

STRESS IN HEMODIALYSIS NURSING

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A THESIS

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HEALTH SCIENCES INSTRUCTION PROGRAM

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To the Provost of the Graduate School:

I am submitting herewith a thesis written by Patricia K. Ely entitled "Stress in Hemodialysis Nursing." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Health Sciences Instruction.

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This study addressed the differences in stress levels of hemodialysis personnel and their relation to demographic variables. Sixty-eight individuals from four outpatient hemodialysis centers volunteered to participate. The sample included registered and licensed vocational nurses and patient care technicians on the day and night shifts. Each completed a demographic questionnaire and four stress evaluations developed by John Adams. Two instruments measured work related stress and two measured nonwork-related stress. Reliability of the instruments was confirmed by Cronbach Alpha reliability studies.

A multiple analysis of variance was used to determine significant stress level differences between charge and primary care personnel on the day and night shifts. No significant differences were demonstrated. A canonical

correlation was used to determine a relationship between demographic variables and stress levels. A correlation existed with older, married individuals exhibiting lower stress level scores and non-married less educated respondents having higher scores.

## TABLE OF CONTENTS

ACKNOWLEDGMENTS . . . . .	iii
ABSTRACT. . . . .	iv
LIST OF TABLES. . . . .	viii
Chapter	Page
I. INTRODUCTION. . . . .	1
Statement of the Problem. . . . .	2
Purposes of the Study . . . . .	2
Hypotheses. . . . .	2
Definition of Terms . . . . .	3
Assumptions . . . . .	5
Limitations . . . . .	5
Significance of the Study . . . . .	6
Summary . . . . .	8
II. REVIEW OF THE LITERATURE. . . . .	9
Stress Concepts . . . . .	9
Stress in Work Settings . . . . .	16
Stress in Nursing . . . . .	22
Stress in Hemodialysis Nursing. . . . .	26
Summary . . . . .	29
III. METHODOLOGY . . . . .	30
Setting . . . . .	30
Population/Sample . . . . .	31
Protection of Human Rights. . . . .	32
Instrument. . . . .	32
Method. . . . .	35
Treatment of Data . . . . .	36
Summary . . . . .	37

Chapter		Page
IV.	FINDINGS. . . . .	38
	Demographic Data. . . . .	39
	Stress Instrument Scores. . . . .	43
	Reliability of the Instruments. . . . .	45
	Multiple Analysis of Variance . . . . .	45
	Canonical Correlation . . . . .	46
	Summary . . . . .	49
V.	SUMMARY, CONCLUSIONS, DISCUSSION OF FINDINGS, AND RECOMMENDATIONS. . . . .	50
	Summary . . . . .	50
	Conclusions . . . . .	51
	Discussion of Findings. . . . .	52
	Recommendations . . . . .	57
	REFERENCES. . . . .	61
	APPENDIXES	
A.	Permission Form . . . . .	65
B.	Demographics. . . . .	67
C.	Stress Evaluation Instruments . . . . .	69
D.	Letter to Director of Nurses. . . . .	80
E.	Cover Letter. . . . .	82

## LIST OF TABLES

Table	Page
1. Percentile Scores for Stress Evaluations in Adams' 1978 Study. . . . .	34
2. Sample Distribution by Marital Status. . . . .	39
3. Sample Distribution by Educational Levels. . . . .	40
4. Sample Distribution by Number of Children . . . . .	41
5. Sample Distribution by Overtime Hours Worked and Years of Hemodialysis Experience . . . . .	42
6. Sample Distribution by Position and Shift . . . . .	43
7. Work and Nonwork Stress Instruments Mean Scores . . . . .	44
8. Weights of Dependent Variables (Stress Evaluation Scores). . . . .	47
9. Weights of Covariates (Demographics). . . . .	48

## CHAPTER I

### INTRODUCTION

It is well documented that the majority of people working in the medical profession experience some degree of stress and its related problems. Countless books and articles have been written defining and describing this phenomenon in a variety of medical fields and professional levels.

Hemodialysis nursing, as one of these medical fields, is a highly specialized area which is unique in many ways. It is a relatively new nursing field with a small professional population compared to other specialty areas. A review of the literature revealed very little research on stress for this group. The hemodialysis nurse must draw on knowledge of chronic care, critical care, medical and psychiatric nursing as well as be skilled in patient education and working with families. This study attempted to determine the extent of stress in a hemodialysis nursing population and pinpoint individuals most susceptible to this stress.

### Statement of the Problem

The problems addressed in this study were:

1. Stress levels of charge and primary care personnel employed in outpatient hemodialysis centers in North Central Texas is unknown.
2. The relation between stress levels of hemodialysis personnel and demographic variables, e.g. age and education, is unknown.

### Purposes of the Study

The purposes of the study were:

1. To determine differences in work and nonwork-related stress levels between charge and primary care personnel working on the day and night shifts in outpatient hemodialysis centers.
2. To determine differences in work and nonwork-related stress levels of hemodialysis personnel with respect to age, education, marital status, number of children, overtime hours worked weekly, and years of hemodialysis experience.

### Hypotheses

Having identified the problems and purposes of this study, the following were hypothesized:

1. There is no significant difference in work and nonwork-related stress (as measured by Adams' (1980) four



evaluation instruments) between charge and primary care personnel in four outpatient hemodialysis centers in North Central Texas.

2. There is no significant difference in work and nonwork-related stress (as measured by Adams' (1980) four evaluation instruments) between personnel on the day shift and on the night shift in four outpatient hemodialysis centers in North Central Texas.

3. There is no significant relationship between work and nonwork-related stress (as measured by Adams' (1980) four evaluation instruments) and age, education, marital status, number of children, overtime hours worked weekly, and years of hemodialysis experience.

#### Definition of Terms

For the purposes of this study, the following definitions were used:

1. Charge personnel. This group includes administrative and management registered nurses including the Director of Nurses, head nurses, and charge nurses.

2. Day personnel. This group includes nurses and patient care technicians working the first shift of the day.

3. Night personnel. This group includes nurses and outpatient care technicians working the second shift of the day.

4. Nonwork-related stress. This is a physiological response to nonwork-related demands which are beyond an individual's available resources.

a. Chronic. This form of stress is related to the continual pressure conditions of home and societal life and was measured by Adams' Chronic Nonwork-Related Stress Evaluation.

b. Episodic. This form of stress is related to individual life events and was measured by Adams' Episodic Nonwork-Related Stress Evaluation.

5. Outpatient hemodialysis center. This is a facility for hemodialyzing chronic renal failure patients.

6. Primary care personnel. These are direct care registered nurses (R.N.s), licensed vocational nurses (L.V.N.s), and patient care technicians (P.C.T.s).

7. Stress. This is a non-specific physiological response of the body to any demands made upon it (Selye, 1974).

8. Work-related stress. This is a physiological response to work environment demands which are beyond the individual's available resources.

a. Chronic. This form of stress is related to organizational events which continue over an extended period of time and was measured by Adams' Chronic Work-Related Stress Evaluation.

b. Episodic. This form of stress is related to organizational events which occur occasionally and was measured by Adams' Episodic Work-Related Stress Evaluation.

#### Assumptions

In the framework of this study, the following assumptions were made:

1. Hemodialysis charge and primary care personnel have elevated work and nonwork-related stress levels.
2. The stress levels, as measured in this study, in each of the four hemodialysis centers will be similar.
3. Work and nonwork-related stress levels can be measured.
4. Hemodialysis charge and primary care personnel will respond honestly on measurement instruments.

#### Limitations

The boundaries of this study were dictated by the following limitations:

1. Participants in the study were limited to personnel in four hemodialysis centers in North Central Texas.
2. A convenient non-randomized sample was used.

3. Reliability of the four Adams' (1980) stress instruments was not known and had to be determined ex post facto.

#### Significance of the Study

Hemodialysis is a high stress nursing field with unique characteristics not found in other areas. Campbell (1981) noted that hemodialysis nurses deal with a patient population whose sick role was different and who did not meet expectations of the ill person. Nurses are trained to assist patient's return to a normal life, yet dialysis cannot do that. The patients have frequent complications and setbacks because their illness is chronic. This researcher has often seen a lack of patient compliance lead to further complications and in some cases, passive suicide. Because patients must dialyze several times a week, close relationships can be formed with staff members who become intricately involved in the patients' lives. Because of these close relationships, it is more difficult to accept the patient's lack of interest in his own welfare.

Campbell (1981) further stated that not only does the hemodialysis nurse have the responsibility for maintaining life support systems in a highly technical environment, but must also function in a high emotional risk area. He

named three characteristics that distinguish hemodialysis nursing from other nursing fields. First, the nurse may experience social loss either from the actual death of a patient or the patient's loss of independence. Second, the nurse's self concept, which is measured by self image, may be threatened. A need to be liked and respected may interfere with the ability to care for the patient. Patients responding negatively may induce the nurse to avoid them leading to guilt feelings on both sides. Third, because nurses see themselves as health restorers their professional image is threatened by the patient's inability to be restored.

Calhoun (1980) reported that nurses in general, with higher levels of perceived stress, were more likely to experience somatic symptoms and were less productive on the job. Not only was productivity lower, but quality of patient care was adversely affected and the somatic symptoms led to increased absenteeism and job turnover. Smith & Selye (1979) concurred with these findings and believed that nurses who were exposed to chronic occupational stress could never give the high quality care and support that patients need.

Although the high stress level of hemodialysis nursing has been recognized, there have been relatively few articles addressing the problem. A study in this

field seemed, therefore, important and timely. Data from this study will be made available to the four hemodialysis centers which participated in the study and to the parent company that operates them. Presence of significantly high stress levels exhibited by the staff members tested may warrant encouragement to the individual dialysis centers to make changes. These changes might be required in both the work environment and policies. High stress levels might also indicate the need for stress management workshops. This study could then be used as a pilot in other hemodialysis centers across the country and add to the general body of information for the nursing profession.

#### Summary

Chapter I introduced the problem of stress in hemodialysis nursing. The problem and purposes of the study were stated and hypotheses formulated on the results of the literature review. A working definition of frequently used terms was given to be used within the framework of this study. Assumptions and limitations were addressed and, finally, the significance of this research project was discussed. Believing there was a need for research in the area of stress in hemodialysis nursing, this study was begun and followed the framework previously stated.

## CHAPTER II

### REVIEW OF THE LITERATURE

A review of literature was done utilizing ERIC, MEDLINE, Index Medicus, and Index to Nursing and Allied Health Literature. Related areas of investigation were stress concepts, stress in work settings, stress in nursing, and stress in hemodialysis nursing. This chapter is a review of the findings of that literature search.

#### Stress Concepts

Albrecht (1979) addressed the problem of stress: the 20th century disease.

A strange new disease has found its way into the lives of Americans. . . . It has been steadily growing, affecting more and more people with ever more serious consequences. . . . This disease is exacting a steadily increasing toll of human health and emotional well-being. It is not really a disease in itself but, rather a runaway condition of a normal body physiological function, namely, stress. (p. 1)

Stress is a multidimensional phenomenon with a host of detrimental effects (Girdano & Everly, 1979). Because of this, the study of stress is a field relevant to everyone's concerns about successful living. Stress includes more than behaviors in illness and trauma; it extends to

life tasks and developmental crises. Stress can result from over- and understimulation work load, boredom, deprivation, interpersonal conflicts, task failure, and rejection (Jacobson & McGrath, 1983). According to Albrecht (1979), most chronic stress felt by Americans today resulted from anxiety. Apprehension, conflict, crowding, personal problems, rapid societal changes, and work-related pressures are threatening health and well-being. Stress, therefore, was seen by Jacobson and McGrath as neither an internal nor external response exclusively, but as the whole area of problems that produce stress responses.

According to Adams (1980), the stress problem was very big and growing. Stressors existed in all human activities and environments and, although a certain level was necessary for peak performance in work and play, excessive levels were potentially harmful. Selye (1974) believed these excessive levels could cause physical and mental illness and prevent attainment of our goals.

According to Adams (1980), it has been estimated that the major causes of premature death (before age 70) in the United States are, in part, due to lifestyle and environment, in other words, stressful experiences. In every age group, it is "diseases of living" rather than other disease agents causing the majority of deaths.



Albrecht (1979) felt very strongly that the exponential century has been, in large part, responsible for the increase in stress observed today. The years from 1900 until the present have seen more change than any other period in human history. The 20th century can be described as a time of change occurring at an accelerating rate. Observers of American society are alarmed at the accelerating pace at which life processes and surroundings are changing. Toffler (1970) suggested that this accelerated rate of change has deprived Americans of stability, continuity, and predictability which make life relaxing and assuring. These individuals have been forced into a state of continuous adaptation because they live in a society where the present is replaced by the unfamiliar future at a rapid rate. Girdano and Everly (1979) noted that the increased birth rate along with the growth of urban areas had led to over-population, noise, air, and water pollution, job dislocation, and lack of privacy. Better communication and transportation have enabled accomplishment of more in less time and attempts to keep up with technological changes have affected value systems. According to Girdano and Everly, the basic values in family structure, religion, education, work and sexual identity are in a constant state of change and change

itself epitomizes psychological pressure. Albrecht (1979) expressed concern that

the nature of our world as we enter the last part of this century, with its bewildering change, ever increasing demands for adaptation, and a growing sense of apprehension about the meaning of it all, is taking its toll on psychological well-being and physical health. (p. 7)

Selye (1974) noted that the major problem in the lives of all individuals, from the time the umbilical cord was cut, was adaptation. According to Selye, this need for constant adapting and utilization of adaptive energy followed humans throughout their lives. The precursors of the stress concept developed from the knowledge that adaptive functions to maintain homeostasis in a changing environment were controlled by the sympathetic nervous system.

According to Girdano and Everly (1979), there were only minute physical differences between modern humans and their prehistoric ancestors. Central nervous and endocrine systems which allowed early man or woman to meet physical emergencies are the same as those found in 20th-century man or woman. The difference exists in the extent to which modern persons' conscious minds control their bodies (Girdano & Everly). Albrecht (1979)

noted that anything which challenged the human body, such as hunger, heat, cold, pain, disease, or emotional arousal, caused the electrochemical system to adopt a "war footing" or fight or flight response. This response assisted the body in preparing itself quickly and efficiently for physical battle or flight to escape the problem. Adams (1980) stated that these challenging conditions which caused a non-specific chain reaction inside humans were stressors. Girdano and Everly believed that because men and women could not totally subdue the innate stress response shared with prehistoric humans, even if the stressor was an emotional one requiring no physical action, a predictable arousal of psychophysiological systems would occur. If prolonged, fatigue, malfunction, and disease would result.

Albrecht (1979) described the stress response as a chain of events within the central nervous system triggered by a stressor. The chain began in a portion of the brain called the hypothalamus. When stress was perceived, the hypothalamus triggered the pituitary gland to release adrenocorticotrophic hormone (ACTH) into the bloodstream. According to Albrecht, when ACTH reached the adrenal glands, these glands intensified output of adrenalin and corticoids which reach every cell of the

body within 8 seconds. At the same time, stimuli travel nerve pathways to the heart, lungs, and muscles. Adams (1980) noted that the pituitary also secreted vasopressin which constricts arterial walls and increases blood pressure and thyroid stimulating hormone which leads to increased metabolism.

Albrecht (1979) described the action of adrenalin which stimulated the cardiovascular system increasing heart rate, white blood cell count, oxygen level, and clotting agents. The corticoids stimulate the pancreas to release glucagon, increasing the blood sugar levels. Albrecht stated that the liver became involved during the stress response by converting a glycogen into glucose for brain and muscle use. Breathing became more rapid and intense to supply the additional oxygen needed for efficient burning of the glucose. The heart beat harder and more rapidly to increase blood supply to the brain and muscles. Blood was shunted away from the stomach and intestines in favor of higher priority needs. This stress reaction, as described by Albrecht, was a coordinated chemical mobilization of the entire human body to prepare for life and death struggle.

Adams (1980) stated that this stress response reaction originally evolved to help human beings escape

from predators. As was previously stated, there is little physical difference between modern humans and their cave-man ancestors, therefore, the same physiological response is triggered, but the stressors can seldom be escaped.

Adams noted that the original response occurred quickly, but if no physical action took place, dissipation of the stress hormones occurred over an extended period of time.

Selye (1974) suggested that humans are born with a specific amount of adaptive energy which they draw on continually throughout their lives. He postulated a general adaptation syndrome consisting of three stages: alarm reaction, resistance, and exhaustion. According to Selye, the initial alarm reaction occurred in response to a stressor setting off the chemical chain. In the second stage, the body attempted to resist, but eventually succumbed in the final stage with exhaustion. The last stage might lead to malfunction, disease, or death of the organ system or the person.

The weakest link in the body will break down first, but Selye (1974) believed it was possible to increase resistance by conditioning and choice of lifestyle. He believed that it was impossible to totally avoid stress except through death and that most people equally disliked a lack of stress as well as an excess of it. According to

Selye, each individual must carefully analyze himself or herself and try to find the particular stress level which feels most comfortable. He suggested selection of an environment most in line with one's innate preferences so as to eliminate the need for frustrating constant readaptation. Selye believed that one of man's or woman's ultimate aims in life was to achieve a sense of security. Accomplishing this depends on finding one's optimal stress level and using adaptive energy at a rate and in a direction suited to personal preferences.

Adams (1980) investigated these responses in nonwork situations exploring both chronic and episodic stressors. He developed instruments for measuring the level of stress produced in these situations which will be discussed in chapter III. Episodic nonwork-related stress, according to Adams, dealt with life events found to produce individual stress reactions. Chronic, nonwork-related stress is related to potentially stressful conditions at home and in society.

### Stress in Work Settings

According to Quick and Quick (1984), stress and strain are universal experiences in the life of every organization and every executive, manager, and individual employee. The individual and organizational costs of

mismanaged stress are enormous. Mismanaged stress can lead to physical and mental illness, dissatisfaction, absenteeism, turnover, poor quality productivity, and management, and management-labor conflicts. Quick and Quick (1984) stated that organizational stress was the unconscious mobilization of an individual's energy when confronted by work demands. They identified four major sources of stress in organizations. These sources were:

1. Task demands--career progress, routine jobs, performance appraisal, work overload, and job insecurity.

2. Role demands--role conflict, role ambiguity related to behavior others expect of us.

3. Physical demands--temperature, illumination, sound, office design.

4. Interpersonal demands--status, abrasive personalities, group pressures (p. 19).

Ivancevich and Matteson (1980) listed five categories of stressors which they believed to be relevant in work settings. First were extraorganizational stressors which, although outside the work life, influence performance of the job. Stressors such as marital problems, financial difficulties, and political uncertainties fall into this category. Second was individual stressors such as role overload. Third was group stressors such as intragroup

conflicts. Fourth was organizational stressors such as job design and the fifth was physical environment.

Ivancevich and Matteson noted that stressors multiplied as the organization grew in size and complexity, as jobs specialized more, and as human obsolescence became a greater threat than mechanical obsolescence. Although Americans live in the most technologically advanced and industrialized nation in the world, noted Ivancevich and Matteson, the productivity per person ranked behind Japan, France, Canada, West Germany, and Italy. They concluded that a partial explanation may be found in the increasingly stressful environments and poor ability by the average American to deal with stressors.

Levi (1981) noted that during the last century, work has changed from being the completion of a well-defined and recognized end product to a breakdown of activities of meaningless subunits. Levi believed that the growing size of these units has given rise to a feeling of remoteness between management and workers. Rapid spread of automation has taken the worker's hands off the task and, instead, required only monitoring dials and instruments. The worker is required to remain alert in a situation with minimal stimulation. Levi determined that excessively high or low stimulation levels could be stressful and



developed a six category stimulation continuum. The six categories ranging from low to high levels were as follows:

1. Underloading--tasks require superficial attention, routine work.

2. Underloading--attention required only incidentally.

3. Normal level of mental activity--tasks permit frequent attention to information other than the actual task, but occasionally task requires complete attention.

4. Normal level of mental activity--task requires frequent conscious attention, but some moments are free to handle information other than actual task.

5. Overload if long endurance time--tasks requiring continuous control, but no special motivation required, e.g. driving in traffic.

6. Using reserve capacity--no moment of attention free to handle information other than actual task. High motivation required, e.g., peaktime air traffic controller, driving an ambulance in heavy traffic (Levi, 1981, p. 35).

Adams (1980) divided stress into four specific categories. Two of these have already been addressed. The two work-related stress categories are episodic and

chronic. Episodic work-related stress was brought about by organizational events of varying severity or duration. Chronic work-related stress resulted from day to day conditions. Selye (1974) stated that stress was associated with every kind of work, but that work was a basic need of humans. The question was not whether people should or should not work, but what kind of work best suited each person. Adams took this a step further by saying that if the stress level was intolerable, one had the option to attempt changing the situation, readjusting one's own attitudes and preferences, or learning to live with the situation.

Albrecht (1980) believed that most troublesome stressors were built into the structure of the job negating the possibility of change. He stated that workers who dealt with distressed persons, such as the physically or mentally ill or welfare recipients, suffered an overload of dissatisfied contacts and a deficit of positive strokes. Albrecht noted that certain jobs put the workers' lives in jeopardy such as police work or fire fighting and that there is a constant bombardment of stressors. Other jobs are so designed that the workers are under constant extreme levels of unrelieved stress such as air traffic controllers. Albrecht believed that

everyone experiences job stress to some extent, but if the stress level was outside the limits for a particular worker, problems in job performance and personnel health resulted. The worker was not able to function at full potential and effectiveness and the effects of job stress added to the individual's total score of stress points which impacted on his or her health.

Girdano and Everly (1979) stated that stressors in the work environment such as deadlines, excessive responsibility and accountability, lack of managerial or subordinate support, and excessive role expectations from self, supervisors, or subordinates could all create a stressful overload. This type of overload occurred when the work environment placed demands upon the individual beyond that person's available resources. An article printed in the United Food and Commercial Workers newsletter (UFCW Action, 1983), stated that lack of control over the work environment was a major stress factor and that management should clearly be concerned with the effects of stress. Girdano and Everly (1979) were not surprised to find that, in the time- and money-oriented American society, many jobs were so stressful that they have even been unhealthy to the worker. Levi (1981) noted that work should

respect the worker's life and health, leave him free time for rest and leisure, and enable him to serve society and achieve self fulfillment by developing his personal capacities (p. 14).

### Stress in Nursing

Bailey (1980) believed that today's nurse is vulnerable to job-related stress because of several developments and issues in nursing. The nurse has new and expanded roles with ever-increasing demands for accountability. These expanded roles require new knowledge and skills and role clarification. Today's nurse is frequently confronted with new laws, regulations, and procedures in the practice of nursing. Sweeping changes are occurring in nursing educational systems relative to requirements for admission and academic programs, and nurses themselves are divided on professional issues such as entry into practice.

Ivancevich and Matteson (1980) concluded that nurses were involved in jobs that produce excessive stress due to the necessity of daily work with treatment and care of the sick. The study was divided into two categories, organizational and job. In the study

of organizational stressors, Ivancevich and Matteson felt that human resource development was of concern because hospitals seemed to display little interest in training, developing, and supporting the growth of nurses. They felt that political issues focused on power plays occurring between management, staff, and physicians. Ivancevich and Matteson looked at several more potential organizational stressors and found the following to rank high as stress sources: poor working conditions, lack of rewards for tasks completed, unacceptable levels of communication, underutilization of professional skill, inability to participate in decision-making, changes in the hospital and procedures, hospital environment, supervisor's style, and lack of control over job and self.

Ivancevich and Matteson (1980) listed several factors in the job category. Responsibility for people was of most concern to the nurses. Although this responsibility is inherent in nursing, it appeared to cause a relatively high degree of stress. Time pressures for completing tasks was listed as the second most stressful factor. Along with these major stress factors, nurses also listed role conflict; relationships with peers, supervisors, and subordinates; task overload; career progress; and job security.

According to Baldwin (1980), nurses spend half of their waking hours at work. Added to the inherent stressors in nursing and the hours spent in the work environment was the popular belief that experiencing work stress in nursing was a sign of personal weakness. This additional guilt stressor was not consistent with the growing evidence supporting the belief that jobs involving responsibility for people are stressful. Davitz and Davitz (1975) stated that individuals who chose this type of occupation entered nursing school with a strong sense of idealism that was reflected in a kind of sympathetic reaction to everyone who was suffering. The realities of practice provided a sharp jolt to this idealism.

Gardner and Hall (1980) noted that persons entering a medical profession had a high expectation of their ability to help others. They, in turn, received satisfaction from the results of their work. When those results were not satisfactory, however, it could be particularly stressful and debilitating. An example of this would be caring for the chronically or terminally ill, who represent an affront to healing. Gardner and Hall believed that the constant atmosphere of death, loss, and sorrow took its toll. Davitz and Davitz (1975) concluded, from responses of nurses, that death and dying elicited the strongest emotional responses.

Hillier (1981) conducted a study to determine stressors in nursing and determined that the nursing culture itself was primarily responsible. This culture depersonalized stress events such as death and pain, inhibited overt interpersonal conflict at the expense of personal innovation, and inhibited development of supporting ties among nurses, resulting in apathy about or fear of collective activity. According to Hillier, the system espoused overall conformity and routine at the expense of an individualistic response by nurses to patients.

The nurse, stated Stillman and Strasser (1980), stands in the middle: a target between physicians, supervisors, and co-workers on one side and patients and families on the other. Taylor and Gideon (1981) observed that day in and day out, nurses minister to others, but no one ministers to them. They stated that support givers need support and emotional sustenance. Without this support, there is no joy in what they are doing and, eventually, the work becomes too painful to continue.

Calhoun (1980) cited a 1962 community hospital study reporting that the quality of patient care showed a definite decline when conflict was present among the staff. He also noted that stress was responsible for lower productivity, higher absenteeism, loss of work time

from disease, premature death, increased accident rates, higher job turnover, increased work errors, and narrowing of attention resulting in poor judgment.

McMillan (1980) contended that stressed nurses may, in the end, become incompetent at work. According to Tierney and Strom (1980), each nurse must be willing to periodically reevaluate his or her goal for professional life and examine what stands in the way of initiating changes that will allow for the practice of nursing.

#### Stress in Hemodialysis Nursing

Gerber and Nehemkis (1980) observed the unique stresses involved in dialysis nursing. According to the researchers, the renal dialysis unit was a unique medical setting. It was identified as an intensive care unit, yet also as a chronic care setting. Patients and staff are together as much as 20 hours a week. The patient often experiences pain and discomfort during their treatments and looks to the staff for relief. Gerber and Nehemkis noted that patients also depended on the staff to monitor the machinery and make necessary adjustments and to react with split second emergency attention to cardiac complications. These staff members were often involved in intense, ongoing relationships with patients and families, which increased their stress when faced



with patient mortality, medical emergencies, uncooperative and depressed patients.

Devins, Anthony, Mandin, and Taylor (1983) felt that dialysis nurses could develop feelings of job dissatisfaction and distress as a result of prolonged and intensive contact with one or more depressed patients. They noted that these nurses also dealt with uncooperative, demanding, and hostile nurse-directed patient behavior; frustrated medical expectations due to the failure of many patients to achieve nurses' desired levels of adjustment; and doubts about the "rightness" of dialysis for all patients. Devins et al. believed that these conditions led to feelings of futility for nurses in attempting to fulfill their traditional roles as healers. They believed that these feelings may have accounted for the high turnover rate of dialysis nurses which has exceeded those of most other nursing fields.

A study conducted by Mulkerne and Tucker (1983) provided additional stress factors named by dialysis nurses. These included low professional status, inadequate social service support for patients, boredom from the repetitious nature of the tasks, low pay, and inflexible work schedules. Dickerson (1980) suggested that the attitudes of others was a contributing factor to stress. He noted

that the physician who felt he or she was fighting a losing battle, created an atmosphere of defeat and hopelessness which permeated through the staff. In addition, the nurse had to endure behavior swings and changes in patients and, eventually, came to realize a lack of needed job satisfaction. Dickerson believed that this lack of reward, combined with frustration and the emotionally draining aspect of dialysis, could lead to increased turnover rates.

Freudenberger (1984) believed that dialysis nurses, who were fully aware of their patients' conditions, were threatened on two dimensions. First, as skilled workers, they felt their competence to heal was on trial. Second, as human beings vulnerable to illness and death, they might fear becoming patients. According to Freudenberger, the hours of relentless togetherness intensified the nurses' feelings and allowed a quasi-family relationship to develop in the dialysis unit. Any nurse, technician, or doctor working in a dialysis unit, stated Horton (1981), knew a patient could be lost at any time. As hard as people in these positions tried to stay detached, it was often impossible. Denial of the gravity of the patients' conditions was a mechanism often used by nurses to protect themselves, however, bouts of depression still occurred when patients died.

Recognizing the stressful nature of dialysis nursing, a unit administrator, Stuart (1980) made a list of the qualifications she felt were necessary in employees. The primary consideration when interviewing job applicants was an ability to work well under stress because this type of nursing has been shown to be psychologically demanding and stressful.

#### Summary

This chapter presented a review of the literature. A variety of texts and articles were used to investigate studies in the stress field. Stress, in general, was discussed with attention to etiology and physiology. A discussion of stress in work settings, nursing, and hemodialysis nursing completed the chapter.

## CHAPTER III

### METHODOLOGY

A descriptive research study was conducted for the purpose of determining stress levels of nurses working in chronic hemodialysis units and the correlation between stress levels and demographic variables. This chapter discusses the setting, population/sample, instrument, and method used in this study.

#### Setting

Four outpatient chronic hemodialysis centers in North Central Texas were utilized for the collection of data. Three centers had patient populations over 200, each dialyzing three times weekly. One of the centers was smaller, having a patient population of approximately 50 patients. All four centers are operated by one parent company and are similar in design and procedures.

The typical dialysis room, in each center, was large with rows of chairs and machines facing each other. Crowding existed because of the amount of equipment necessary. Each patient care station consisted of a recliner

chair, television, blood pump, negative pressure pump, dialysate delivery system, positive and negative pressure gauges, heater, blood detector, sonalarm for air detection, blood lines, and dialyzer. Each nurse was responsible for 2-4 of these stations at one time. There was a constant noise level from machinery, patients, televisions, and alarms. The primary care personnel have a work table and stool in each patient care area which allows them to stay close to their patients at all times for maximum safety.

#### Population/Sample

The population consisted of approximately 160 individuals at the time this study was begun. Because of turnover, that number changed during the time this research was being conducted. The group included registered nurses, licensed vocational nurses, and patient care technicians in both charge and primary care positions. The charge personnel were directors of nurses, head nurses, charge nurses, educators in peritoneal and home hemodialysis and continuing education, and transplant coordinators. The sample was made up of 68 individuals who volunteered to participate in this study. This sample represented 42.5% of the total population in the four dialysis units.

### Protection of Human Rights

This study was exempt from the Human Review Committee because it was a survey. Participation was on a voluntary basis and names were not used. Confidentiality was maintained in this way. Permission to conduct the study was received from the administrator and medical director in each facility (Appendix A). It was assumed that stress levels in the four centers would be similar, therefore, the accumulated data were profiled to further assure confidentiality and the names of the individual centers were not used.

### Instrument

Each participant was asked to complete a demographic data sheet which was developed by the researcher (see Appendix B). In addition, four instruments were used to measure stress levels. These were developed by Adams (1980) and used with his permission (Appendix C). Each of the four instruments was scored by adding the values supplied by the participants. The four scores were treated individually. Division of scores into low, medium, and high ranges was determined in accordance with the findings of a study conducted by Adams in 1978. Five hundred seventy administrators, managers, and educators participating in a stress management workshop, completed

these four instruments. The scores were divided into percentile levels (Table 1).

The Episodic Work-Related Stress Evaluation measured stress in the work environment brought about by organizational events. The total possible score was 1,297. A score of 0-159 was considered low, 160-280 medium, and 281-1,297 was determined to be a high score.

The Chronic Work-Related Stress Evaluation measured stress produced by events or conditions in the work environment existing over an extended period of time. The score range was from 25-125. A low score was from 25-55, medium was from 56-64, high from 65-125. The total possible score was 125.

The Episodic Nonwork-Related Stress evaluation measured stress produced by life events. The total possible score was 2,093. A score of 0-93 was considered low, 94-170 was medium and 171-2,093 was assigned a high value.

The Chronic Nonwork-Related Stress evaluation measured stress produced by continual pressure conditions of home and societal life. The score range was from 16-80. A low score was 16-28, medium was 29-35, and high was 36-80. The total possible score was 80. Each of the four stress evaluation instruments was scored by adding the numerical responses supplied by the subjects.

Table 1

Percentile Scores for Stress Evaluations in Adams'  
1978 Study

Percentile	EWR Stress Evaluation Score	ENWR Stress Evaluation Score	CWR Stress Evaluation Score	CNWR Stress Evaluation Score
90	480	327	76	44
80	394	254	71	40
70	330	206	67	37
60	280	170	64	35
40	232	142	61	33
40	195	120	58	31
30	159	93	55	28
20	129	64	50	26
10	80	37	43	22

Note.

EWR--Episodic Work-Related

ENWR--Episodic Nonwork-Related

CWR--Chronic Work-Related

CNWR--Chronic Nonwork-Related



### Method

A letter describing the study and its importance was sent to the director of nurses in each of four outpatient dialysis facilities (Appendix D). The forms for permission to conduct the research were sent to the administrators and medical directors of the four units prior to contact with staff members. All four were signed and returned. Before signing, however, one medical director requested copies of the evaluation instruments to review before giving approval for his staff to participate in this study.

Telephone calls to the directors of nurses were made to ascertain the number of employees eligible for participation in the study and then evaluation packets were hand carried to the individual centers. Each packet contained a cover letter explaining the purpose of the study (Appendix F), a demographic data sheet asking for age, level of education, marital status, number of children, overtime hours worked weekly, and years of dialysis experience, Adams' (1980) four stress evaluation instruments, and a plain white envelope. All eligible staff members were given a packet, asked to complete the forms and return them, unsigned and sealed in the envelope. Upon receiving the completed forms, the

directors were asked to notify this researcher so they could be collected and analysis begun. Less than 50% return from any center would warrant a follow-up visit to encourage further participation.

#### Treatment of Data

All data were processed using the SPSS-X program on The TWU DEC 20 computer. Several statistical methods were used. Each individual's scores from the four evaluation instruments were entered into the computer with the demographic data.

The demographic data were subjected to a frequency and percentage program to obtain a profile of the sample. The results are reported in tables.

Reliability studies using Cronbach alpha were used on the instruments. Reliability was to be established for acceptance of the tools used to measure stress levels. An alpha greater than .75 would be considered acceptable.

A multiple analysis of variance was used to test Hypotheses 1 and 2. While it would be possible to test the difference in stress levels of the four groups using t-tests, the number of tests required would be six. This is determined by the formula  $N(N-1)/2$ . One MANOVA replaces six t-tests and is useful when there are two or more independent variables (day and night shifts,

charge and staff positions) and two or more criterion measures (stress level scores in each of the four groups). The scores on four instruments were analyzed in the four groups of subjects and differences were to be determined as hypothesized. Alpha less than .05 indicated a statistically significant difference.

Scores on the four instruments were analyzed with the demographic data using a canonical correlation. A canonical correlation was used to test Hypothesis 3. This analysis is a useful procedure for examining how profiles or variables in one data set correlate with profiles or variables in another data set. Evidence of a correlation between the stress levels scores of the participants and the demographic data was needed to reject Hypothesis 3. Absence of a correlation would result in acceptance of the hypothesis.

#### Summary

This chapter described the setting in which this study was undertaken. The population and sample were discussed and a brief explanation made of the evaluation instruments. The statistical methods used to treat the data were discussed.

## CHAPTER IV

### FINDINGS

Stress evaluation packets were made available to approximately 150 nurses and patient care technicians in four hemodialysis centers in North Central Texas. The sample used in this study was made up of 68 subjects who voluntarily responded to the questionnaires. Seventy-three individuals completed the instrument; however, five were eliminated for incorrectly completing the questionnaires.

Percent of return from three of the centers was over 50%. The fourth center, however, and the largest of the facilities, returned only 8% (5 completed sets) of the evaluations. This center had approximately 60 eligible participants. After two weeks a visit was made to the center. The Director of Nurses was encouraged to talk with her staff and suggest additional participation. After one week no one else had completed forms.

The demographic sheet requested 8 responses relating to marital status, education levels completed, age, number of children, average overtime hours worked weekly, years of hemodialysis experience, position and shift worked.

Four stress evaluation instruments (chronic and episodic work-related and chronic and episodic nonwork-related) were completed yielding four scores for each participant. The demographic data and stress scores were processed by the TWU DEC 20 computer using the SPSS-X program. This chapter includes an analysis of the processed data.

#### Demographic Data

The demographic data were divided into frequencies and percentages. This was done to obtain a profile of the sample.

Marital status was divided into five categories. The majority of individuals were married, representing 70.6% of the sample. Only 17.6% had never been married and the remaining 11.8% had been married and subsequently divorced, widowed, or separated. Frequency and percentage of respondents in each category is shown in Table 2.

Table 2

#### Sample Distribution by Marital Status

Marital Status	Frequency	Percentage
Single	12	17.6
Married	48	70.6
Divorced	5	7.4
Widowed	1	1.5
Separated	2	2.9

Educational levels completed are represented in Table 3. There was a fairly even distribution between the four groups listed with slightly more in the high school category (27.9%). One respondent indicated none of the categories and was assumed to have an education background without a high school diploma.

Table 3

Sample Distribution by Educational Levels

Level Completed	Frequency	Percentage
High School	19	27.9
LVN Training	15	22.1
RN Training	16	23.5
Baccalaureate or Higher	17	25.0
None of the Above	1	1.5

The 68 individuals participating in this study were asked to supply their ages. Minimum age was 21 years and the maximum age was 52 years. The mean was 32.6 years.

Number of children is represented in Table 4. There were 26 respondents (38.2%) who had no children. One individual had 6 children. The remaining respondents had between 1 and 5 children. The mean was 1.5 children for the entire sample (see Table 4).

Table 4

Sample Distribution by Number of Children

Number of Children	Frequency	Percentage
0	26	38.2
1	11	16.2
2	14	20.6
3	9	13.2
4	5	7.4
5	2	2.9
6	1	1.5

The average number of overtime hours worked weekly and years of hemodialysis experience are shown on Table 5. The overtime range was 0-40 hours with a mean of 3.2 hours. These data indicate that one individual was working double time. This may be an error, but was accepted as stated.

Table 5

Sample Distribution by Overtime Hours Worked and Years  
of Hemodialysis Experience

Variable	Minimum	Maximum	Mean
Overtime Hours Worked	0	40	3.2
Years of Experience	0	15	4.1

To test the hypotheses, the 68 participants were divided into four groups by position and shift. The two positions were staff and charge. The two shifts were day and night. There was 42% more staff than charge personnel responding and 26.5% more day shift than night shift responding. Of the 40 charge personnel in the population, 50% chose to participate in this study. Of the 120 staff personnel, 40% volunteered to participate. Although the numbers were very different there was a fairly equal representation from each group. There was no breakdown of the day and night shifts. Table 6 shows the distribution of these individuals within the four groups.



Further breakdown of the four groups into frequencies and percentages is also represented in Table 6. The day/staff group was the largest and night/charge group the smallest.

Table 6

Sample Distribution by Position and Shift

Group	Frequency	Percentage of Respondents
Total Staff	48	70.6
Total Charge	20	29.4
Total Day	43	63.2
Total Night	25	36.8
Day/Staff	30	44.1
Day/Charge	15	22.0
Night/Staff	18	26.4
Night/Charge	5	7.3

Stress Instrument Scores

Mean scores on the four instruments for the entire sample and the four individual groups were calculated. This information is represented in Table 7.

Table 7

Work and Nonwork Stress Instruments Mean Scores

Instrument	Sample	Day Staff	Day Charge	Night Staff	Night Charge
Episodic Work-Related	287	273	266	311	294
Chronic Work-Related	51	48	52	54	62
Episodic Nonwork-Related	286	295	183	344	316
Chronic Nonwork-Related	33	32	29	35	41

On the episodic work-related instrument, a score higher than 280 was determined to be high. The mean scores of the sample as a whole and night/staff and night/charge all fell in this category. Day/staff and day/charge groups had mean scores in the high range of medium which was 160-280.

On the chronic work-related instrument, the mean scores of the sample, day/staff, day/charge, and night/staff all fell in the low range (25-55). The night/charge group fell in the medium range (56-64).

On the episodic nonwork-related instrument a score higher than 171 was assigned a high value. The scores of all four groups fell in that category and so, obviously, did the sample.

The final instrument was the chronic nonwork-related evaluation. The night/charge group mean scores were the only ones to fall in the high category (36-80). The others all scored in the medium range (29-35).

#### Reliability of the Instruments

The reliability of Adams' (1980) four evaluation tools had not been previously established. It was not possible to test for reliability on the two episodic evaluations because scoring was not mandatory on each item. An alpha greater than .75 is indicative of reliability. The reliability coefficient of the chronic work-related tool was .83614. On the chronic nonwork-related tool the alpha was .85737. Both coefficients were greater than .75 indicating reliability of the instruments.

#### Multiple Analysis of Variance

Hypotheses 1 and 2 were tested with a two-way multivariate analysis of variance (MANOVA). Alpha less than .05 would indicate significance. The scores of day and night charge personnel and day and night staff personnel were compared with no significant difference ( $F(4,61) =$

.74653,  $p = .564$ ). Stress scores of day personnel were compared with those of night personnel and again no significant difference was shown ( $F(4,61) = 1.64031$ ,  $p = .176$ ). Finally, the stress scores of charge personnel on both shifts were compared to the scores of staff personnel on both shifts with no significant difference shown ( $F(4,61) = 1.38978$ ,  $p = .248$ ). Therefore, Hypotheses 1 and 2 were accepted as no significant differences were shown in the stress levels of charge and staff personnel on the day and night shifts.

#### Canonical Correlation

The multivariate significance tests were significant as the canonical correlation of .70597 is larger than zero. It was, therefore, determined that a correlation did exist between the stress scores and the demographic variables. In order to determine which variables were involved in the correlation, the weights for the dependent variables were interpreted by finding the largest weight, regardless of sign. All other weights, again regardless of sign, at least half as large were included. The sign was interpreted as low if negative and high if positive (Table 8).

Table 8

Weights of Dependent Variables (Stress Evaluation Scores)

Variable	Weight
Episodic Work-Related	-.31613
Chronic Work-Related	-.13937
Episodic Nonwork-Related	-.48665
Chronic Nonwork-Related	-.37237

Episodic nonwork-related stress scores had the largest weight with episodic work and chronic nonwork stress scores having weights at least half as large. This indicates that these evaluation tools and the scores accumulated by the participants were involved in the significant canonical correlation with the demographic variables. The chronic work evaluation scores were not affected by the demographic variables and, therefore, excluded from this discussion.

The weights for the covariates (demographics) were interpreted in the same way. The largest weight was in the married category. Divorced, education, and age also had significant weights indicating they were involved in the correlation. Therefore, a correlation existed

between these demographic variables and the scores on the three previously mentioned evaluation instruments. Existence of a significant correlation resulted in rejection of Hypothesis 3. This is represented in Table 9.

Table 9

Weights of Covariates (Demographics)

Covariate	Weight
Married	.58647
Divorced	-.50224
Education	-.43764
Age	.34019
All others	<.2

Married and age had positive signs indicating that on the marital status scale and age scale, the higher an individual was placed, correlated with the lower negatively signed stress scores on the three evaluation tools previously mentioned. The negatively signed divorced and education covariates indicated the lower

an individual placed on the marital and education scale, the higher his or her stress scores on the three stress evaluation tools.

A hand tabulation was made of the scores of each instrument to determine the percentage of respondents whose scores fell in the high range. On the Episodic Work-Related Stress Evaluation, 27 individuals scored in the high range, 12 scored high on the Chronic Work-Related Stress Evaluation, 42 scored high on the Episodic Nonwork-Related Education, and 25 scored high on the Chronic Nonwork-Related Evaluation.

### Summary

This chapter focused on an analysis of the data. The size of the population and sample were discussed. Demographic data were presented in tables and text as was an analysis of the stress scores. Reliability test for the instruments, MANOVA, and Canonical Correlation results were presented and discussed. Hypotheses 1 and 2 were accepted as stated, but Hypothesis 3 was rejected.

## CHAPTER V

### SUMMARY, CONCLUSIONS, DISCUSSION OF FINDINGS, AND RECOMMENDATIONS

This study has addressed the problem of stress in hemodialysis nursing. This chapter summarizes the findings of the study and focuses on conclusions, discussion of findings, and recommendations suggested by those findings.

#### Summary

A descriptive study was conducted to determine stress levels of nurses and patient care technicians working in outpatient hemodialysis centers. Stress levels were measured by having the subjects complete Adams' four evaluation instruments (Chronic Work-Related Stress Evaluation, Episodic Work-Related Stress Evaluation, Chronic Nonwork-Related Stress Evaluation, and Episodic Nonwork-Related Stress Evaluation).

A demographic data sheet was completed by each individual. Sixty-eight respondents in four outpatient hemodialysis centers volunteered to participate in this study during the summer of 1984.



Scores on the four stress evaluation instruments were statistically subjected to a multiple analysis of variance to determine if significant differences existed between charge and staff personnel on the day and night shifts. The demographic data were statistically examined with the four stress scores, utilizing a canonical correlation to determine a relationship between stress levels and marital status, educational level, age, number of children, overtime hours worked weekly, years of hemodialysis experience, position, and shift worked.

### Conclusions

This study resulted in a number of conclusions.

These were as follows:

1. Sixty-eight individuals participated in the study. Of these, 40% exhibited high levels of stress on the Episodic Work-Related Stress Evaluation, 18% had high levels of stress according to their scores on the Chronic Work-Related Stress Evaluation, 62% had high scores on the Episodic Nonwork-Related Evaluation, and 37% achieved high scores on the Chronic Nonwork-Related Evaluation.

2. No statistically significant difference in stress levels existed between charge and primary care personnel on the day and night shifts.

3. A statistically significant relationship existed between older, married respondents and low scores on the episodic work and episodic and chronic nonwork-related stress evaluation instruments. Age ranges and specific scores were not indicated, but older, married participants appeared to be less stressed.

4. A statistically significant relationship existed between marital status, educational levels, and high scores on the Episodic Work and Episodic and Chronic Nonwork-Related Stress Evaluation instruments. Less educated, nonmarried participants had higher stress levels.

#### Discussion of Findings

It was assumed at the beginning of this study that hemodialysis nurses would exhibit high stress levels on the evaluation instruments. This assumption proved to be correct as evidenced by the elevated stress scores. The assumption was made, initially, because of first-hand observations of personnel in an outpatient hemodialysis center. A general atmosphere of stress seemed to pervade the center with what appeared to be a high absenteeism and turnover rate. Verification was aided by a review of the literature. It has been documented in a number of articles (Dickerson, 1980; Mulkerne, 1983; Stuart,

1980) that hemodialysis nursing is stressful to the personnel working in that field. The patients are chronically ill with a disease that can only be cured by a kidney transplant. The majority of patients with end-stage renal disease will be on dialysis until they die. This could be days, months, or years. Nurses have been trained to assist in curing patients, not sustaining life until death relieves them of the responsibility.

Seeing the same patients and performing the same tasks day after day creates boredom which can be very stressful. There is little opportunity for variance of the tasks as procedures are set. At the same time, each person is aware that a critical situation can arise at any time. A paradox, therefore, exists.

Inadequate staffing, working overtime, crowded conditions, death of patients who have become friends, and many other stressful conditions have been observed. Therefore, it was not surprising to find high scores on so many of the stress evaluations.

Charge and primary care personnel did not exhibit significant differences in stress scores. Charge nurses, although having more responsibility for patient care, also have more freedom to move about the center, greater variety of tasks, higher pay scale, and the usual "percs"

that accompany a management position. The primary care personnel turn all serious problems over to the charge nurse, ridding themselves of responsibility in emergency situations, but, as mentioned before, have very routine tasks, continual patient contact, and lower pay scales.

Nurses on the day shift care for the more critically ill patients, but the stressful nature of this situation may be lessened by the fact that more personnel are in the center to assist during those hours. Nurses on the night shift have a younger, healthier patient population, but find themselves in the stressful situation of working late hours with fewer staff members present. These observations may account for the insignificant differences in stress scores in the two shifts.

Scores on the chronic work-related instrument were low for all but the night/charge group which scored in the medium range. As mentioned previously, these nurses have less staff to share the responsibility at night and may feel more overworked. The episodic work-related scores were medium range for the day shift groups and high for the night shift groups. Once again the smaller staff may account for this as well as a different type of patient population. The night patients seem to be younger, healthier, and more aggressive in their demands. Episodic

nonwork-related scores were high in all four groups which may be indicative of a stressful society. Chronic nonwork scores were medium in all but the night/charge group which scored high. Although the MANOVA showed no significant difference in the groups by stress scores, it is interesting to note that the night/charge personnel did exhibit higher mean scores on all instruments than the other three groups.

The correlation of stress scores with demographic data did show significant relationships. It was found that older, married staff members exhibited lower stress level scores than the remainder of the sample and divorced, less educated personnel had higher stress level scores. The reason for this is not known, but several possible explanations bear discussion.

Simply being older allows more time to try a variety of coping mechanisms and to adopt the methods most beneficial to the individual. Trial and error throughout the maturing years might allow one to accomplish this. Married individuals, although having another person to fit into their lifestyles, might have the benefit of a support person. In most cases, the financial situation is also better because of two incomes.

Divorced persons may not have that support at home as well as a supplier of psychological needs. These

individuals have full financial responsibility for themselves and possibly children as well as the responsibility for caring for the children.

There may also be additional stress from the failure of the marriage. When this individual is not well educated, the situation may worsen because career opportunities and wages may be less. Higher education also may aid in preparing individuals for meeting physical and psychological emergencies in their lives. Considering these points, the data were not surprising.

Number of children was not found to significantly relate to stress levels. It would seem that fewer children would lessen the nonwork stress levels because of less work and fewer financial burdens. However, children may be a support rather than a stressor and a solace at the end of a stressful day with patients.

That increasing the number of hours spent in the facility did not significantly relate to stress levels was a surprising finding. Greater exposure may force adoption of coping mechanisms or perhaps only those able to cope volunteer for overtime hours.

Years of hemodialysis experience also was not found to significantly relate to stress levels. Perhaps the years of accumulated stressful incidents were balanced by increased knowledge and, therefore, more comfort

performing the tasks. It might also be true that the more experienced individual is better able to recognize and prevent possible problems leading to a less stressful experience for the staff person as well as the patient. The less experienced personnel, although lacking as much knowledge, also have fewer demands placed on them.

An interesting incident occurred during the testing phase of the study. The largest of the four centers returned only five completed forms. A return visit to that center did not result in any further participation. This was the same unit whose medical director refused to give permission for the study until he read the evaluation instruments. Several months prior to this study, a serious incident occurred in this facility resulting in the deaths of several patients. A great deal of publicity resulted as well as legal implications. Perhaps that explains the staff's reticence to be involved in stress testing at that time. The director of nurses in this facility requested that her staff be allowed the opportunity to participate in the study and may have recognized the extent of stress present in her personnel.

This research project was begun because of personal observations in a dialysis center, which indicated stress response problems. The study confirmed the presence of elevated stress levels in many of the nursing personnel

which suggests that stress management classes might be beneficial. Inclusion of personal, organizational, and management strategies may prove useful in preparing dialysis personnel to meet the demands in their work setting. Perhaps stress management education would be beneficial in nursing school curriculums to prepare students, who might consider hemodialysis or other critical care nursing fields, for the stressful careers they have chosen and the high pressure society in which they will live. Undergraduate, graduate, and in-service educators in all fields might consider the escalating problem of stress in both work and nonwork environments and the role education might play in providing a solution to that problem.

#### Recommendations

Based on the findings of this study, the following recommendations are made:

1. Based on the number of participants exhibiting high stress levels, personnel in the four centers studied should be provided in-service education in stress management with pretesting and posttesting used to evaluate the effectiveness of the intervention.

2. Administration in hemodialysis centers studied might seek ways to reduce stress factors in the



organization and environment because teaching staff members to cope with stress is of only partial benefit when the stressful conditions persist.

3. The parent company management should be provided findings of this study so they might better understand the stressed natures of their employees. The parent company is in a position alone to review environmental stressors which may contribute to staff stress.

4. A similar study might be conducted using a larger sample.

5. Research instruments specific to hemodialysis nursing might be developed and used in a similar study. This might be especially true in chronic work-related stress where the respondents scored low on Adams' (1980) instrument.

6. A study might be conducted in acute hospital settings to determine if it is the dialysis process itself which is stressful to nurses or the chronic nature of outpatient dialysis.

7. Additional study of the older, married nurses might be conducted to determine why they have lower stress levels.

## REFERENCES

1. J. H. D. ...

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1. ...

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4. ...

5. ...

6. ...

7. ...

8. ...

9. ...

10. ...

## REFERENCES

- Adams, J. D. (1980). Understanding and managing stress. San Diego: University Associates, Inc.
- Albrecht, K. (1970). Stress and the manager. Englewood Cliffs, NJ: Prentice-hall, Inc.
- Bailey, J. (1980). Stress and stress management. Journal of Nursing Education, 19(6), 5-7.
- Baldwin, A., & Bailey, J. (1980). Worksite interventions for stress reduction. Journal of Nursing Education, 19(6), 48-53.
- Calhoun, G. L. (1980). Hospitals are high stress employers. Hospitals, 54(12), 11-13.
- Campbell, S. (1981). Dialysis staff: Their feelings and how they cope. Journal of the American Association of Nephrology Nurses and Technicians, 8(2), 38-39.
- Davitz, L., & Davitz, J. (1975). How do nurses feel when patients suffer? American Journal of Nursing, 75(9), 1505-1510.
- Devins, G., Anthony, M., Mandin, H., & Taylor, J. (1983). The impact of suffering on the dialysis nurse. Dialysis and Transplantation, 12(10), 719-724.
- Dickerson, Z. (1980). Stress factors in hemodialysis. Nephrology Nurse, 2(1), 19-20, 66.
- Donnelly, G. (1980). Why you just can't take it any-more! RN, 43(5), 34-37.
- Freudenberger, H. (1980). Organizational stress and staff burnout. Dialysis and Transportation, 13(2), 104-105.
- Gardner, E., & Hall, R. (1980). Protracted stress syndrome in health care providers. Texas Medicine, 76(3), 63-65.

- Gerber, K., & Nehemkis, A. (1980). Designing a program of psychological consultation to nurses in a dialysis setting. Journal of American Association of Nephrology Nurses and Technicians, 7(1), 249-251.
- Girdano, D., & Everly, G. (1980). Controlling stress and tension. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Goodwin, S. (1980). Curbing the caveman in us. Nursing Mirror, 150(120), 22-24.
- Hillier, S. (1981). Stresses, strains and smoking. Nursing Mirror, 152(7), 26-30.
- Horton, M. J. (1981). Coping with staff burnout. Contemporary Dialysis, 2(1), 10-16.
- Ivancevich, J., & Matteson, M. (1980). Stress and work--A managerial perspective. Glenview, IL: Scott, Foreman & Company.
- Ivancevich, J., & Matteson, M. (1980). Nurses and stress: Time to examine the potential problem. Journal for Nursing Leadership and Management, 1(6), 17-22.
- Jackson, V. (1980). Reducing job stress by open meetings. Nephrology Nurse, 2(6), 32-34.
- Jacobson, S., & McGrath, H. (1983). Nurses under stress. New York: John Wiley & Sons.
- Levi, L. (1981). Preventing work stress. Reading, PA: Addison-Wesley Publishing Company.
- McMillan, P. (1980). Stressing the point. Nursing Times, 76(4), 1826.
- Mulkerne, D., & Tucker, C. (1983). Job satisfaction of nurses employed in hemodialysis facilities. Contemporary Dialysis, 4(5), 21-25.
- Quick, J., & Quick, J. (1984). Organizational stress and preventive management. New York: McGraw-Hill Book Company.

- Selye, H. (1974). Stress and distress. New York: J. B. Lippincott Company.
- Smith, M., & Selye, H. (1979). Reducing the negative effects of stress. American Journal of Nursing, 79(10), 1953-1955.
- Staff. (1983, July-August). Stress. UFCW Action, p. 17-19.
- Stillman, S., & Strasser, B. (1980). Helping critical care nurses with work-related stress. Journal of Nursing Administration, 10(1), 28-31.
- Stuart, M. (1980). What does an administrator look for in selecting nephrology nursing personnel. Nephrology Nurse, 2(4), 11-13.
- Taylor, P., & Gideon, M. (1981). Day in and day out you minister to others, but who will minister to you? Nursing 81, 11(10), 58-61.
- Tierney, M., & Strom, L. (1980). Type A behavior in the nurse. American Journal of Nursing, 80(5), 915-916.
- Toffler, A. (1970). Future shock. New York: Random House.

## APPENDIXES



PERMISSION FORM

Patricia Ely has been given permission to conduct research involving stress testing of hemodialysis staff personnel in this facility. I understand the name of this center will not be used and all data will be profiled.

Administrator\_\_\_\_\_ Date\_\_\_\_\_

Director of Nurses\_\_\_\_\_ Date\_\_\_\_\_



## APPENDIX A

Table A-1. The following table shows the number of respondents by age group and sex.

Table A-2. The following table shows the number of respondents by age group and sex, broken down by education level.

Table A-3. The following table shows the number of respondents by age group and sex, broken down by income level.

## APPENDIX B

### DEMOGRAPHICS

## DEMOGRAPHICS

Please complete the following by placing a check (✓) next to the appropriate response or providing the necessary data.

### Marital Status

Single \_\_\_\_\_  
Married \_\_\_\_\_  
Divorced \_\_\_\_\_  
Widowed \_\_\_\_\_  
Separated \_\_\_\_\_

### Educational Levels Completed

High School \_\_\_\_\_  
LVN Training \_\_\_\_\_  
RN Training \_\_\_\_\_  
Baccalaureate or higher \_\_\_\_\_

Age \_\_\_\_\_

No. of Children \_\_\_\_\_

Average overtime hours worked weekly \_\_\_\_\_

Years of hemodialysis experience \_\_\_\_\_

Position      Staff \_\_\_\_\_      Charge \_\_\_\_\_

Shift usually worked      Day \_\_\_\_\_      Night \_\_\_\_\_

## APPENDIX C

### STRESS EVALUATION INSTRUMENTS

## EPISODIC WORK-RELATED STRESS EVALUATION

For each of the following events you have experienced during the past twelve months, transfer its AVERAGE VALUE to the corresponding line in the MY SCORE column. If you have experienced an event more than one time, only score it once.

Event	Average Value	My Score
1. Being transferred against my will to a new position or assignment. . . . .	81	_____
2. Being shelved (moved to a less important job). . . . .	79	_____
3. Experiencing a decrease in status (either actual or in relation to my peers). . . . .	68	_____
4. Being disciplined or seriously reprimanded by my supervisor. . . . .	67	_____
5. Having my request to transfer to a new, more satisfying position rejected . . . . .	65	_____
6. Sustaining a sudden, significant change in the nature of my work . . . . .	60	_____
7. Learning of the cancellation of a project I was involved with and considered important. . . . .	60	_____
8. Encountering major or frequent changes in instructions, policies, or procedures . . . . .	59	_____
9. Being promoted or advanced at a slower rate than I expected . . . . .	58	_____

Event	Average Value	My Score
10. Being transferred voluntarily to a new position or assignment (not a promotion) . . . . .	52	_____
11. Anticipating my own imminent retirement . . . . .	47	_____
12. Undergoing a major reorganization (at least throughout my department). . . . .	46	_____
13. Experiencing a sudden decrease in the number of positive recognitions of my accomplishments . . . . .	46	_____
14. Encountering a major change (increase or decrease) in the technology affecting my job (computers, techniques, etc.). . . . .	46	_____
15. Giving a major briefing or formal presentation. . . . .	46	_____
16. Encountering a significant deterioration in environmental conditions (lighting, noise, temperature, space, and so on) . . . . .	45	_____
17. Acquiring a new boss or supervisor . . . . .	45	_____
18. Sustaining a sudden, significant decrease in the activity level or pace of my work . . . . .	43	_____
19. Sustaining a sudden, significant increase in the activity level or pace of my work. . . . .	37	_____
20. Undergoing a major relocation of my work place. . . . .	31	_____
21. Experiencing an increase in status (either actual or in relation to my peers). . . . .	30	_____

Event	Average Value	My Score
22. Being required to work more hours per week than normal due to crises or deadlines . . . . .	29	_____
23. Experiencing the transfer, resigna- tion, termination, or retirement of a close friend or valued colleague . .	24	_____
24. Being promoted or advanced at a faster rate than I expected. . . . .	24	_____
25. Acquiring new subordinates . . . . .	23	_____
26. Encountering a major change in my work schedule. . . . .	23	_____
27. Acquiring new co-workers . . . . .	21	_____
28. Experiencing an increase in the number of positive recognitions of accomplishments . . . . .	20	_____
29. Encountering a significant improve- ment in environmental conditions (lighting, noise, temperature, space, and so on) . . . . .	17	_____
30. Undergoing a minor relocation of my work place . . . . .	5	_____

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## CHRONIC WORK-RELATED STRESS EVALUATION

Indicate the relative frequency with which you experience each of the following sources of stress by writing the appropriate response number in the corresponding blank.

### Frequency Scale

- 1 - Never
- 2 - Infrequently
- 3 - Sometimes
- 4 - Often
- 5 - Always

N/A - Not Applicable

### FREQUENCY

### CONDITION

- |       |     |   |
|-------|-----|---|
| _____ | 1.  | I am unclear about what is expected of me.  |
| _____ | 2.  | My co-workers seem unclear about what my job is.                                    |
| _____ | 3.  | I have differences of opinion with my superiors.                                    |
| _____ | 4.  | The demands of others for my time are in conflict.                                  |
| _____ | 5.  | I lack confidence in management.  |
| _____ | 6.  | Management expects me to interrupt my work for new priorities.                      |
| _____ | 7.  | Conflict exists between my unit and others it must work with.                       |
| _____ | 8.  | I get feedback only when my performance is unsatisfactory.                          |
| _____ | 9.  | Decisions or changes that affect me are made without my knowledge or involvement.   |
| _____ | 10. | I am expected to accept the decisions of others without being told their rationale. |
| _____ | 11. | I must attend meetings to get my job done.  |
| _____ | 12. | I am cautious about what I say in meetings.   |

FREQUENCY	CONDITION
_____	13. I have too much to do and too little time in which to do it.
_____	14. I do not have enough work to do.
_____	15. I feel overqualified for the work I actually do.
_____	16. I feel underqualified for the work I actually do.
_____	17. The people I work with closely are trained in a field that is different from mine.
_____	18. I must go to other departments to get my job done.
_____	19. I have unsettled conflicts with my co-workers.
_____	20. I get no personal support from my co-workers.
_____	21. I spend my time "fighting fires" rather than working according to a plan.
_____	22. I do not have the right amount of interaction (too much or too little) with others.
_____	23. I do not receive the right amount of supervision (too much or too little)
_____	24. I do not have the opportunity to use my knowledge and skills.
_____	25. I do not receive meaningful work assignments.

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# EPISODIC NONWORK-RELATED STRESS EVALUATION

For each of the following events you have experienced during the past twelve months, transfer its AVERAGE VALUE to the corresponding line in the MY SCORE column. If you have experienced an event more than one time, record it only once.

Event	Average Value	My Score
1. Death of a spouse . . . . .	86	_____
2. Divorce/Breakup of a family . . . . .	77	_____
3. Jail sentence . . . . .	75	_____
4. Marital separation. . . . .	70	_____
5. Unwanted pregnancy. . . . .	70	_____
6. Death of immediate family member. . .	69	_____
7. Unemployment of head of household . .	68	_____
8. Attempted suicide of immediate family member . . . . .	66	_____
9. Incurrence of debt beyond mean of payment . . . . .	66	_____
10. Onset of heavy drinking problem of immediate family member. . . . .	65	_____
11. Serious injury or illness requiring hospitalization . . . . .	65	_____
12. Miscarriage . . . . .	65	_____
13. Abortion . . . . .	63	_____
14. Jail sentence imposed on immediate family member . . . . .	61	_____

Event	Average Value	My Score
15. New problem related to use of alcohol or drugs . . . . .	59	_____
16. Serious illness suffered by immediate family member . . . . .	59	_____
17. Sex difficulties . . . . .	57	_____
18. Death of a close friend. . . . .	55	_____
19. Sudden increase in number of arguments with spouse. . . . .	55	_____
20. Period of homelessness . . . . .	51	_____
21. Breakup with steady boyfriend/girlfriend . . . . .	51	_____
22. Marriage . . . . .	50	_____
23. Serious restriction of social life .	49	_____
24. My own/my wife's pregnancy . . . . .	49	_____
25. Problem with my children . . . . .	49	_____
26. Onset of prolonged ill health requiring treatment by my own doctor . . . . .	48	_____
27. New job in new line of work. . . . .	46	_____
28. Decrease in number of family members because son or daughter leaves home. . . . .	44	_____
29. Sudden increase in number of family arguments . . . . .	43	_____
30. Addition of new immediate family member . . . . .	43	_____
31. Purchase of home (taking out mortgage) . . . . .	40	_____

Event	Average Value	My Score
32. Move to new house . . . . .	40	_____
33. Involvement in physical fight. . . .	30	_____
34. Spouse's job begun or ended. . . . .	34	_____
35. Minor violation of law . . . . .	34	_____
36. New job in same line of work . . . . .	31	_____
37. Change in hours or conditions in present job . . . . .	31	_____
38. Vacation away from home. . . . .	27	_____
39. Quarrel with neighbors . . . . .	26	_____
40. Development of friendship with new neighbors. . . . .	18	_____

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## CHRONIC NONWORK-RELATED STRESS EVALUATION

Indicate how stressful each of the following conditions is for you personally by writing the appropriate response number from the SEVERITY SCALE in the corresponding blank.

### Severity Scale

- 1 - Not stressful
- 2 - Somewhat stressful
- 3 - Moderately stressful
- 4 - Very stressful
- 5 - Extremely stressful

N/A - Not applicable

### SEVERITY

### CONDITION

- |       |   |
|-------|---|
| _____ | 1. Noise (traffic, airplanes, neighbors, and so on).                      |
| _____ | 2. Pollution.   |
| _____ | 3. Personal standard of living and ability to make ends meet financially. |
| _____ | 4. Crime and vandalism in immediate neighborhood.                         |
| _____ | 5. Law and order in society.  |
| _____ | 6. Personal, long-term ill health.  |
| _____ | 7. Long-term ill health of family member or close friend.                 |
| _____ | 8. Racial tensions.   |
| _____ | 9. Regular drug or alcohol abuse of family member or close friend.        |
| _____ | 10. Concern over future of my own career.                                 |
| _____ | 11. Concern over values or behaviors of family members.                   |
| _____ | 12. Political situation in this country.                                  |
| _____ | 13. Possibility of war.   |

## SEVERITY

## CONDITION

- \_\_\_\_\_ 14. Concern over financing my own retirement,  
my children's education, and so on.
- \_\_\_\_\_ 15. Economic situation in this country.
- \_\_\_\_\_ 16. Changing morals in our society (regarding  
family life, sexuality, and so on).

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standing and Managing Stress. University Associates,  
Inc. 1980. Used with permission.

APPENDIX D

LETTER TO DIRECTOR OF NURSES

Dear

The high pressure setting of a hemodialysis center has been recognized and reported in the literature with some discussion of the subsequent stress responses in personnel. As a graduate student at the Texas Woman's University in the School of Health Sciences Instruction, I have chosen the topic of stress in hemodialysis personnel for my master's thesis. It is my hope to determine stress levels of charge and staff personnel on both the day and night shifts in four area hemodialysis centers, to pinpoint stressors affecting those levels.

To acquire the necessary data, I would appreciate the opportunity to assess your staff, utilizing four short stress measurement instruments. The time required by each staff member would be minimal, approximately 30 minutes. Group data will be provided to you at the completion of the study.

It is my sincere hope that findings in the study will enable us to identify areas of stress so we might begin addressing the problem and become healthier, better providers of patient care. With your permission, I will provide each of your staff members with an explanatory letter, four assessment instruments, and a plain envelope for return of the completed forms to you. I will collect them when all have been completed.

Your willingness to allow your staff to participate in this study will be appreciated. Thank you for your assistance.

Sincerely,

Patricia Ely, R.N.

APPENDIX E

COVER LETTER



Dear Staff Member,

As hemodialysis personnel, we are working in a high pressure setting which may be causing many of us to experience elevated stress levels. As a graduate student at the Texas Woman's University, I have chosen stress as the topic for my master's thesis. It is my hope that this study will enable us to better understand the stressors in hemodialysis nursing, how we react to them, and how we can protect ourselves from the physiological response to them.

If you would be willing to participate in this study, please complete the following questionnaires. They will only take about 30 minutes of your time and names will not be used. Return of the completed forms to your Director in the envelope provided constitutes your permission to be a part of this study. Group data will be provided to your Director of Nurses at the completion of this study.

If you have any questions, you may call me at work or home. Thank you for your assistance.

Sincerely,

Patricia Ely, R.N.