.50 (1.19)</td>
<td>4.94 (2.10)</td>
</tr>
<tr>
<td>H</td>
<td>4.76 (1.92)</td>
<td>2.00 (1.92)</td>
<td>4.35 (1.93)</td>
</tr>
<tr>
<td>Conservative/Experimenting</td>
<td>3.94 (2.27)</td>
<td>2.25 (1.03)</td>
<td>3.23 (1.95)</td>
</tr>
<tr>
<td>Q2</td>
<td>5.11 (2.23)</td>
<td>4.75 (2.12)</td>
<td>4.05 (2.16)</td>
</tr>
<tr>
<td>Q3 Undisciplined/Controlled</td>
<td>5.00 (1.65)</td>
<td>3.75 (1.98)</td>
<td>4.94 (1.67)</td>
</tr>
</tbody>
</table>

*a Adjustment defined as:
- a. Continuing in CAPD;
- b. Incidence of peritonitis ≤ .125;
- c. Serum albumin ≥ 3.4 g/dl.
factors, while higher scores are associated with the latter factor. A wide response range was present in four of the six factors, as evidenced by standard deviations of greater than 2.00. Responses for the factors of shy/venturesome and undisciplined/controlled showed smaller standard deviations across all three measures of adjustment.

With study subjects classified as either adjusted or nonadjusted on the criteria of continuation in CAPD, incidence of peritonitis and serum albumin level, the responses to the Family Cohesion Subscale and the 16-Personality Factor Questionnaire were analyzed using the discriminant analysis procedure. Table 7 describes the standardized discriminant function coefficients of the psychosocial variables for each of these three adjustment measures. The greater the number of the coefficient, the more contribution that factor made in relationship to adjustment or nonadjustment. Analysis of the factors with values larger than approximately one-half of the largest weight will yield the factors which contribute the most in each of the three adjustment scores (Tatsuoka, 1970).

In the first analysis, examining continuation in the CAPD program, seventeen subjects were classified as continuing and eight noncontinuing. The largest positive weights for the continuation measure were venturesome, experimenting and self-sufficient. There were no negative weights for the continuation measure. The coefficient for the family cohesion factor was insignificant. The $R^2$ for the analysis was 0.53, indicating that this linear combination of variables explained over one-half of the variability in the continuation adjustment score.
TABLE 7  Standardized Discriminant Function Coefficients for Adjustment to CAPD Measures.  
(N=25)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Continuation</th>
<th>Peritonitis</th>
<th>Albumin</th>
</tr>
</thead>
<tbody>
<tr>
<td>G  Expedient/Conscientious</td>
<td>.1120</td>
<td>-.0375</td>
<td>****a</td>
</tr>
<tr>
<td>H  Shy/Venturesome</td>
<td>.7127</td>
<td>.2506</td>
<td>.4556</td>
</tr>
<tr>
<td>Q1 Conservative/Experimenting</td>
<td>.3846</td>
<td>-.1479</td>
<td>.1360</td>
</tr>
<tr>
<td>Q2 Group-Dependent/Self-Sufficient</td>
<td>.3313</td>
<td>****a</td>
<td>-.0371</td>
</tr>
<tr>
<td>Q3 Undisciplined/Controlled</td>
<td>.0431</td>
<td>.1547</td>
<td>.4378</td>
</tr>
<tr>
<td>Family Cohesion</td>
<td>****a</td>
<td>.0877</td>
<td>-.0600</td>
</tr>
<tr>
<td>Prior Hemodialysis</td>
<td>.0544</td>
<td>****a</td>
<td>-.0643</td>
</tr>
</tbody>
</table>

*aVariable not entering analysis
For the peritonitis discriminant function, the factors with the largest positive magnitude were venturesome and controlled. Conservatism had the highest negative weight. The data for group-dependent/self-sufficient and prior hemodialysis did not enter analysis. The discriminant function coefficients for the peritonitis measure were all considered to be low. The $R^2$ was .14, indicating that only a small amount of variability was explained by this linear combination of variables. In the peritonitis measure, seventeen patients were classified as adjusted and eight were classified as nonadjusted.

For the third discriminant function, eighteen patients were classified as adjusted on the serum albumin measure, while seven were nonadjusted. The factors with the highest weights were venturesome and controlled. The linear combination of variables explained 61 percent of the variability in the albumin adjustment score.

A multiple regression analysis was performed using the composite adjustment score derived from subtracting the incidence of peritonitis value from the mean serum albumin level for all patients. The independent variables were entered stepwise into the regression equation in the order of their correlation. Table 8 describes the forward regression analysis of the composite CAPD adjustment score. The $F$ test of the $R^2$ is significant at the .05 level with controlled and venturesome in the equation, and at the .10 level when expedient and prior hemodialysis are entered. The proportion of variance accounted for with all four variables is 31 percent as opposed to the 24 percent with only the first two (H and Q3). Only the regression weight for the first variable
TABLE 8 Regression Analysis of the Composite CAPD Adjustment Score (N=25)

<table>
<thead>
<tr>
<th>Variable</th>
<th>$R^2$</th>
<th>$F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q3 Undisciplined/Controlled</td>
<td>.18</td>
<td>5.0406**</td>
</tr>
<tr>
<td>H Shy/Venturesome</td>
<td>.24</td>
<td>3.4334**</td>
</tr>
<tr>
<td>G Expedient/Conscientious</td>
<td>.27</td>
<td>2.6376*</td>
</tr>
<tr>
<td>Prior Hemodialysis</td>
<td>.31</td>
<td>2.2529*</td>
</tr>
</tbody>
</table>

** $p \leq .05$

* $p \leq .10$
entered (Q3), is significant at less than .10. However the three additional variables are retained in the equation because they contribute at least three percent to the explained variance ($R^2$). Because of the exploratory and descriptive nature of the study and the lack of previous research in this area, the ability to predict small amounts of variance is substantively meaningful (Waltz, 1981).

**Summary**

This research has demonstrated that the combination of variables under investigation account for a moderate amount of variability in the continuation and albumin adjustment scores, but only a small percent of the peritonitis adjustment score. The personality characteristic of venturesome was demonstrated to be the best discriminator of adjustment in all three analyses. In addition, the characteristics of controlled, venturesome, expedient and prior hemodialysis were found to explain 31 percent of the variance in the composite adjustment score at a probability level of .10.
CHAPTER 5

DISCUSSION OF FINDINGS

The findings of this study and implications for nursing practice are addressed in this chapter. Recommendations for further investigation and conclusions are also discussed.

Findings Related to Program Continuation

The results of the continuation discriminant function indicate that patients who adjust and remain in the CAPD program tend to be more venturesome, experimenting and self-sufficient than patients who leave the program. Individuals possessing these traits are described as having the ability to withstand the stress of dealing with people and situations (IPAT, 1979). In addition, they are viewed as more resourceful and tolerant of inconvenience and change. The responses of the nonadjusted group demonstrated a tendency toward a high degree of threat sensitivity and feelings of inferiority. They are less tolerant of change and are characterized as having a greater need for social approval and group support.

The disease process and treatment of end-stage renal disease have the potential to disrupt all aspects of the patient's life. It is logical that the individual who has a more positive view of change and is accustomed to making independent decisions will more easily adapt his lifestyle to include the disease and treatment regimen. Although
culture was not a variable investigated in this study, it was observed that the ethnic minorities represented within the adjusted and non-adjusted groups tended to report high levels of sensitivity to the changes CAPD produced in their bodies and lifestyle. Past findings have identified marital-sexual difficulties and problems in the ability to fulfill role expectations in the CAPD population (Allen, 1981; Lindsay, 1982). Ethnic origin was found to be significantly related to adherence in a group of diabetic hemodialysis patients (Ruff, 1983). Rigid cultural expectations may intensify the threatening nature of the disease and treatment, especially if the patient feels dependent upon the cultural group for approval and support.

**Findings Related to Albumin Level**

The discriminant function for the albumin measure of adjustment demonstrated that the more venturesome and controlled personality was better adjusted to CAPD. In addition to being more readily adaptable to change, they manifest control of their emotions and general behavior (IPAT, 1979). These characteristics are helpful in regulating the CAPD routine into the daily lifestyle. Specifically, the controlled personality may be more adept at integrating their dietary requirements, while the nonadjusted patient tends to follow his own urges.

**Findings Related to Peritonitis**

The variables demonstrating moderate to high predictive value for continuation and albumin level did not hold for the peritonitis measure of adjustment. Only the venturesome factor had a positive
coefficient considered large enough to be meaningful. Of interest is the small negative coefficient indicating that adjusted individuals tend to be more conservative in this measure. This is contrary to the positive weights for the factor found in both the continuation and albumin measures, and most likely reflects the inclusion of noncontinuing patients who had never experienced peritonitis. The finding indicates that the cautious, tradition-oriented personality may be better equipped to adhere to the CAPD procedure, but may have difficulty with integrating the changes associated with the disease and treatment regimen into his lifestyle.

Clearly, peritonitis is a different kind of adjustment measure, as evidenced by the low weights of the discriminant function coefficients and the small $R^2$. Other variables than those under consideration contribute to the relationship. These variables are not readily identified in the findings of this study or in previous research on adjustment to renal replacement therapy.

Although the results of the discriminant functions for the continuation and albumin measures generally support the findings of previous research, they are not without discrepancy. High levels of venturesomeness and self sufficiency, found in the adjusted patient group, are consistent with early hemodialysis studies which associated independence and optimism with successful adjustment (Malmquist, 1973; Kaplan De-Nour 1975, 1976). In the continuation discriminant function, adjustment was positively associated with the venturesome, experimenting and self-sufficient personality. These findings are contrary to a previous study
which correlated the characteristics of shy, conservative and self-
sufficient with adaptation and adherence in hemodialysis patients
(Schlebusch, 1982). One possible explanation for these differences
lies in the dissimilarities between incenter hemodialysis and the self-
care orientation of CAPD. The therapeutic modality may influence adjust-
ment. Another possibility is that the present research did not equate
adjustment with adherence to the treatment regimen. In this study,
adjustment was conceptualized as a group of behaviors resulting in a
successful patient outcome. It was not assumed that those behaviors
were totally in agreement with the treatment protocol. The similarity
between the peritonitis discriminant function weights and Schlebusch's
(1982) results suggest that peritonitis may be more a measure of ad-
herence than adjustment.

Findings Related to the Composite
Adjustment Measure

The analysis of the composite adjustment score, obtained by sub-
tracting incidence of peritonitis from the serum albumin level, was
adversely influenced by the failure of the variables to hold across the
peritonitis measure. The controlled personality was found to be positi-
vely associated with adjustment and accounted for 18 percent of the
variability in the adjustment scores at a significant level. Although
the discriminant function coefficients for venturesome were consistently
moderate to high, that factor accounted for only six percent of the vari-
ance at a significant level. The inability of the variables to explain
the peritonitis measure of adjustment is apparent in both the positive
relationship between prior hemodialysis and adjustment, and the negative relationship between conscientious and adjustment. These small relationships are inconsistent with past findings and with what would logically be predicted (Schlebusch, 1982).

A further limitation of the composite adjustment score resides in the method in which it was determined. The lack of substantive research in this area required that the composite score be specified by the researcher, without adequate support for that specific combination of factors.

The linear combination of variables accounts for a major proportion of variability in both the continuation and albumin measures of adjustment. However, these factors cannot be considered predictive of adjustment to CAPD because of the small sample utilized in this research.

Implications for Nursing

Although the results of this study are unclear regarding the relationship between patient psychosocial factors and adjustment to CAPD, implications for nursing practice are evident. The personality characteristic of venturesome was consistently associated with adjustment across all adjustment measures. It is doubtful however, that this or any other single factor can be used as valid selection criteria for the CAPD program. Rather, these personal factors appear to be influential when combined with certain social or cultural situations, and may predispose the patient to adjustment difficulties.

Nursing has a unique and vital role in promoting health and adjustment in the CAPD patient. The frequency and duration of nursing
contact with the CAPD patient provides excellent opportunities for nursing interventions directed toward identification of positive and negative patient factors, and facilitation of adjustment through modification of those factors. End-stage renal disease places enormous physiologic stress upon the body. Dialytic therapy returns the body to physiologic homeostasis, but creates additional demands of the patient. In order to facilitate the patient's adjustment to CAPD, the nurse must assess the psychosocial factors present, and identify factors which would hinder the adjustment process. In this study, a high level of shyness and threat sensitivity was found to be associated with adjustment difficulties. In order to evaluate the effect of this characteristic, the nurse must first determine what threats are viewed as important by the patient. According to Goldsmith (1982), frequently identified threats among dialysis patients include disfiguration and the loss of meaning and value. These factors have been identified in the literature as potential threats to the CAPD population (Allen, 1981; Lindsay, 1982), and were observed in patients in this investigation.

Disfigurement is a threat to the physical self, the personal self concept, and the interpersonal self (Roy, 1980). Body image is the mental picture or idea that a person has of his body and its parts (Francis, 1968). Alteration in the body image resulting from the peritoneal catheter, tubing and bag, or the protruding abdomen filled with dialysate can severely disrupt the patient's psychological equilibrium. The nature of the reaction to altered body image is dependent upon the patient's own personality characteristics and the influence of the
external environment. Patients who are overwhelmed by these threats and unable to work through them, will evidence adjustment difficulties.

In the same context, the loss of meaning and value may be viewed as a threat by the CAPD patient. For many adults, meaning and value are tied to mastery and competence in one's environment. The loss of role, position and mastery are some of the specific threats faced by the patient on dialysis (Goldsmith, 1982). Role conflict occurs when the perceived expectations of others do not coincide with the behaviors or abilities of the patient. Frequently these conflicts are reported as marital-sexual difficulties, and the inability to simultaneously carry out life's work and perform CAPD exchanges.

Nursing assessment must include not only the patient's feelings and response but also the perceptions of the social support system and its cultural expectations. Previous findings indicate that adjustment is facilitated if the family's, and particularly the spouse's, beliefs and attitudes are evaluated prior to placing the patient in a treatment program (McGee, 1981). Utilization of this information allows nursing intervention to be directed toward specific threats which may negatively influence adjustment.

Maintenance of physical wellness is frequently regarded as the dialysis patient's major task in life, with adherence to the medical regimen his primary goal. The inconsistencies in the peritonitis measure of adjustment suggest that patient characteristics which contribute to adherence with the medical regimen may ultimately be detrimental to long term adjustment. Clinical implications of this finding may
influence the basic premise upon which nursing views adherence and adjustment. Blodgett (1981) proposes that the patient should be regarded as being involved in a process of rehabilitation, where adherence is necessary as the absolute minimum. Under these circumstances, treatment interventions and research concerns should be directed primarily at the patient's social and psychological functioning. This conception requires the modification and transition of nursing intervention, from insuring rigid adherence, to promoting acceptance and integration of the disease and treatment into the patient's lifestyle.

Recommendations for Further Investigation

The small sample size limited the predictive usefulness of this study. Use of a larger population of CAPD patients would provide for greater statistical power in future studies.

The three measures of adjustment did not produce complete results. In future studies, other measures of adjustment should be considered. In addition, the effect of cultural heritage on adjustment should be considered.

The suggestion that psychosocial characteristics influence adherence and adjustment in different ways requires further investigation. The use of a prospective study should be considered. Such a design would follow the adjustment process of patients with certain identified psychosocial characteristics over an extended period of time. Utilization of a prospective study provides for validation of the predictive usefulness of the psychosocial characteristics under consideration.
Conclusions

The purpose of this research was to identify any psychosocial factors which discriminate between patients who successfully adjust to Continuous Ambulatory Peritoneal Dialysis and those who do not adjust. The conceptual framework proposed that there was a direct relationship between psychosocial factors and adjustment to CAPD.

The results of this study indicate that there is a significant positive relationship between the more venturesome, controlled, experimenting and self-sufficient personality and successful adjustment to CAPD. In addition, the findings suggest that adherence and adjustment are influenced differently by certain psychosocial characteristics.

The findings account for a moderate proportion of the variance in the adjustment scores. The results indicate a need for nursing assessment of the patient's psychosocial makeup prior to the CAPD training period and throughout their course in the program. This research recognizes that these factors are not the sole contributors to successful adjustment, but that their presence indicates a need for intensive evaluation of the social and cultural environment. Nursing interventions may be directed toward palliation of the identified threats to adjustment.

Although several psychosocial variables were found to be significantly associated with adjustment, they cannot be considered as predictive at the present time. Given the expanding treatment alternatives and the physical and psychosocial cost to the patient, identification of the nature and influence of psychosocial factors on the adjustment process is an important area of continued research.
TO: Alice Anne Whittaker, RN, BSN
2641 S. Enchanted Hills Drive
Tucson, Arizona 85713

FROM: Ada Sue Hinshaw, R.N., Ph.D.
Director of Research

Jan R. Atwood, R.N., Ph.D.
Chairman, Research Committee

DATE: March 30, 1983

RE: Human Subjects Review: Influence of Psychosocial Factors on Adjustment to Continuous Ambulatory Peritoneal Dialysis

Your project has been reviewed and approved as exempt from University review by the College of Nursing Ethical Review Sub-committee of the Research Committee, and the Director of Research. A consent form with subject signature is not required for projects exempt from full University review. Please use only a disclaimer format for subjects to read before giving their oral consent to the research. The Human Subjects Project Approval Form is filed in the office of the Director of Research, if you need access to it.

We wish you a valuable and stimulating experience with your research.

ASH: des
8/82

----------------------------------

53
APPENDIX B

Influence of Psychosocial Factors on Adjustment to Continuous Ambulatory Peritoneal Dialysis

Patient Disclaimer

The purpose of this study is to determine the relationship between certain psychosocial factors and adjustment in a group of patients who have been or are presently in the CAPD program. You are being asked to voluntarily answer two questionnaires about your perceptions and preferences. You will be giving your consent to participate by filling out the questionnaires. By participating, you will also be giving the researcher access to your medical record.

There are no known risks to this study. The information you provide will not affect the care you receive at the dialysis center in any way. You may ask questions of the researcher or withdraw from the study at any time without affecting the care you receive at the dialysis center. The information you provide will be available only to the researcher, and will never be associated with your name.

Code # 54
APPENDIX C

CONSULTING PSYCHOLOGISTS PRESS, INC.
577 COLLEGE AVENUE
PALO ALTO, CALIFORNIA 94306

Ms. Alice Whittaker
2641 S. Enchanted Hills Dr.
Tucson, Arizona 85713

In response to your request of Feb. 23, 1983, permission is hereby granted you to reproduce the FES in large print format for use in a research project with dialysis subjects. (It was not clear to me whether you wished to use the entire test or just the Cohesion scale so I am covering all bases)

subject to the following restrictions:

(a) Any material used must contain the following credit lines:

"Reproduced by special permission of the Publisher, Consulting Psychologists Press, Inc., Palo Alto, CA 94306,

from The Family Environment Scale (publication)
by Rudolf Moos, PhD. (author)

Copyright 1974

Further reproduction is prohibited without the Publisher's consent."

(b) None of the materials may be sold or used for purposes other than those mentioned above.

(c) One copy of any material reproduced will be sent to the Publisher.

(d) Payment of a reproduction fee of ten cents a copy ($0.10)

You did not give me the N of your study. If you are using less than 50 copies there will be no fee. Otherwise there will be a fee at the above rate. Please remit without further notice and mail to my attention.

(e)

CONSULTING PSYCHOLOGISTS PRESS, INC.

By [Signature]

Date 3/7/83
APPENDIX D
FAMILY ENVIRONMENT SCALE
COHESION SUBSCALE

INSTRUCTIONS:

The following 9 statements are about families. You are asked to decide which of these statements are true of your family, and which are false.

You may feel that some of the statements are true for some family members and false for others. Circle TRUE if the statement is true for most members. Circle FALSE if the statement is false for most members. If the members are evenly divided, decide what is the stronger overall impression and answer accordingly.

Remember, we would like to know what your family seems like to you. So do not try to figure out how other people see your family, but do give us your general impression of your family for each statement.

1. Family members really help and support one another.
2. We often seem to be killing time at home.
3. We put a lot of energy into what we do at home.
4. There is a feeling of togetherness in our family.
5. We rarely volunteer when something has to be done at home.
6. Family members really back each other up.
7. There is very little group spirit in our family.
8. We really get along well with each other.
9. There is plenty of time and attention for everyone in our family.

TRUE  FALSE
TRUE  FALSE
TRUE  FALSE
TRUE  FALSE
TRUE  FALSE
TRUE  FALSE
TRUE  FALSE
TRUE  FALSE
TRUE  FALSE

"Reproduced by special permission of the Publisher, Consulting Psychologists Press, Inc., Palo Alto, CA 94306, from The Family Environment Scale by Rudolf Moos, PhD. Copyright 1974. Further reproduction is prohibited without the Publisher's consent."
WHAT TO DO: Some tests tell us what you can do best, but this one helps us know you better. Since no two people are the same, there are no right or wrong answers to most of these questions, but only what is true for you.

You have a separate answer sheet. On the ANSWER SHEET, there is a number for each question and by the number there are two little boxes, like this: □ □. Mark your answer for each question by putting an X in one of the boxes to show the side that fits you better, LIKE THIS:

EXAMPLES:

1. Would you rather play baseball or go fishing
   If you would rather play baseball, mark the first box, the left one, like this: □ □. If you would rather go fishing, mark the second box, the right-hand one, like this: □ □.

2. Do you like to play jokes on people or do you not like to do that
   If you like to play jokes on people, mark the first box, the left one, like this: □ □. If you do not like to play jokes, mark the second box, the right-hand one, like this: □ □.

3. After 2, 3, 4, 5, does 6 come next or does 7 come next
   In this last example, there is a right answer. It is the one on the left. But there are very few questions like this.

Inside there are more questions like these. When you are told to, start with number 1 and answer the questions. Keep these three things in mind:

1. Give only true answers about yourself. It will help you more to say what you really think.

2. You may have as much time as you need, but go fairly fast. Give the first answer that comes to you and do not spend too much time on any question.

3. Do not skip any questions. Answer every question one way or the other.
1. Would you rather help children play games or help fix watches?
2. Is ⅔ of 7 closer to 3 or closer to 5?
3. Do you always feel like doing what you planned or do you ever plan things and then not feel like doing them?
4. Is it fun to tell an obvious lie with a straight face or could you never do that?
5. Do you like to tell jokes or do you not like to do that?
6. Are you a strict person who does everything as well as possible or do you do some things just well enough to get by?
7. Do you show up well in social things or would you rather stay quietly out of the way?
8. Would you rather be an artist or a mechanic?
9. Do you make smart remarks that hurt people's feelings when they deserve it or do you never do that?
10. If you were good at both would you rather bowl or play chess?
11. After a busy day do you fall asleep easily or do ideas keep running through your mind?
12. Do you have times when you feel sorry for yourself or does that never happen to you?
13. If you had a lot of money to give away would you give it to science research or would you give it to a church?
14. When you are on a train or bus would you rather look out of the window or talk to people?
15. If a man wears a beard and dresses sloppily would you stay away from him or might he be nice to know?
16. When someone is bad tempered toward you, do you get over it quickly or does it bother you for some time?

GO RIGHT ON TO THE NEXT PAGE
17. In an office would you rather see people or draw house plans
18. After 3, 5, 7, 9, does 11 come next or does 10 come next
19. When people don’t listen to you, do you get impatient or does it not bother you
20. Most of the time would you rather "play it safe" or take a chance
21. Would you rather spend an evening quietly at home or at a lively party
22. Do you avoid saying things that bother people or do you sometimes like to
23. Are you the one who gets the party going or do you wait for someone else to do it
24. Are you always glad to fix mechanical things or would you rather sit around and talk
25. Do you think that most people tell the truth even if it might hurt them or do they tell the truth only when it won’t hurt them
26. When there is hard work to do, do you try to take rest breaks more than most people or less than most people
27. Can you stand things to be all mixed up or does it bother you
28. Do you ever feel that there is danger without any good reason or do you never feel that way
29. Would it be better if everyone went to church regularly or is that not too important
30. Do you like to take an active part in social things and committee work or are you most interested in things that you can do by yourself
31. Do your friends sometimes think your mind is not on what you are doing or do they never think that
32. Are you almost never jealous or are you often jealous
33. Does it bother you to be the center of interest in a group of people

34. If John is taller than Bill and Mike is shorter than Bill, is Bill the tallest

35. Do people misunderstand you when you mean well

36. Do you sometimes speak angrily to your parents

37. Do you like things to be quiet

38. Do you think people need to observe the rules more strictly

39. Do you feel shy in front of people when you need to talk

40. Would you rather be a good musician

41. When people are unreasonable do you keep quiet

42. Would you rather be a bookkeeper

43. Does it bother you if people think you are odd or strange

44. Even in the middle of a group of people do you sometimes feel lonely and worthless

45. Do we need more attention to old well-tried ideas about social matters

46. Are you always glad to get together with a group of people

47. Do you often jump into things too fast

48. Do you get very sad about little things

or do you like it

or is John the tallest

or does that never happen

or is it wrong to do that

or do you always like exciting things

or that they need to have greater freedom

or can you usually stand right up and talk

or a good soldier

or do you feel a strong dislike for them

or an artist

or does it not bother you at all

or do you almost always feel good

or more calm thinking of a new kind

or would you rather do things your own way when you want to

or do you take your time

or is that never a problem for you
49. Would you rather take care of trees in a forest or teach children in a school?

50. Does *little* mean the same as *thin* or the same as *small*?

51. Do you often get angry with people too quickly or are you slow to get angry?

52. Would you rather do without something than put a waiter to a lot of extra trouble or do you feel that extra trouble is part of his job?

53. Do you like to be serious most of the time or are you happy and laughing most of the time?

54. Do you just ignore messy streets or do they bother you?

55. Would you rather have a job where you work by yourself or a job where you had to go to one meeting after another?

56. Would you rather be a school-teacher or a great hunter?

57. When people are not doing the right thing do you show them up even if it takes some trouble or do you just let it go?

58. Would you rather hire workers to run machines or fix the machines when they break down by our own ideas or do you never feel that way or are the new ideas silly?

59. Should we live more by the rules of the group or do you just ignore messy streets or are we afraid of something for no particular reason or do we never feel that way or are the new ideas silly?

60. Are you afraid of something for no particular reason or do you just let it go or do you never feel that way or are the new ideas silly or do they need to be made every day or do you not dream very much?

61. Do you think that new ideas make old-time preachers look silly or in a resort or do you never feel that way or are the new ideas silly or do they need to be made every day or do you not dream very much?
65. Would you rather have a house alone in the deep woods or where lots of people live
66. After 2, 4, 6, 8, does 10 come next or does 9 come next
67. Do little things get on your nerves a lot or are little things not important
68. Do you sometimes say things that hurt people's feelings or do you try very hard never to do that
69. Do you like to make people laugh with funny stories or do you not like to do that
70. Is it very important to follow all rules or are there some rules you should not follow
71. Is it easy to go up and meet an important person or would you rather not
72. In a play would you rather be a jet pilot or a famous writer
73. When people are unreasonable and narrow-minded, are you still polite or do you show them up
74. Can people change your mind by appeals to your feelings or do your feelings not have anything much to do with what you think
75. When someone corrects you or blames you for something, do you try to show you are right or do you accept the blame
76. Would you rather be the one in charge of a group of people or just be one of the group
77. Do you like thinking games better or do you like sports better
78. Can you spend a whole morning without wanting to speak to anybody or would you never feel like that
79. Are you a practical person or are you often upset
80. Do you feel comfortable and calm or more of a dreamer

GO RIGHT ON TO THE NEXT PAGE
81. Would you rather teach children about their own feelings
or build a new building

82. After N, P, R, T, V, does X come next
or does W come next

83. Do your feelings usually come from what is going on around you
or do you get strong feelings that come without any real cause

84. If you have to tell people a lie do you have to look away
or can you look at them

85. Do you really enjoy all large groups of people such as parties or dances
or would you rather be alone much of the time

86. Do you usually do what you want to do
or what will be best for other people

87. When you join a new group does it take some time to fit in
or do you fit in right away

88. Would you rather have a job writing children’s books
or fixing electrical machines

89. Do you think that most people are honest only because they are afraid of getting caught
or that most people would be honest anyway

90. Can you take either side in an argument just to be sure that all sides are thought about
or would you not want to take the side you didn’t believe in

91. Are you always careful to believe only half of what you read
or can you depend upon the things you read

92. When someone fusses at you in public does it not bother you too much
or do you get very embarrassed and upset

93. Do you think we need stricter laws about Sunday
or more freedom to do what we like

94. Would you rather paint pictures
or run a social club

95. Do you like to make plans so that you will not waste time between jobs
or do you take things as they come

96. Do you have many problems
or are you getting along well
97. Do people say you talk too much or are you quiet

98. After 3, 6, 12, 24, does 36 come next or does 48 come next

99. When you get upset do you cool down again very quickly or does it take a while to calm down

100. In a strange city would you stay away from the parts of town that people say are dangerous or would you walk any place you wanted

101. Do people say that you are a serious person or that you are happy-go-lucky

102. Do you feel that some jobs do not need doing so well as others or that any job should be done as well as you can

103. Do you find it hard to speak to a large group of people or do you like it

104. Would you rather read about battles and war or about people’s feelings

105. If someone gets mad and yells at you, do you stay quiet and calm or do you yell back

106. Do you like to tackle problems that other people have made a mess of or would you rather start from the beginning

107. Do you think we should be very slow to lose the wisdom of the past or should we move faster to try new things

108. Do your friends think you have many new ideas or that you are good at following the ideas of others

109. If you had more money than you need, would you keep it in case you need it later or would you give some to a church

110. Would you rather work with a committee or on your own

111. Are you a person who gets things done or a dreamer

112. When you are going to catch a train or a bus do you get tense and nervous or do you feel you have enough time
113. In your spare time would you rather join a hiking club or a club that helps people

114. Is red more like blue or more like orange

115. Do you always have lots of energy when you need it or do you often feel too tired

116. Are you critical of other people's work or are you not like that

117. Do people say you are lively or do they say you are quiet

118. Do you think that most people take life too seriously or not seriously enough

119. Do you speak your mind no matter how many people are around or do you hold back when a lot of people are around

120. Would you rather fix machines that don't work or think about what life means

121. If neighbors cheat you in some small thing, would you rather show them up or just let it go

122. Would you like to be a writer about music and plays or would you not like that kind of work

123. Would you rather ride in a car with someone else driving or do you like to drive a car

124. When the teacher calls your name are you glad to show what you can do or are you afraid you have done something wrong

125. Do you think our country should keep its army strong or that we should depend on good will among all countries

126. Do you like to be active in social things or would you rather be alone

127. If people get mad at you would you get upset too or would you try to calm them down

128. Do you usually feel good no matter how many troubles there are or do you get to feeling low
APPENDIX F

Demographic and Adjustment Data Sheet

Interview Data

Age __________
Sex __________

When did you start on CAPD? month _______ year_______

Have you participated in a CAPD patient support group at the dialysis center? yes______ no______

Were you on hemodialysis before you started on CAPD? yes ______ no_______

What kind of renal replacement therapy are you presently on? hemodialysis ________
CARD _______________
Transplant ___________

Medical Record Review

# months on CAPD _________
# peritonitis episodes ____________

Incidence of peritonitis ____________

Serum Albumin 1._________
2._________
3._________

\text{mean = ____________}
\text{code # ________}
LIST OF REFERENCES


