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hospitals in Tennessee**

Davis, Ruby Tweed, Ed.D.

East Tennessee State University, 1992

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OCCUPATIONAL STRESS AMONG NURSE ADMINISTRATORS IN
GENERAL HOSPITALS IN TENNESSEE

A Dissertation
Presented to
the Faculty of the Department of Educational
Leadership and Policy Analysis
East Tennessee State University

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

by
Ruby Tweed Davis

May 1992

APPROVAL

This is to certify that the Graduate Committee of

RUBY TWEED DAVIS


met on the

_____ 1st _____ day of _____ April _____, 1992.

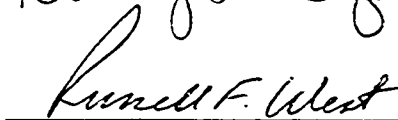
The committee read and examined her dissertation, supervised her defense of it in an oral examination, and decided to recommend that her study be submitted to the Graduate Council and the Associate Vice-President for Research and the Dean of the Graduate School, in partial fulfillment of the requirements for the degree Doctor of Education in Educational Leadership and Policy Analysis.



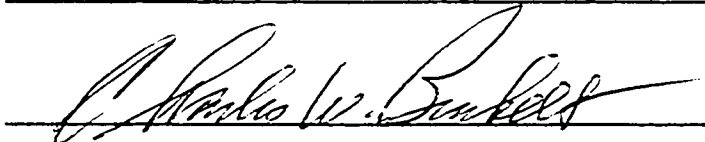
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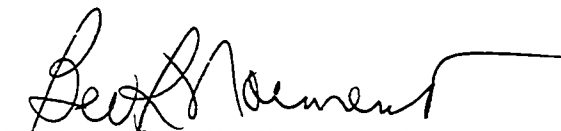


Russell F. West



Charles W. Bunker

Signed on behalf of
the Graduate Council



Dean of the Graduate School and
Associate Vice-President for Research

ABSTRACT

OCCUPATIONAL STRESS AMONG NURSE ADMINISTRATORS IN GENERAL HOSPITALS IN TENNESSEE

by

Ruby Tweed Davis

The purpose of this study was to determine the level of occupational stress among nurse administrators and to identify the types of strategies used by nurse administrators to deal with or manage occupational stress. The study examined the relationship between selected demographic variables, occupational stress, and strategies.

The research design included five research questions along with seven null hypotheses testing the relationship between occupational stress and demographic variables--age, gender, marital status, years of professional nursing experience, years as a nurse administrator, educational attainment, and hospital bed capacity. There were seven additional hypotheses testing the relationship between the same demographic variables and three categories of coping strategies. The instrument used included the researcher-designed Demographic Questionnaire, the Health Professions Stress Inventory (HPSI), and a listing of 17 coping strategies.

Nurse administrators's HPSI overall mean stress score was lower than the HPSI mean stress level scores reported for nurses in previous studies. Five subscales of stressors (Stress Factors) were identified by analyzing the HPSI using Principal Components Factor Analysis.

A statistical significant difference ($p < .05$) was revealed for nurse administrators for: 1) overall stress level when tested by three of the demographic variables, years as a nurse administrator, educational attainment, and hospital bed capacity; 2) subscale level of stress when testing the HPSI five stress factors by marital status, years as a nurse administrator, and educational attainment.

A statistical significant difference ($p < .05$) for strategies used by nurse administrators was revealed with testing: 1) Avoidance strategy by demographic variables--age, number of years of professional experience, number of years as a nurse administrator, and hospital bed capacity and, 2) Active Cognitive strategy by demographic--gender.

The Spearman Rho correlation coefficient procedures used to correlate the HPSI five Stress Factors with Active Cognitive, Active Behavioral, and Avoidance strategies revealed: 1) Stress Factor 1, Professional Conflicts was significantly related to Avoidance strategy ($r_s = .24$). 2) Stress Factor 2, Lack of Recognition as a Professional, was negatively significantly correlated with Active Cognitive Strategy ($r_s = -.22$). 3) Stress Factor 3, Work Overload, was significantly related to Active Cognitive strategy ($r_s = .23$). 4) Nurse administrators overall stress was significantly related to Avoidance Strategy ($r_s = .28$).

INSTITUTIONAL REVIEW BOARD APPROVAL

This is to certify that the following study has been filed and approved by the Institutional Review Board of East Tennessee State University.

Title of Grant or Project Occupational Stress Among Nurse Administrators in General Hospitals in Tennessee

Principal Investigator Ruby Tweed Davis

Department Educational Leadership and Policy Analysis

Date Submitted September 16, 1991

Institutional Review Board Approval

Chairman Anthony J. DeLuca

DEDICATION

To my parents, Arthur and Dollie Tweed, my husband, Johnnie, my children, Deborah, Judith, William, and Donna, my sisters, Viola and Pearl, and my two grandchildren, Shawn and Nathan.

ACKNOWLEDGMENTS

Although this dissertation represents the product and culmination of many months of laborious work, the completion of this study has been made possible by the help, support, and encouragement of a number of people.

The writer wishes to express her gratitude and appreciation to the following for their thoughtfulness and consideration in the planning and preparation of this dissertation: Dr. Richard Manahan, Chairman, Dr. Charles Burkett, Dr. Nancy Garland, and Dr. Russell West who also provided invaluable assistance with the research design and methodology. The committee helped me shape this project and provided wise counsel throughout the process. To each of you, I am forever grateful.

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CHAPTER 1

Introduction

Over the past three decades the growth in size and complexity of health care institutions in the United States has brought with it many new problems, challenges and potentially more stressful situations for all health care providers, including the hospital nursing service administrator. Leininger (1977) wrote:

The world of nursing service and nursing education is definitely a different one of a decade ago. Since most of our health care management systems are requiring quick and accurate assessments of situations, and since the educational nursing programs are changing rather dramatically in some places, we are "indeed faced with new challenges in nursing administration." (p. 7)

Unlike his or her predecessor, the present day nurse administrator is confronted by many more problems since the health care delivery system has undergone radical changes during the 1980s with a continuation of these changes into the 1990s. Some of these changes include: the demands for high quality health care by consumers; medical technology; governmental involvement with various regulatory constraints; union involvement; budgetary limitations; nurse shortage; the conflict within the nursing profession evolved

by both nursing education and entry into nursing practice requirements; and the promotion by the American Medical Association to train health care technologists as bedside health care providers. The personal experiences of the investigator as a nurse administrator, discussions with both active and retired nurse administrators, and a review of the literature reveal that the position and role of the hospital nurse administrator has been and continues to be complex, demanding, and characterized by much organizational conflict and stress (Erickson, 1980; Arndt & Laegar, 1970a, May/June; 1970b, November/December). Daley (1979, July/August) reported that occupational stress may be functional in its early stages because it represents a challenge to the worker, therefore increasing motivation and production. However, when frustrations and tensions increase or persist over a long period, a high percentage of the individual's energy is then devoted to dealing with and managing stress (Cleland, 1965).

Various health problems, physical and psychological, associated with exposure to chronic excessive stress is well substantiated in the literature (Elliott & Eisdorfer, 1982). Thus, the nurse administrator exposed to chronic occupational stress may be faced with adverse consequences for her/his health, well-being and career along with the inability to attain departmental and organizational goals and objectives. According to Freund (1985), the tenure for

directors of nursing in the university and university affiliated hospitals surveyed in her study averaged 2.5 directors of nursing per institution over a 10 year period. Termination and requested resignation were rated by 40% as the most common reason for turnover. While several articles and research studies have been published that address the issue of occupational stress among professional nurses, particularly those nurses working in intensive care units (Cleland, 1965, 1967; Foxall et al., 1990, May; Gardam, 1969; Jones, 1972, July; Menzie, 1960; Michaels, 1971; Terhune, 1985, September), there is a paucity of information found in the literature that addresses the nurse administrator's perceived stress and strategies used to deal with or manage stress.

Statement of the Problem

The problem of this study is there is not a clear understanding of the stress associated with the nurse administrator position or strategies used to deal with or manage occupational stress. Furthermore, it is not known how the level of occupational stress and the methods of coping vary among nurse administrators according to age, sex, marital status, total number of years of professional nursing experience, number of years in a top-level nurse administrator position, educational attainment, and size (bed capacity) of hospital.

Purpose of the Study

The purpose of the study was to focus on the discrete population of nurse administrators in general hospitals located throughout Tennessee to determine the level of occupational stress among nurse administrators and to identify the strategies used by nurse administrators to deal with or manage occupational stress. Additionally, an analysis will be conducted of the relationship between selected demographic variables, occupational stress, and strategies used by nurse administrators to deal with or manage occupational stress.

Significance of the Study

While a substantial portion of the literature on organizational occupational stress derives from the industrial sector, increasing attention has been given to organizational stress in the health care sector (Calhoun, 1980, June; Oaklander & Fleishman, 1964; Wolfgang, 1988a, 1988b, 1991). In particular, there has been a growing recognition of job stress experienced by professional nurses working in the hospital setting (Bamber, 1988, March; Huckabay & Jagla, 1979, September; Jacobson, 1978; Lysaught, 1970; Owens, 1989, September; December; Wolfgang, 1988b, Spring). Concern regarding stress experienced by nurse administrators surfaced with a study conducted by Arndt and Laegar (1970a, May/June; 1970b, November/December). This study was an attempt to investigate and evaluate certain

factors in the internal hospital job environment that might clarify the causes and consequences of stress experienced by the nurse administrator.

Historically, the nurse administrator has been placed in the difficult position of being responsible for one of the largest constituencies in the health care delivery system--nursing service--without being delegated full authority to effect change or participate in some of the decision making aspects of the system (Lambertsen, 1977). According to Whetstone (1977), it is against such a scenario that the hospital nurse administrator must perform, and is required to bridge the gap between an ethos of dissonance in nursing, medicine, and hospital management, three fields that are evolving one into another and constantly changing into new forms.

A lack of professional rights and autonomy by the nurse administrator and the professional staff have evoked frustrations, thus leading to many stressful situations. McClure, Paulin, Sovie, and Wendelt (1983) reported:

The modern day nurse administrator occupies a position of parity with other top level executives and she is directly accountable to the hospital administrator, rather than being responsible to a physician or an assistant administrator. The nurse administrator is a strong patient advocate with direct communication with top level executives and in all instances represents

the needs of nursing. (p. 10)

Limited research studies exist elucidating the problem of occupational stress encountered by nurse administrators and strategies used to deal with or manage occupational stress. The results of this study will identify: if this group of nurse administrators consider their position to be stressful, and the strategies used to deal with or manage occupational stress. Two important outcomes of this study are anticipated: (1) the nurse administrator will become more aware of the stress involved in fulfilling the role and responsibilities of the nurse administrator position, and (2) the nurse administrator will recognize the importance of planning in managing stressful situations.

Assumptions

1. It was assumed the nurse administrators who participated in the study were honest in their responses to the questionnaire.

2. It was assumed the nurse administrators who participated in the study gave responses based on actual behaviors or feelings rather than on expected behaviors or feelings.

3. It was assumed the questionnaire was appropriate for the purpose of the study.

Limitations

1. The use of the pronoun "she" to denote the nurse

administrator throughout this study has two bases. First, the convenience of not having to write he/she in every reference. Second, the number of professional nurses who are female is overwhelmingly in the majority, so it is not surprising that the preponderance of nurse administrators is also female.

2. This study was limited to the investigation of specific data sought from nurse administrators in general hospitals throughout Tennessee.

3. This study was limited to the instrument used and by the research methods employed. Responses to the study were limited to the answers given to the instrument including the Health Professions Stress Inventory by Wolfgang (1988a), strategies for dealing with stress adapted from Billings and Moos (1981), and the demographic questionnaire constructed by the investigator. Appendices A and B contain letters of permission from Wolfgang and Moos.

4. Data analyzed in this study are those submitted by respondents on invitation of the investigator. No effort has been made to validate responses through use of questionnaires or interviews directed to superiors or subordinates of the respondents. Therefore, the accuracy of the information reported in this study is dependent upon the extent to which respondents were aware of and accurately reported requested information.

Research Questions Relative to the Study

1. Does the Health Professions Stress Inventory instrument identify subscales that measure stress of nurse administrators?
2. What overall occupational stress levels are reported by selected nurse administrators for total stress?
3. Are there differences in occupational stress levels, overall and subscales, of nurse administrators according to age, sex, marital status, total number of years of professional nursing experience, number of years as a top level nurse administrator, educational attainment level, and size (bed capacity) of hospital?
4. What type of strategies are identified and are there differences in overall and subscale strategy scores by nurse administrators for dealing with or managing occupational stress according to age, sex, marital status, total number of years of professional nursing experience, number of years as a top-level administrator, educational attainment level, and size (bed capacity) of hospital?
5. Which type of strategies are related to a particular type of stress?

Hypotheses

The following 14 research hypotheses were formulated to address the research questions derived from the study and review of the literature. Hypotheses 1 through 7 were generated in relation to research question three concerning

the differences between perceived stress level of nurse administrators and selected demographic variables.

Hypotheses 8 through 14 were generated in relationship to research question five concerning differences between strategies used by nurse administrators to manage occupational stress and selected demographic variables.

H1 There will be a significant difference between stress level scores of nurse administrators 45 years of age or less and nurse administrators 46 years of age or older.

H2 There will be a significant difference in reported stress levels between male and female nurse administrators.

H3 There will be a significant difference in reported stress levels between unmarried and married nurse administrators.

H4 There will be a significant difference between stress level scores of nurse administrators with 20 years of or less of professional nursing experience and nurse administrators with 21 years or more of professional nursing experience.

H5 There will be a significant difference in stress levels between individuals who have been in a top level nurse administrator position for 12 years or less and their colleagues who have been in a top level nurse administrator position 13 years or more.

H6 There will be a significant difference in stress levels between nurse administrators who have an educational

attainment of less than a master's degree level and nurse administrators whose educational attainment is a master's degree or higher.

H7 There will be a significant difference between stress levels of nurse administrators employed in agencies with 99 beds or less, 100 to 399 beds, and 400 beds or more.

H8 There will be a significant difference between strategies used to deal with or manage occupational stress by nurse administrators 45 years old or less and nurse administrators 46 years old or older.

H9 There will be a significant difference in strategies used to deal with or manage occupational stress between male and female nurse administrators.

H10 There will be a significant difference in strategies used to deal with or manage occupational stress between unmarried and married nurse administrators.

H11 There will be a significant difference between the strategies used to deal with or manage occupational stress of nurse administrators with more than 20 years or fewer of professional nursing experience and nurse administrators with 21 years or more of professional nursing experience.

H12 There will be a significant difference in strategies used to deal with or manage occupational stress between individuals who have been in a top level nurse administrator position for 12 years or less and their colleagues who have been in a top level nurse administrator

position 13 years or more.

H13 There will be a significant difference in strategies used to deal with or manage occupational stress between nurse administrators who have an educational attainment of less than a master's degree and the nurse administrator whose educational attainment is a master's degree or higher.

H14 There will be a significant difference in strategies used to deal with or manage occupational stress by nurse administrators employed in agencies with 99 beds or less, 100 to 399 beds, and 400 beds or more.

Definition of Terms

For this study, the following definitions were formulated:

Demographic Variables

The demographic variables in this study refer to items included in the investigator's prepared demographic questionnaire for nurse administrators. The items are: age, sex, marital status, years of professional nursing experience, total number of years as a top level nurse administrator, educational attainment level, and size (bed capacity) of agency.

General Hospital

According to the American Hospital Association (1991) Guide to the Health Care Field, "hospitals are registered as one of four types: general, special,

rehabilitation and chronic disease, or psychiatric" (p. A5).

The primary function of the general hospital is to provide patient services, diagnostic and therapeutic, for a variety of medical conditions. A general hospital also shall provide: diagnostic x-ray services with facilities and staff for a variety of procedures; clinical laboratory services with facilities and staff for a variety of procedures and with anatomical pathology services regularly and conveniently available; operating room service with facilities and staff. . . .Registered nurse supervision and other nursing services are continuous. (American Hospital Association, 1991, pp. A4, A5)

In the general hospital, "short term average length of stay for all patients is less than 30 days or over 50 percent of all patients are admitted to units where average length of stay is less than 30 days" (American Hospital Association, 1991, p. A8).

Nurse Administrator

According to McClure and et al. (1983), a nurse administrator is a registered nurse employed by the institution to which the position is assigned top level responsibilities for planning, coordinating, directing, controlling, and evaluating the overall functioning of the nursing department and who assumes the top nursing leadership position in the general hospital

organizational hierarchy. The title will be used interchangeably with director of nursing, assistant administrator for nursing, vice president for nursing services, associate hospital administrator, executive director of nursing, nurse executive, associate hospital director for nursing, assistant director for Patient Services, and other titles to which the top level nursing position is assigned. (p. 10)

Occupational Job Stress

Occupational job stress is defined as that factor or factors in the work environment that are perceived as stressful to the worker as a result of the worker's belief that a discrepancy exists between the demands of the job and the abilities of the worker to meet those demands (Kleinburg, 1984). As Beehr and Newman (1978) noted: "The job stress phenomenon involves complicated interactions between the person and the environment" (p. 669).

Occupational Stress Level

Occupational stress level is determined by the respondents' answers to the Health Professions Stress Inventory (Wolfgang, 1988a) statements directed toward stress.

Strategies Used to Deal with or Manage Occupational Stress

Random House Dictionary (1987) defined strategy as "a plan, method, or series of maneuvers or stratagems for obtaining a specific goal or result" (p. 1298). According

to Keller (1983) the word strategy is "derived from the Greek verb stratego, meaning to plan to defeat one's enemies through the effective use of resources. . . . since the Second World War, strategy has become a term used extensively in business" (pp. 74-75).

Strategies used by nurse administrators to deal with or manage occupational stress is determined by the respondent's answers to Part III which consists of 17 statements identifying strategies which may be used to deal with or cope with stress (Billings & Moos, 1981).

Stress

According to Rabkin and Struening (1976b, December), "stress is the organism's response to changing conditions consisting of a pattern of physiological and psychological reactions, both immediate and delayed" (p. 1014).

Procedures

1. The current literature was reviewed.
2. After selection of the topic for the research study, the entire state of Tennessee was selected for the geographical area of study.
3. A listing of the 146 general hospitals and names of nurse administrators within the geographical area was selected from the following sources: (1) The AHA Guide to the Health Care Field (1991, pp. A380-A398); (2) The AHA Directory of Health Care Professionals (1991, pp. A1318-1354); and (3) The Official Southern Hospital Blue Book

(1991, pp. 583-646).

4. Materials reviewed during the search for an appropriate instrument to be used in this study included: The Ninth Mental Measurement Yearbook (Mitchell, 1985); Tests in Print III (Mitchell, 1983); Tests: A Comprehensive Reference for Assessments in Psychology, Education and Business (1986); The Health Professions Stress Inventory (Wolfgang, 1988a); and a questionnaire on dealing with job related stress (Billings & Moos, 1981).

5. The instruments used to collect data included: a demographic questionnaire constructed by the investigator; the Health Professions Stress Inventory by Wolfgang (1988a); and a list of strategies for dealing with or managing stress (Billings & Moos, 1981). The two latter sections have been validated for item reliability and content validity.

6. Descriptive and inferential statistical analysis were applied to the data gathered in the study.

7. The results were summarized and reported.

Organization of the Study

The study was organized into five chapters.

Chapter 1 contains the introduction, the statement of the problem, the significance of the study, the assumptions, limitations, research questions, hypotheses, definition of terms, procedures, and organization of the study.

Chapter 2 contains a review of relevant literature.

Chapter 3 contains a description of the methods and

procedures used in the study.

Chapter 4 contains a presentation and analysis of the data.

Chapter 5 contains a summary of the study, with conclusions and recommendations.

CHAPTER 2

Review of Literature

Introduction

Chapter 2 begins with information about the concept of stress, definitions of stress, and research involving the concepts of stress. Occupational stress, definitions of occupational stress, and research studies are discussed, followed by demographic variables related to stress.

The next section of this chapter deals with research findings related to job stress in the nursing profession. The final section addresses stress associated with the nurse administrator's position and strategies used by nurse administrators to deal with and manage occupational stress.

The Concepts of Stress

According to Selye (1974):

The concept of stress is very old. It must have occurred even to prehistoric man that the loss of vigor and the feeling of exhaustion that overcame him after hard labor, prolonged exposure to cold or heat, loss of blood, agonizing fear or any kind of disease had something in common. He may not have been consciously aware of this similarity in his response to anything that was simply too much for him, but when the feeling came he must have realized instinctively that he had

exceeded the limits of what he could reasonably handle--that in other words he had "had it."

(pp. 33-34)

Early pioneers in the study of the concept of stress included the great French physiologist, Claude Bernard, who during the second half of the 19th century, pointed out that the internal environment of a living organism must remain fairly constant, despite changes in its external environment (Selye, 1974). Cannon (1935) conducted laboratory experiments on the "fight or flight" reaction to stress and he suggested that "the coordinated physiological processes which maintain most of the steady states or equilibrium in the organism" should be called "homeostasis" meaning the ability to stay the same or static.

Selye (1936), who is frequently referred to as the "father of stress," first described "a syndrome produced by diverse noxious agents," detailing the physiological response of laboratory animals to a variety of noxious agents such as exposure to cold, surgical injury, and drugs.

During the 1940s and early 1950s, Harold G. Wolff (1950) described a variety of diseases as being influenced by "life stress." In 1955, Selye addressed the American Psychological Association and the term stress, took off in psychological as well as medical circles. The 1960s and 1970s saw the advent of research on stress by various disciplines (Lazarus, 1966; McGrath, 1970). The last two

decades have seen a determined effort to identify sources of work and organizational stress (Cooper & Payne, 1978; Jacobson, 1977; Margolis, Kroes, & Quinn, 1974; Olson, 1987). In 1980, Ivancevich and Matteson wrote: "We are only at the very infant stages of understanding the interrelatedness, consequences, and problems of stress at work" (p. 229).

Interest in the concept of stress and stress research has grown dramatically over the past two or three decades. Along with this burgeoning interest, controversy as to the definition of stress and confusion as to its application in the study of human behavior have also grown. Stress, a difficult term to define precisely and succinctly, has led some individuals in the field to question the usefulness of the concept of stress, given the present confusion. As Mason (1975) wrote: "It is tempting to suggest that we might be better off without the term 'stress' at all, given our present crude level of insight" (p. 35). Although many investigators continued to find the concept of stress useful, they almost uniformly warn of the ambiguity and vagueness associated with the term (Appley & Trumbull, 1977; Mikhail, 1981).

McGrath (1976), a social psychologist, stated the popular view of stress as something evil that would change if what we called stress were relabeled "challenge." Ewing (1964) described various ways in which stressful situations

can be turned to advantage. He discussed the need to meet the challenge, as a competitor in the market can stimulate enthusiasm and spur managers to creative thinking and more imaginative performance.

Selye (1976a) reported:

Stress is not invariably harmful but may actually have prophylactic or curative value under certain conditions . . . For example, syntoxic hormones (glucocorticoids) liberated during systemic stress can protect against various excessive and inflammatory or immune reactions.
(p. 28)

Definitions of Stress

One of the early attempts to define stress grew out of Selye's (1936) exploration of the effects of noxious agents on the organism. By 1956, Selye had come to think of stress as "the rate of all the wear and tear caused by life" (p. viii). Still later, he stated simply: "Stress is the non-specific response of the body to any demand made upon it" (Selye, 1973, p. 692).

According to Hinkle (1974), the fact that the concept of stress developed from a variety of sources has contributed to imprecision in its use. He regarded stress as being: "man's response to many sorts of noxious agents and threats" (p. 339), including events perceived as threats. Haythorn (1970) also noted the imprecision of the term stating that: "the term stress is used to reference a

wide variety of physiological, behavioral and cognitive phenomena" (p. 157). Wolf and Goodell (1968) defined stress as: "a dynamic state within an organism in response to a demand for adaptation" (p. 4). Seyle (1974), continuing this extensive research on stress, described the general adaptation syndrome and to detail its effect on the organism. According to Seyle, the body reacts in a coordinated way (hence syndrome) to a variety of noxious agents for purposes of adaptation. He detailed three states of the adaptive response, namely:

- 1) the initial alarm reaction; 2) resistance; and 3) exhaustion. In addition to this temporal modality, these reactions are said to occur in space within the organism, in the pituitary-adrenal-cortical system. (pp. 36-38)

In 1976, Seyle developed an operational definition of stress, based upon his research and his concept of the general adaptation syndrome and its essential component of nonspecificity. Rejecting the concept of stress as the: "common denominator all adaptive reactions in the body" (Seyle, 1976b, p. 64), as being too vague, Seyle formulated a definition of stress that he argued would successfully "fit all the facts." Stress, according to Seyle, "is the state manifested by a specific syndrome which consists of all the nonspecifically-induced changes within a biologic system" (Seyle, p. 64). This definition, still widely

accepted in the medical sciences (Mikhail, 1981), is characterized by strong physiological orientation and a focus on the response component. Most importantly, Seyle's concept of specific body and biochemical change as representing a nonspecific adaptive response remains central to his theoretical formulations (Mason, 1975). Haw (1982) defined stress as "an imbalance between the perceived demand and the person's perception of his or her ability to meet that demand" (p. 134). For the purpose of this study, stress is viewed as "the organism's response to changing conditions consisting of a pattern of physiological and psychological reactions, both immediate and delayed" (Rabkin & Struening, 1976b, December, p. 1014).

Research Involving the Concept, Stress

For many years, Seyle's research and influence in the field of stress focused on physiological stress. Seyle (1974) defined stress as: "the state manifested by a specific syndrome which consists of all the nonspecifically induced changes within a biologic system" (p. 64).

Seyle's concept of specific body and biochemical changes as representing a nonspecific adaptive response has been questioned in the literature. Mason (1975) suggested that Seyle had failed to take into account the individual's emotional reactions to the various stimuli being presented. Lacey's (1967) research has questioned the concept of a specific syndrome of stress and has

documented differing biochemical reactions to different stimulus conditions. He argued that the stress syndrome is not stereotyped as Selye's general adaptation syndrome would imply and he further suggested that stress reactions vary according to the nature of the stimulus and the individual characteristics of the subject. The issue of the intensity of stress has been supported by Mikhail (1981) who reiterated that the intensity of stress is an important element in the individual's reaction. Mikhail questioned Selye's omission of both the causal elements in stress and the intensity needed for its arousal. In reviewing past work on stress, Mikhail (1981) reported that three important aspects of stress were identified:

Individuals differ in their reactivity to stress; stress is determined by the perception of the stressful situation rather than by the situation itself; and the extent of stress depends partly on the capability of the individual to cope. (pp. 12-13)

Mikhail's theory supported the research of Lazarus, Reese, and Oster (1952). The latter provided an overview and a synthesis of the literature on the psychological aspects of stress noting that the effects of stress are not general but: "will depend upon what the individual expects or demands of himself" (p. 296). Appley and Turnbull (1977) wrote that with the exception of life threatening situations, "it is reasonable to say that no stimulus is a

stressor to all individual's exposed to it" (p. 61).

Selye (1976a, p. 15) commented that "depending upon conditions, stress is associated with desirable or undesirable effects. However, in everyday life we must distinguish between two types of stress effects, namely, eustress (good stress) and distress (bad stress)."

A second aspect of stress explored by Lazarus (1966) is that of taking into account the individual's perception of the stressful situation which eventually led to the term "cognitive appraisal" used in describing threat perception as a mediating condition. Chan (1977), in his formulation of a cognitive theory of stress, gave great support to this concept of appraisal of the significance of the stressful events to the individual. He noted that: "Appraisal is then conceptually taken as the intervening process in psychological stress analysis, as the forerunner of the stress reaction" (p. 93). McGrath (1977, p. 67) summarized his research findings on stress and noted that "emotional experiences and, to some extent, physiological and performance measures are in part a function of the perceptions, expectations, or cognitive appraisal which the individual makes by the stressing situation."

Thus, stress is seen as occurring when the individual perceives that the demands encountered will exceed the ability to adjust appropriately or to cope effectively.

Occupational (Job) Stress

Most adults in industrialized societies spend from one-third to one-half of their waking hours at work in an organizational setting. Thus, solely on the basis of exposure, stress associated with organizational settings constitute a major part of the total stress experienced in people's lives. Organizational work settings are likely sources of stress because they provide the main context in which society makes demands on people not only to perform but also to conform to specific organizational standards (Kahn, Hein, House, Kasl, & McLean, 1982).

Definitions of Occupational Stress

Occupational stress is the stress resulting from aspects of the job or work place and is only one aspect of the many types of stress that can be experienced. Job (occupational) stress is defined as that factor or factors in the work environment that are perceived as stressful to the worker as a result of the worker's belief that a discrepancy exists between the demands of the job and the abilities of the worker to meet those demands (Kleinberg, 1984).

LaRocco, House, and French (1980) addressed work situations or conditions as being potentially stressful where such conditions may give rise to perceived job stress--a perception that environmental demands exceed the abilities of the individual or that environmental

supplies will leave major needs or motives of the person unmet. (p. 203)

Singer, Neale, and Schwartz (1987) reported: Corporate and labor definitions of occupational stress were widely divergent. Stress, according to corporate respondents, was primarily a question of maladaptive personal lifestyles and poor person-environment fits. Alternatively, labor representatives portrayed stress as the product of organizational conditions that promote loss of control, work overload or work underload. (p. 1)

Beehr and Newman (1978) pointed out that "the job stress phenomenon involves complicated interactions between person and environment" (p. 669).

Jones and Dubois (1987) identified occupational stress as " the adverse emotional and physical reactions employees have to any source of pressure in their work environment. These stress reactions negatively affect personal health and organizational effectiveness and often create losses" (p. 48).

Job stress as studied by Caplan, Cobb, French, Harrison, and Pinneau (1975) referred to "any characteristics of the job environment which poses a threat to the individual. The threat may be demands which he may not be able to meet or insufficient supplies to meet his needs" (p. 3).

Jones and Dubois (1987) commented further that "employees continually confront various pressures or stresses." They experience stress of inability to effectively cope with such stresses as: poor management, lack of job security, work overload, unclear communication, excessive deadline pressure, unrealistic expectations, insufficient pay, and uncertainty about job duties and responsibilities.

Harrison (1978) discussed the notion of "person environment fit" and job stress, arguing " the stress on an individual can be conceived as the sustained tension which occurs when the environment does not provide or threatens not to provide the goals which the individual seeks" (p. 181). McMichael (1978) concluded, "Stress occurs when the abilities of the person are incongruent with the demands of the job environment or where clear obstacles exist to fulfilling strong needs or values--there's a bad 'fit' between the individual and his environment" (p. 130).

A model of person-environment fit has been developed and the components of job complexity, role ambiguity, responsibility for persons, work load, income, overtime, length of service, and education have been identified (French, Caplan, & Harrison, 1982). Other factors identified by French and Caplan (1972) included role conflict and strain, role overload, organizational territory, poor relations with others, and the extent to

which a person has influence on decision processes of the organization.

Occupational Stress and Research Studies

The study of occupational stress (as opposed to other sources of stress) was given tremendous impetus in the early 1970s by the establishment of the National Institute for Occupational Safety and Health (NIOSH) by Public Law 96-596 (Occupational Safety and Health Act of 1970). From its inception, NIOSH has carried out a concerted research effort to examine the role of behavioral and psychological factors in the occurrence of occupational injuries and illnesses.

Three major research studies pertaining to occupational stress were completed by NIOSH from 1971 to 1976. Smith, Colligan, and Hurrell (1980) addressed the significance of these studies:

First, they are significant because they represent the only unified effort by a research group to compare stress/strain levels over a wide range of occupations. Second, they have been instrumental in defining, verifying and elaborating critical work place factors related to stress such as machine pacing, lack of control, poor supervisory relations and lack of social support. Finally, they have identified many high-risk occupational groups suffering from job-related stress and strain that are worthy of in depth evaluation.

(p. 4)

Patterson, Craven, Schwartz, Nardell, Kasmer, and Noble (1985) explored psychological problems and stress of health care workers. The authors reported, "Stress in the hospital can be divided into two major areas: organizational factors to which everyone is subjected and affective factors to which there is wide variation of individuality adaptability" (p. 670).

Although individual reactions to demands vary, and the unique interactions of the individual and the job environment need to be taken into account, identifying the sources of stress in the job environment is crucial in understanding the overall effects of occupational stress. A few occupations that have traditionally been considered to be highly stressful include police work, lawyers, judges, physicians, nurses, pharmacists, insurance agents, real estate agents, and air traffic controllers (Ivancevich & Matteson, 1980). Kroes, Margolis, and Hurrell (1974) discovered that among policemen, life threatening situations are not the primary stressor, rather major stress stems from administrative issues and contacts with the court system. An occupational analysis of approximately 22,000 health records of persons with diagnosed mental health disorders judged to be stress related was conducted to determine whether certain occupations were overpresented. Of 130 occupations studied, incidence of stress-related diseases was greater than expected for general and construction

laborers, secretaries, inspectors, clinical laboratory technicians, office managers, foremen, waitresses and waiters, machine operators, farm workers, painters, managers, and administrators (Smith, Colligan, & Hurrell, 1978). In this same study, when the major occupations were rank ordered in terms of the relative incidence of mental disorders, 7 of the top 27 occupations related to health care operations--health technologists, licensed practical nurses, clinical laboratory technicians, nursing aides, health aides, registered nurses, and dental assistants. The results of this study indicate a disproportionate incidence of mental health anomalies among the hospital and health care professions.

Air traffic controllers are in an occupation that has been the most studied and theorized about concerning occupational stress. In spite of ideal physical working conditions, air traffic controllers experience considerable stress, presumably because of the life and death impact of their decisions. They suffer from incidences of ulcers, hypertension, alcoholism, divorce, and suicide many times the rates for the general population. The stress and toll of the job is so great that it is most unusual to find a controller who has been on the job for as long as 15 years (Rose, Jenkins, & Hurst, 1978).

As an effect of occupational stress, the development of physical and mental illness is well established.

Investigators reveal that workers who report higher levels of perceived stress due to job dissatisfaction and personal conflict are more likely to experience somatic symptoms, be more accident prone, and less productive.

As discussed by Margoles and et al. (1974), job stress must be considered an unlisted and underrated occupational hazard. Studies of occupational stress have consistently documented negative effects on the employee, both physical and psychological, in terms of lowered productivity, increased job dissatisfaction, increased job turnover, and increased stress related illnesses, such as coronary heart disease, ulcer, migraines, and mental illness.

Demographic Variables and Stress

Researchers have correlated various demographic variables with stress. Haw (1982) pointed out that there are fewer studies on work-related stress concerning women. Haw found that for every study concerning women and work-related stress in the last decade, there have been roughly six concerning men. Haw's study revealed that unemployed housewives were significantly more depressed than working housewives. Thus, suggesting that employment has a beneficial effect on mental health for women.

Gordon and Strober (1978), compared men and women at similar occupational levels, found that women reported more symptoms of stress than men, such as feeling depressed, having nightmares, feeling overwhelmed, and experiencing

stomach distress. Among men and women with an M.B.A. degree who were employed full time, the women with families were more likely to assume responsibility for household management and child care than their male counterparts.

Haw (1982) further commented that women with major family responsibilities and heavy role demands at home may find a particular workload on the job overwhelming, whereas their unmarried counterparts may find the same job to be challenging. Cohen (1979) reported that working women experienced greater physical and emotional distress than men. Women were nearly twice as likely as men to express negative attitudes toward their work.

The level of psychophysiological disorders are higher for women than for men (Kessler & McRae, 1981). This fact has been substantiated by Cooper and Davidson (1982) who reported that migraine headaches, hypertension, fatigue, irritation, and high anxiety levels were more prevalent among female top executives than male executives. Jick and Mitz (1985) indicated that women tend to report higher rates of psychological distress and that men are more prone to severe physical illness.

Freedman and Bisesi (1988) addressed potential sources of stress for working women. Findings revealed:

Working women will have the same job specific stressors as men and will also have a number of possible unique stressors. These unique stressors include the stress

associated with balancing family work demands and with organizational practices and policies that may negatively impact women such as discrimination in promotions, pay, and other organizational decisions, sex role stereotypes, lack of support, social isolation, pressure to become more like men and sexual harassment. (p. 33)

Hillestad (1984), in her study of nurse administrators relative to supportive work environments, revealed that nurse administrators who were over age 50 and had more than eight years of work experience as a nurse administrator reported "high average" supportive relationship scores that indicated a low stress level. Nurse administrators who were less than 50 years of age with eight or fewer years of nurse administrative experience reported "low average" supportive relationship scores and a higher stress level.

In their review of literature on life events, stress and illness, Rabkin and Struening (1976a) discussed demographic characteristics such as age, education, income, and occupation that may contribute to an individual's evaluation of stressful conditions and the response to them. Robinson (1986) investigated the relationship between stress and age. The author pointed out that gender differences were significant with females demonstrating lower levels of self esteem, higher anxiety, and generally more stress than males at all ages. Kessler (1979) found distinctions

between the married, single, and the widowed regarding perceived stress. The unmarried, both single or widowed, are disadvantaged in being more exposed to stress and they are more highly influenced by stress than individuals who were married. Dohrenwend (1973), in studying social status and stressful life events, disclosed:

Members of lower class and women were both found to be exposed to a relatively high rate of change or instability in their lives, with evidence that this instability was a factor in producing a high level of individual distress in lower status individuals.

(p. 233)

Studies to determine factors influencing first year medical students' perception of stress, found that among first year students there is a tendency for older students to rank stressor items as less threatening than younger students and the married students perceived some stressors as less significant than single students (Coburn & Jovaisas, 1975; Murphy, Madelson, & Notman, 1984). Carmel and Bernstein (1987) reported the age of the student and year of study in a medical school program represented maturity and experience in dealing with stressors.

Bomar's (1982) study of job stress and nurse faculty found a significant relationship existed between certain demographic variables and job related tension.

The demographic variables, age, years of tenure,

assistant professor rank, years of teaching, hours spent in preparation for academic responsibilities, major curriculum, the number of changes in a school and methods of keeping abreast were found to be significantly related to the job related tension.

(p. 3938-A)

The following section of the review of literature focuses on sources of stress among professional nurses.

Professional Nurses: Sources of Stress

Prior to the nation's tremendous growth of the health care delivery system, Devereaux and Weiner (1950) wrote that the average nurse is doomed to a great deal of frustration owing to the ill-defined professional hierarchy. The responsibility for people and human lives rather than inanimate objects is a major characteristic of nursing positions. Matteson and Ivancevich (1982) remarked that "responsibility for people is a much more potent stressor than responsibility for things" (p. 111).

Approximately 68% of all professional nurses in the United States are employed by hospitals (Facts About Nursing, 1987), a bureaucratic organization that produces conflict and reduces autonomy. On the subject of reduced or limited autonomy, Simon (1976) stated:

The decisions which the organization makes for the individual ordinarily (1) specify his function, that is the general scope and nature of his duties; (2)

allocate authority, that is determine whose organization is to have power to make further decisions for the individual; and (3) set such other limits to his choice as are needed to coordinate the activities of several individuals in the organization. (p. 8)

Calhoun (1980) addressed the issue that hospitals were particularly stressful employers and he identified the following specific job-related stress agents:

work overload (physical and mental); job insecurity; poor match between job and workers' abilities, role ambiguity; working in unfamiliar areas; too great of an emphasis on perfection; serving a population that has anxiety or fear; nonparticipation in planning or decision making; responsibility for other people; underutilization; resource inadequacy; unfilled ambitions; interpersonal conflict; rapid technological changes; and feeling of immortality (constant exposure to death). (p. 172)

Hutchinson (1987) identified stress-related problems encountered by professional nurses to include "lack of authority to delegate duties, difficulties with paraprofessionals such as physician assistants and paramedics, incompetent and unsympathetic supervisors, inadequate supplies and equipment, poor salaries, staffing, and problems with cost containment" (p. 192).

Gunning (1983) reported that nurses are educated with

the philosophy that their primary responsibility is to meet the needs of the patient, but as employees nurses are expected to meet the needs of the institution. Thus, many professional nurses find their internal value system in conflict with the value system of the employer, the physicians, and other health care providers.

Menzie's (1960) four-year study of nurses in a large hospital in London focused on the effects of social systems on nursing anxiety. Menzie suggested that the nature of difficult nursing tasks, that included working with critically ill and dying patients and dealing with relatives of patients, involved demands which increased the experience of stress by professional nurses. Demands made by nursing colleagues were found also to be great sources of stress. Results of this study revealed the defenses used by nurses against stress took the form of: exaggerated concerns over co-workers' competency; idealizing one's own personal qualities as though they were organizational requirements; and avoiding change. High levels of tension, stress and anxiety experienced by nurses led to withdrawal from duty (high absenteeism rate), student dropout, high position turnover, and increased postgraduate training.

Stehle (1981) pointed out that nursing in general was highly stressful prior to the advent of the intensive or critical care units in the late 1950s and early 1960s. Stehle further commented that: "Critical care units,

although generally portrayed as highly stressful, were not shown to be more stressful than other types of nursing units" (p. 182). Numerof and Abrams (1984) found that nurses in the psychiatry, surgery, medicine, and intensive care units tended to report the highest level of stress. Other findings indicate that age, nursing role status, length of time since graduation, job tenure, area of nursing, and interpersonal needs are associated with various dimensions of stress (p. 88).

Joiner and van Servellan (1984) wrote: Being a professional nurse in today's fast paced hospitals is physically gruelling, emotionally draining and intellectually taxing. Nurses' responsibilities for making critical patient care decisions have increased dramatically over the past 10 years as hospitals have shifted to an increasingly sick patient population . . . The undervaluation by physicians and hospital administrators of nurses' knowledge and experience is a major source of nurses' dissatisfaction and frustration which may ultimately have an effect on the individual nurse's health, cause emotional upset, and stress induced depression. (pp. 2-3)

Jacobson and McGrath (1983) reported that nursing is generically a stressful occupation and except for isolated studies, the research on nursing stress has directed its attention to intensive care nursing almost

exclusively. Gardam (1969), Holsclaw (1965), Vreeland and Ellis (1969), among others, alerted nursing, medicine, and related professions to dangers inherent in intensively concentrated hospital environments. Strauss (1968) reported stress antecedents for intensive care nurses that included: complicated equipment, narrow patient care focus, great responsibility, conflict with administration, and crisis atmosphere. Kornfield (1971) described tension in the intensive care unit and suggested that high turnover rates were attributable to stresses experienced. Sources of stress for intensive care nurses identified by Huckabay and Jagla (1979) included: interpersonal communication problems; the nurses' need for an extensive knowledge base; the unit environment; and the requirements of patient care. Jacobson (1977) reported the stressful situations encountered by neonatal intensive care nurses included: nurse-physician problems; understaffing, heavy work load; sudden death or relapse of an infant; and personal insecurity.

Maloney (1979) compared the stress levels of intensive care nurses and nonintensive care nurses. His findings support that nursing, in general, is an anxiety-producing occupation with the nonintensive care nurses state anxiety scores significantly higher than those of the intensive care nurses.

Wolfgang (1988a, 1988b) compared stress levels between

physicians, pharmacists, and professional nurses. According to the total score, nurses reported significantly more stress than did either pharmacists or physicians.

Revicki and May (1989) reported that "the organizational environment directly influenced job stress for professional nurses and occupational stress exerted a strong direct influence on the development of depressive symptoms in nurses" (p. 30).

Other sources of stress for professional nurses include: working in an environment where noise acts both as a physiological and psychological stressor; offensive odors; biological, chemical and radiation hazards; and shift rotation (Jacobson & McGrath, 1983; Patterson et al., 1985).

Shift rotation, a major area of stress for many nurses, is prevalent in many hospitals. The Stanford study conducted under the auspices of the National Institute of Occupational Health and Safety revealed that rotating shift nurses were significantly more confused, depressed, and anxious than nurses in nonrotating positions (Tasto, Colligan, & Skjei, 1978). The National Survey of National Health Practices and Consequences revealed that women working rotating shifts were more likely than women day workers to report job stress, emotional problems, or the use of sleeping pills, tranquilizers, and alcohol (Gordon, Clearly, Parker, & Czeisler, 1986).

The Nurse Administrator and Stress

The literature review revealed many articles and studies about stress among professional nurses assigned to positions at the unit level. The nurse administrator is both a professional nurse and administrator. Numerof, Hendin, and Cramer (1984) wrote: "Surprisingly, attention to stress in health care professionals has not extended beyond direct providers to administrators" (p. 70).

More than two decades ago, Cassell (1967, May) described the strained relationship she experienced as director of nursing service with other members of the organizational team as a result of continual cross pressures exerted on her by these members that included other department heads, physicians, and her superiors.

As mentioned in a previous section, the concern regarding occupational (job) stress experienced by nurse administrators surfaced with a study by Arndt and Laeger (1970a, May/June; 1970b, November/ December) "to determine the sources of unique stress on the director of nursing position and to evaluate certain factors in the internal hospital environment that might provide a lucid explanation of the causes and consequences of the stress experiences" (p. 495).

Nurse administrators experience a high level of stress as postulated by Arndt and Laegar (1970a, 1970b). Many administrators reported a lack of clarity about what is

expected of them and confusion about what their roles are. She is expected to relate to people in a wide variety of roles assumed to be complementary but actually often antagonistic to nursing personnel.

Erickson (1971) addressed the position of the nursing service administrator to be many faceted and demanding due to changes in expectations and demands for health care, medical technology, government regulations and constraints, concepts of management, and the changes in nursing service and education. Whetstone (1977) pointed out, "The nurse administrator's job is fraught with role inconsistency, ambiguous administrative functions, and interpersonal stress. She is expected to perform at a competent managerial level while she simultaneously sorts out and transcends the organizational pressures and constraints" (p. 1).

Another source of job stress experienced by the nurse administrator is identified by Aikens (1982) who stated that the nurse administrator does not always occupy the same place in the hospital's power structure as other top level administrators. The nurse administrator may report to a physician or an assistant hospital administrator who frequently has less health care experience and often times less formal preparation in health care.

Arndt and Huckabay (1975) pointed out that the nurse administrator must be both nursing (patient care) and

business oriented while the hospital administrator is primarily business oriented.

Smith and Mitry (1984) revealed that: The overall climate of the health care organization may be poor top-echelon leadership, inadequate compensation, and inappropriate job design. Nursing leaders must be attentive to nursing stress--a dilemma whose manifestations vary widely. The nurse administrator must realize that a poor organizational climate affects all of an organization's employees even though its causes may not be evident within her own department. (pp.48-49)

Smith and Mitry further commented on benefits of the nurse leadership buffering concept:

Nursing leaders must buffer their subordinates from the health care facility's medical staff--the opportunities for physicians to abuse supporting health professional and auxiliary personnel are, unfortunately, many. The conflicts that result from such abuse are dysfunctional to everyone in the health care setting--patients, nurses, administrators, auxiliary personnel and health institution. (p. 49)

Clark (1980) reported, " Unrealistic dedication, work overload and organizational stress can lead to burnout in nurse administrators and staff--a major factor leading to burnout is the reluctance of nurse administrators to

legitimize their own right to health and well-being. . . . the nurse administrator is confronted by many demands, both reasonable and unreasonable, from superiors and subordinates" (p. 39).

Numerof et al. (1984) conducted a study to provide insight into sources of stress, coping strategies, and stress outcomes relevant to health care administrators. Results of this study found that total stress scores highest for nurse administrators followed by middle managers, associate administrators, medical staff residents, chief executive officers, and medical directors. The data from the study suggested that individuals in the middle range of the organizational hierarchy, nursing directors and department heads experienced the greatest amount of situational stress, while those highest in the hierarchy experienced the lowest amount of stress. The three most stressful situations reported were: having too many time demands (role ambiguity), meeting their own expectations for excellence, and seeing problems with the organization and not having the resources to correct them.

Hillestad (1984) investigated professional loneliness and supportive relationships among 94 nursing service administrators in Texas. The nursing service administrators were asked to respond to a number of incidents developed and tested by the investigator that assessed the supportive relationships available to the nurse administrators in their

work settings. The incidents consisted of common problems or decisions that nursing service administrators face. The nurses were asked to indicate how supportive their superiors, peers, subordinates, or others in their hospital setting would be in regard to the specific incidents. Supportive relationships were defined as associations or connections with persons working for the same hospital in which there is a mutual upholding, aiding, or sustaining. Upholding, aiding, or sustaining were characterized as sharing values, goals, concerns, problems, and feelings. Forty-seven percent of the nurse administrators surveyed reported that they lacked supportive relationships that stemmed from the differences between the nurse administrators and other hospital administrators.

Scalzi (1988) investigated role stress among nurse administrators and reported that four major role stress related factors were identified: overload; concerns regarding quality of care; role conflict; and role ambiguity. The most pervasive source of job stress was overload that included, "(1) conflicting expectations from hospital administrators and the nursing department, (2) too large a span of control, (3) too many expectations for the job in general, and (4) difficulties related to managing personal time" (p. 35).

The author further reported that "concerns about the quality of patient care produced the most severe job stress

among nurse executives and was strongly associated with increased depression and role conflict and decreased job satisfaction" (p. 35). The quality of care issues centered around concerns regarding competence of nursing staff and medical staff and overall quality of patient care.

According to Scalzi (1988), role ambiguity was found to be significantly lower for nurse executives than for managers in other industries. The issue of role conflict revealed "frustrations experienced by nurse executives due to not enough time in the day, constant interruptions, and not enough personal time. . . . The conflict that nurse executives reported was viewed as beyond their control" (p. 36).

The female nurse administrator, as does any employed female, is more at risk for the possibility of role strain, stress, and conflict than the male nurse administrator. According to Prock (1975), the need for working females to fill several roles simultaneously, that of wife, mother, or caretaker of aging parents, does not change her work role expectations. In contrast, the work role for men is traditionally primary with any of the nurturant activities being secondary or optional.

The nature of the role of the nursing service administrator is such that supportive relationships associated with it may be lacking thus contributing to occupational stress. In those instances where there is

this lack, nursing service administrators can be expected to be professionally lonely. (Hillestad, 1984, p. 8)

Strategies Used by Nurse Administrators to
Deal With or Manage Stress

There is a paucity of information in the professional literature addressing strategies used by nurse administrators in dealing with or managing occupational stress. According to Osipow and Davis (1988), if one is interested in predicting the impact of stress, the degree to which coping resources exist must be considered. Lazarus and Folkman (1984) pointed out that in being faced with a given situation or event, people appraise its significance to their well-being and the availability of coping resources. Coping is defined as "cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (p. 141).

Wolfgang (1991) addressed three coping strategies, active cognitive, active behavioral, and avoidance, previously used in a study by Billings and Moos (1981). The study compared the types of strategies used by nurses and pharmacists to manage or cope with occupational stress. He reported that the frequent use of active cognitive and active behavioral strategies were associated with greater job satisfaction, thus less stress. The greater use of

avoidance coping strategies was associated with higher levels of stress and lower job satisfaction.

Ganong (1982) reported that highly self-actualized nurse administrators do tolerate ambiguous situations and they perceive that the higher the stress the lower the job performance. Leininger (1977) discussed that one seldom finds any immediate or knowledgeable supportive person or group, nurses or non-nurses, to help female nurse administrators deal with or manage through power based situations. Ganong further commented that "the absence of support systems for nurse administrators leads to less change and a tendency for static nursing education and service programs" (p. 9).

Numerof et al. (1984, July/August) reported sources of stress, coping strategies, and outcomes among health care administrators including directors of nursing. The findings indicated that demographic, professional, and organizational variables as well as personality factors are associated with stress, coping, and outcomes. The top 10 identified coping strategies used by nurse administrators were: realizing that some conflict is inevitable; thinking about alternative ways of dealing with the situation; being sensitive to the staff's needs and feelings; being prepared with as many facts as possible; keeping communication channels open in the entire organization; telling staff members the nurse administrator's expectations; recognizing that others

have ideas that are also useful; making a plan for getting things done; prioritizing; and talking things over with people who are directly involved (p. 276).

Scalzi (1988) conducted a study to assess the coping strategies used by nurse executives to deal with or manage job stress. The 10 coping strategies identified by the 30 nurse administrators interviewed by the author and the percentage of response to each strategy are as follows:

1. Space Outside Work (90%)
Spends time on interest not related to work.
2. Uses Personal Support Network (87%)
3. Space at Work (63%)
Broadens scope of professional concerns, involved in groups at the local, state, and national levels.
4. Identifies Problem-Solving Resources (53%)
Uses consultants from the corporation or community to assist in planning for programmatic change.
5. Somatization (33%)
Experiences symptoms that might include headaches, low-back pain, cardiac arrhythmias, high blood pressure, and gastrointestinal symptoms.
6. Changes Activity (33%)
Physically leaves the situation to gain a new perspective.

7. Security Within Corporation (30%)
Depends upon multihospital system for noncompetitive sharing of resources.
8. Considers Resigning (30%)
9. Psychologically Drops Out (27%)
Avoids conflict by rigid adherence to rules or by becoming compliant.
10. Dysfunctional Competition (17%)
Expends a great deal of energy over issues or problems over which they have no real control. (p 36)

Chapter Summary

Literature concerning the concepts of stress, its development, and research related to responses to stress has been presented, and their relationship to stress have been identified. Occupational stress, evidence of its existence and prevalence among professional nurses and the nurse administrator in the general hospital setting have been addressed along with specific demographic variables. Occupational stress among staff nurses and head nurses in general hospital settings is well documented and substantiated. Information regarding occupational stress among nurse administrators and the strategies used to deal with or manage occupational stress is addressed.

CHAPTER 3

Methods and Procedures

Introduction

Chapter 3 contains a description of the research design, selection of the sample, the instrument, procedures followed in collecting the data, data analysis, and the summary.

Research Design

This study was descriptive in nature and used the questionnaire method of collecting data. According to Best and Kahn (1986), "Descriptive research describes "what is," describing, recording, analyzing, and interpreting conditions that exist. It involves some type of comparison or contrast and attempts to discover relationships between existing nonmanipulative variables" (pp. 24-25). Borg and Gall (1983) wrote that: "Descriptive studies are primarily concerned with finding out 'what is'" (p. 354).

Best and Kahn (1986) further commented that:

In carrying on a descriptive research project, in contrast to an experiment, the researcher does not manipulate the variable or arrange for events to happen. In fact, the events that are observed and described would have happened even though there had been no observations or analysis. (p. 80)

This study determined the level of occupational stress among nurse administrators in general hospitals and to identify strategies used to deal with or manage occupational stress. The study detected differences in the nurse administrators' perceptions of occupational stress and strategies used to deal with or manage stress. Selected demographic variables: age, sex, marital status, years of professional nursing experience, number of years as a top level nurse administrator, educational attainment level, and size (bed capacity) of the hospital were also included.

Selection of the Sample

Nurse administrators included in this study were limited to the 146 nurse administrators employed in all the general hospitals located throughout Tennessee. The geographical area encompasses the entire state of Tennessee. This region was selected to obtain input from nurse administrators of general hospitals within one state. Table 1 provides a breakout of the total number of general hospitals in Tennessee and the range in bed capacity used in this study.

Table 1

Bed Capacity of General Hospitals in Tennessee

Bed Capacity	Number in Tennessee	Percentage
99 or fewer	59	40
100 - 399	65	45
400 or more	22	15
TOTAL	146	100

There were a total of 146 general hospitals in the geographical area selected for this study. The population was determined by a Tennessee state map published by the American Hospital Association Guide to the Health Care Field (1991, C47, Appendix C). Three sources were used to obtain a listing of the 146 general hospitals and names of nurse administrators: (1) The AHA Guide to the Health Care Field (1991, pp. A380-A398); (2) The AHA Directory of Health Care Professionals (1991, pp. A1318-1354); and (3) The Official Southern Hospital Blue Book (1991, pp. 583-646).

According to the American Hospital Association Hospital Statistics (1990); although, the number of general hospitals with 99 beds or fewer has declined in the past decade, they still comprised 45% of the total 5,455 United States general hospitals in 1989. Moderate sized hospitals (those with 100

to 399 beds) comprised another 45% of all general hospitals, and general hospitals with more than 400 beds comprised 10% of the total (American Hospital Association Hospital Statistics, 1990). In this study of 146 general hospitals, 59 hospitals (40%) have 99 beds or fewer; 65 hospitals (45%) have between 100 to 399 beds; and 22 hospitals (15%) have more than 400 beds.

The data were classified according to the size of the hospital in order to examine differences in selected demographic variables, the nurse administrators' perceived occupational stress, and strategies used to deal with or manage occupational stress.

The Instrument

The instruments used to collect data for this study were: Part 1, a demographic questionnaire developed by the investigator; Part 2, the Health Professions Stress Inventory (HPSI) (Wolfgang, 1988a); and Part 3, strategies that may be used to deal with or cope with stress by Billings and Moos (1981). The instrument provided data to determine the relationship between selected demographic variables, perceived levels of occupational stress, and strategies used to deal with or manage occupational stress by nurse administrators in general hospitals throughout Tennessee.

The instrument used in this study consisted of three sections. Part I, a demographic and data questionnaire, was

devised to obtain the following information from the survey participants: Item 1, present position title; Item 2, facility classification; Item 3, bed capacity of institution; Item 4, marital status; Item 5, sex; Item 6, age; Item 7, number of years of professional nursing experiences; Item 8, total number of years in top level nurse administrator position; Item 9, highest level of education completed; Item 10, title of individual to whom the nurse administrator reports; Item 11, an inquiry regarding the availability of organizational stress management workshops; and Item 12 addressed the nurse administrator's sources of stress.

Part II of the questionnaire, the Health Professions Stress Inventory (HPSI), developed and validated by Wolfgang (1988a), consists of 30 job situations that health professionals might be expected to encounter in the performance of their duties. Respondents indicated how often they found each situation to be stressful in their work environment using a five-point Likert-type scale ranging from never to very often. Each item was scored from zero to four, thus the possible range of scores on the entire HPSI is zero to 120. Wolfgang's (1988b) study was an expansion of his earlier 1988a instrument validation. He collected data from 271 physicians, 356 nurses and 367 pharmacists. Data for each group for the 1988a and 1988b research are presented in Table 2.

Table 2*

Means and Standard Deviations of Scores on the Health Professions Stress Inventory by Profession

	Profession		
	Medicine	Nursing	Pharmacy
N	271	356	361
Mean Score	46.9	61.2	56.0
Standard Deviation	13.1	14.2	15.1
Actual Range	10-77	29-106	0-95

Note: Range of possible score was 0 to 120. There were 20 physicians, 23 nurses, and 26 pharmacists who did not complete the entire inventory.

*From "The Health Professions Stress Inventory" by A. P. Wolfgang, Psychological Reports, 1988a, 62, 220-222.

*From "Job Stress in the Health Professions: A Study of physicians, nurses, and pharmacists" by A. P. Wolfgang, 1988b, Behavioral Medicine, 14(1), 43-47.

Wolfgang's (1991) study compared stress levels between nurses and pharmacists. A total of 280 nurses and 279 pharmacists was surveyed and data revealed a mean of 59.48 with a standard deviation of 14.17 for the nurses and a mean of 54.77 with a standard deviation of 13.99 for the pharmacists.

Data analyses for the 1988a and 1988b study indicated that the inventory possessed internal consistency as measured by Cronbach's alpha reliability coefficient. Internal consistency coefficients were .89, .89 and .88 for pharmacists, nurses and physicians, respectively. Additional evidence indicated that the HPSI is both a valid and reliable measure of health professionals' job stress. The 30 items relating to job situations on the HPSI were derived from previous studies of stress in the health professions. This process maximized content validity and HPSI scores that have shown significant correlation with scores on an index of job-related tension. According to Wolfgang (1988a), the HPSI should be useful in assessing the relative stress perceived in health professions.

In Wolfgang's 1991 study, he reported the Cronbach's alpha coefficient .89 for nurses and .87 for pharmacists. Holm and Llwellyn (1986) pointed out that "an acceptable alpha for a new scale is 0.70 or above, and for a mature scale 0.80 or above. Reliability of a test is only very rarely lower than alpha" (p. 136).

Part III of the questionnaire included a list of 17 strategies that people may use when dealing with job-related stress. These strategies were adapted from previous work by Billings and Moos (1981), who classified the strategies according to the method of coping that they represent. Thus, each strategy could be designated as representing one of three methods of coping: (a) 1-6, active-cognitive, which involves managing one's appraisal of a situation's stressfulness (e.g., trying to see the positive side, considering several alternatives for handling problems); (b) 7-12, active-behavioral, which is characterized by overt attempts to deal directly with problems and their effects (e.g., taking some positive action, talking with a friend); or (c) 13-17, avoidance, which attempts to avoid active confrontation of problems or to indirectly reduce emotional tension (e.g., keeping your feelings to yourself, eating more).

Respondents were asked to examine recent situations on their jobs that had been especially stressful and to indicate how often they used each strategy to deal with stress, on a five-point Likert-type scale (from 0 = never to 4 = very often). Each item was scored from zero to four, the possible range of scores is zero to 24 for each subsection; items 1-6, active-cognitive; and items 7-12, active-behavioral. Items 13-17, avoidance, had a possible range of scores from zero to 20.

Wolfgang (1991) used these 17 strategies to survey nurses and pharmacists. For nurses, the Cronbach's alpha coefficients were .69 for the active-cognitive scale (six items), .50 for the active-behavioral scale (six items), and .40 for the avoidance scale (five items). For pharmacists, the alpha coefficients for the active-cognitive, active-behavioral, and avoidance scales were .67, .54 and .45, respectively. According to Wolfgang (1991), while these reliability coefficients may be lower than normally desired, Billings and Moos (1981) noted that this was not unexpected. Seventeen strategies were used in a study focusing on the role of coping and social support of family members among normal individuals compared with samples of family members of alcoholic patients. Cronbach's alpha was recorded at 0.72 for active-cognitive coping, 0.80 for active-behavioral coping and 0.44 for avoidance coping. Other findings disclosed that "since the use of one coping strategy could effectively reduce stress and thus decrease the need to use other strategies, this may in effect place an upper limit on the scales' internal consistency coefficients" (p. 145).

According to Billings and Moos (1981), the mean scores for coping strategies by gender were: Active Cognitive for males and females were 61.5 and 63.8, respectively; Active Behavioral, 58.1 for males and 63.7 for females; and Avoidance, 21.0 for males and 26.8 for females. Wolfgang

(1991) reported strategy mean scores for nurses and pharmacists: Active Cognitive Nurses (M=17.07, S. D.=3.03); Pharmacists (M=16.06, S. D. =3.11); Active Behavioral for Nurses (M=14.68, S. D.=3.16); pharmacists (M=13.57, S. D. 3.31); and Avoidance for nurses (M=7.19, S. D.=2.78); pharmacists (M=6.51, S. D.= 2.65).

Pilot Study

A pretest development sample study of the instrument was conducted in May 1991. Between May 17, 1991, and May 30, 1991, the questionnaire was completed by eight professional nurses, who were employed as Head Nurses in first line management positions at the Mountain Home, Tennessee VA Medical Center.

Each participant was contacted either by phone or in person to request their participation in the pilot study. After participants agreed to complete the instrument, the researcher forwarded the questionnaire with a cover letter stating information and specific directions about completing the questionnaire.

The validity and reliability of Parts II and III of the questionnaire had been established by Wolfgang, Billings and Moos. The pilot study sought specifically to determine the amount of time required to complete the questionnaire and whether or not any portion of the questionnaire was unclear or difficult to interpret.

In response to the question, "Was any portion of the questionnaire unclear or difficult to interpret?", one respondent reported, "Yes," and commented that she had to reread the directions for Part II several times and Parts I and II could be clearer if more differentiation were made between the two sections. The remaining seven respondents checked "No" to the above question with only one comment written by a master-degreed head nurse that the questionnaire seemed clear and concise. The time required to complete the questionnaire by eight head nurses ranged from 7 to 20 minutes with a mean of 10 minutes.

As a result of the pilot study, special attention was given to format for ease of readability and understanding. The directions were highlighted and separated from the actual questions by larger print.

Data Collection

Once approval for the study was given by the Institutional Review Board of East Tennessee State University, the names and address for the general hospitals and names of the nurse administrators in the study population were obtained from the AHA Directory of Health Care Professionals (1991). A total of 146 questionnaires was mailed on October 2, 1991. Included in each mailing were: (1) a cover letter (Appendix D) explaining the purpose of the study and soliciting cooperation and participation

from the respondent; (2) the survey instrument (Appendix E); (3) a self-addressed stamped postcard to be signed by the respondent and mailed separately from the questionnaire to the researcher; and (4) a self-addressed stamped envelope.

The cover letter explained to survey participants that individual names and names of hospitals were not to be placed on the survey instrument. Anonymity of each respondent was assured since the completed questionnaire did not require a signature and would be mailed separately from the postcard.

Three weeks after the initial contact with the individuals, a follow-up letter (Appendix F) was mailed to those nurse administrators who had not responded by returning the postcard to the researcher. Personal contact by telephone was used to help assure a high rate of return. When follow-up procedures were completed, responses were scored, demographic information was tabulated, and results were encoded for analysis using the Statistical Package SPSS/PC+ Microcomputer in the Department of Educational Leadership and Policy Analysis at East Tennessee State University.

Data Analysis

There are two basic approaches to statistical analysis: descriptive and inferential (Best & Kahn, 1986; Borg & Gall, 1983; Champion, 1981; Colton, 1974; Holm & Llwellyn, 1986; Huck, Cormier, & Bounds, 1974; Polit & Hungler, 1991). In

this study, research questions were analyzed by frequency distributions, factor analysis, Mann-Whitney U-Test, Kruskal-Wallis Analysis of Variance, and Spearman Rho Correlations.

Assumptions of descriptive analysis included the simple reporting of facts and collective occurrences based on a number of samples. With this type of analysis, generalizations are limited to the groups being studied and no inferences can be made to a larger population. Assumptions of inferential analysis include probability sampling (usually simple random sampling) and a specified population to which inferences may be made from data available with the random sample. According to Huck, Cormier, and Bounds (1974), both descriptive and inferential statistical techniques may be used in a descriptive study.

In this study, initial attempts were made to gather data from all subjects of a specified population; however, all of the individuals did not respond to the questionnaire. The nonresponse rate was approximately 13%. Since inferences were to be made to a larger population, inferential statistics were appropriate for data analysis.

Both descriptive and inferential statistics were used to analyze the data. Huck et al. (1974) pointed out, "Descriptive statistics are methods used to derive from these raw data certain indices that characterize or summarize the entire set of data. Thus, descriptive

statistics transform larger groups of numbers into more manageable forms" (p. 19). Huck et al. further commented that "inferential statistics allow the researcher to infer characteristics of a larger group from the characteristics of a smaller group" (p. 38).

One of the basic assumptions of factor analysis is that underlying dimensions, or factors, can be used to explain complex phenomena, and that such underlying factors, which are smaller in number than the number of observed variables, are responsible for the covariation among the observed variables. The responses to the items on the two instruments constituted observed variables. Factor analysis identifies those underlying, not directly observable, constructs.

Kim and Mueller (1978) described factor analysis as a "variety of statistical techniques whose common objective is to represent a set of variables in terms of a smaller number of hypothetical variables" (p. 9). Factor analysis can be used according to Kim and Mueller as an "expedient way of ascertaining the minimum number of hypothetical factors that can account for the observed covariation and as a means of exploring the data for possible data reduction" (p. 9). Rummel (1967) depicted factor analysis as "a means by which the regularity and order in phenomena can be discerned" (p. 445). "Factor analysis is scientific . . . the aim is to summarize the interrelationships among the variables in a

concise but accurate manner as an aid in conceptualization" (Gorsuch, 1983, p. 2).

DeVellis (1991) described factor analysis as: a useful analytic tool that can tell us, in a way that reliability coefficients cannot, about important properties of a scale. It can help us determine empirically how many constructs, or latent variables, or factors underlie a set of items. . . .factor analysis could help the investigator determine whether one broad or several more specific constructs were needed to characterize the item set. . . .to provide a means of explaining variation among relatively many original variables using relatively few newly created variables. (p. 92)

The SPSS/PC+ Advanced Statistics Guide outlines factor analysis as "a statistical technique used to identify a relatively small number of factors than can be used to represent relationships among sets of many interrelated variables" (Norusis, 1988, B-41). Steps used in performing factor analysis included the following:

- (1) Data collection and preparation of the correlation matrix for all variables;
- (2) Initial factor extraction or the number of factors necessary to represent the data and the method was determined;

- (3) Various rotations were conducted to make the factors more interpretable;
- (4) Factor scores were constructed for each nurse administrators. These scores were used for further analysis. (p. B-43)

In order to identify factors underlying the variability of items, the first step in factor analysis consists of developing a matrix of item correlations. From this matrix, several approaches are then available for extracting the underlying factors. The principal components method for initial extraction of factors was chosen for data analysis in the present study because each principal components factor maximizes the variance explained from the correlation matrix.

Research questions to be addressed were:

1. Does the Health Professions Stress Inventory (HPSI) instrument identify subscales that measure stress of nurse administrators?

This question was answered by addressing each item individually and identifying groups of subscales of stressors. Factor analysis was conducted on overall stress scores. Nontrivial stress factors were identified. Factor scores were calculated to be used to answer subsequent research questions.

Polit and Hungler (1991) pointed out that "factor analysis does not test hypotheses, nor does it deal with

variables that the researcher classifies as dependent and independent variables." They also commented "the major purpose of factor analysis is to reduce a larger set of variables into a smaller more manageable set of measures" (p. 473). Wolfgang's (1988b) study did not include a statistical factor analysis for the HPSI. He reported that individual mean scores for each of the 30 items revealed that 17 of the items had significantly higher mean scores with three broad job situations identified: work overload, conflict, and patient needs.

2. What occupational stress levels are reported by selected nurse administrators on total stress.

This question was answered by providing the mean and standard deviation for the total subjects from data collected by using the HPSI. The mean and standard deviation were calculated for nurse administrators employed in hospitals with: 99 beds or fewer; 100 to 399 beds; and 400 or more beds. Results were compared to levels reported in Wolfgang's (1988a, 1988b) study of Nurses, Physicians, and Pharmacists, and Wolfgang's (1991) study of nurses and pharmacists.

3. Are there differences in occupational stress levels (overall and subscales) of nurse administrators according to: age, sex, marital status, total number of years of professional nursing experience, number of years as a top level nurse administrator, educational attainment level, and

size (bed capacity) of hospital?

Statistical tests for hypotheses with two groups (example, sex, male vs. female) used the Mann-Whitney U Test, a nonparametric procedure for testing the differences between two independent samples. For the hypotheses of groups greater than two with unequal numbers and ordinal data, the Kruskal-Wallis Analysis of Variance Test was used.

4. What type of strategies are identified and are there differences in overall and subscale strategy scores by nurse administrators for dealing with or managing occupational stress according to age, sex, marital status, total number of years of professional nursing experience, number of years as a top-level administrator, educational attainment level, and size (bed capacity) of hospital?

Inferential statistical tests were conducted to compare groups on strategies used by nurse administrators to deal with or manage occupational stress. Statistical tests for hypotheses with two groups (example, sex, male vs. female) will use the Mann-Whitney U test, a nonparametric procedure for testing the differences between two independent samples. For the hypotheses of groups greater than two with unequal numbers and ordinal data, the Kruskal-Wallis Analysis of Variance statistical test was used.

5. Which type of strategy is related to a particular type of stress?

This question was answered by correlation analysis between occupational stress and types of strategies using the Spearman Rho Correlation Coefficient. This coefficient was computed when the variables being correlated have been measured on an ordinal scale. Correlation studies are done when the researcher cannot designate at least one variable as being independent, then correlation is the appropriate method for describing the relationship between two mutually dependent variables (Colton, 1974).

Summary

The research methodology and procedures were presented in this chapter. The instrument chosen for the study was a questionnaire comprised of three parts: demographic information, HPSI (Wolfgang, 1988a), and strategies used to deal with or manage occupational stress (Billings & Moos, 1981).

A population of nurse administrators in general hospitals was chosen from the geographical area in the state of Tennessee. The data were analyzed using descriptive and inferential statistical analysis. The results of the analyses are presented in Chapter 4.

CHAPTER 4

Presentation of Data

The problem of this study was an unclear understanding of occupational stress associated with the nurse administrators' position and strategies used to deal with or manage this stress. In Chapter 4, the data analysis of a state-wide survey of 126 nurse administrators, conducted during October and November of 1991, are reported.

Demographic Data

Out of the 146 nurse administrators contacted to participate in the study, 126 or 86.3%, responded by returning the completed questionnaire. The response rate, 86.3%, was a much higher figure than the 40% return figure reported by Numerof, et al. (1984, p. 272). One hundred twenty-six or 86.3% of returned questionnaires were usable in total or in part for data analysis. Six respondents failed to answer each item on Part I, the demographic section of the questionnaire, nine failed to answer all items on Part II, the Health Professions Stress Inventory, and two failed to answer all items on Part III, strategies. Incomplete questionnaires were excluded from totals for data analysis of those particular items.

Demographic and professional data obtained from items on the instrument included the following: (1) nurse administrators' position, (2) title, (3) facility classification, (4) total bed capacity, (5) marital status, (6) sex, (7) age, (8) years of professional nursing experience, (9) number of years in top level nurse administrator position, (10) highest level of education completed, (11) whether or not the organization provided stress management workshops, and (12) sources of stress experienced by nurse administrators.

The tabular data indicated that the majority, 76 or 60.3%, of the respondents reported a Director, Nursing Service title followed second by 16 or 12.7% as Vice-President for Nursing. Data are presented in Table 3.

The facility classification response revealed 123 cases were valid with 3 cases missing. Investor owned-for-profit hospitals accounted for 40 or 32.5% of the sample, followed second by government non-federal 34 or 27.6%. Twenty-one or 17.1% church-affiliated hospitals were reported, 5 or 4.1% were classified as Federal government hospitals, while 23 or 18.7% were classified as "other." These data are displayed in Table 4.

Table 5 presents the frequency distribution and percentage for bed (size) capacity reported by respondents using three ranges: 99 beds or fewer, 100 to 399 beds, and 400 beds or more. The population consisted of a total of

146 general hospitals as revealed in Table 1 (p. 54) that included: 59 or 40% with 99 or fewer beds, 65 or 45% with 100 to 399 beds, and 22 or 15% with 400 or more beds. The most frequent responses, 59 or 46.8%, were from nurse administrators employed in hospitals with 99 or fewer beds.

Table 3

Position Title of Nurse Administrators

Title	f	%
Director of nursing service	76	60.3
Vice-President for nursing service	16	12.7
Assoc. hospital director for nursing	2	1.6
Assistant administrator for nursing	7	5.6
Other	25	19.8
Total	126	100.0

Items 4, 5, and 6 on the data sheet identified the marital status, gender, and age of respondents. The majority of respondents, 95 or 75.4%, were married and 20 or 15.9% reported being divorced. Of those responding to the gender question, 90.5% or 114 were female and 11 or 8.7% males. Twenty-eight or 22.2% of respondents were between the ages of 41 and 45 years followed closely by 27 or 21.4% between the ages of 51 and 55 years. Sixty-three or 50%

Table 4

Facility Classifications Reported by Respondents

Classification	f	%
Investor owned-for-profit	40	32.5
Individual (9)		
Partnership (31)		
Government non-federal	34	27.6
Church affiliated not-for-profit	21	17.1
Federal government	5	4.1
Veterans Affairs (4)		
Navy (1)		
Other	23	18.7
Total	123	100.0

Table 5

Number and Percentages of Respondents as Related to Hospital Bed Capacity

Bed Capacity	f	%
99 or fewer	59	46.8
100 to 399	51	40.5
400 or more	16	12.7
Total	126	100.0

Table 6

Frequency Distributions and Percentages Reported by
Respondents for Marital Status, Gender, and Age

	Category				
	Marital Status			Sex	
	f	%		f	%
Single	9	7.1	Female	114	90.5
Married	95	75.4	Male	11	8.7
Divorced	20	15.9	Missing	1	.8
Other	2	1.6			
Total	126	100.0		126	100.0
	Age				
	f	%			
26-30	4	3.2			
31-35	12	9.5			
36-40	19	15.1			
41-45	28	22.2			
46-50	25	19.8			
51-55	27	21.4			
56-60	9	7.1			
Over 60	2	1.6			
Total	126	100.0			

were 45 years of age or less while the remaining respondents, 63 or 50%, were 46 years or older. Data depicting the distributions for marital status, gender, and age are presented in Table 6.

Item 7 on the data sheet identified years of nursing experience. The majority, 48 or 38.4%, fell within 16 to 25 years of professional experience with 24 or 19.2% in the 16-20 bracket and 24 or 19.2% with 21-25 years of experience. Twenty two or 17.5% reported 26-30 years while 54 or 43.2% reported 20 years or less experience and 71 or 56.8% reported 21 years or more. Data are presented in Table 7.

Table 7

Years of Professional Nursing Experience

Years of Professional Nursing Experience	f	%
6-10	11	8.8
11-15	19	15.2
16-20	24	19.2
21-25	24	19.2
26-30	22	17.6
31-35	15	12.0
More than 35	10	8.0
Total	125	100.0

Item 8 identified the respondent's number of years of experience in a top level nurse administrator. The most frequent number of responses, 24 or 19% were in the 10-12 year category. Twenty-two or 17.5% of the respondents had 2-3 years experience and 22 or 17.5% had 4-5 years experience. Eighteen respondents or 14.2% reported having 6-7 years of experience. One hundred and four or 82.5% respondents reported having 12 years or less while 22 or 17.5% reported having 13 to 30 years experience. Data are presented in Table 8.

Table 8

Number of Years as Top Level Nurse Administrator

Years as Top Level Nurse Administrator	f	%
Less than 1 year	13	10.3
2-3	22	17.5
4-5	22	17.5
6-7	18	14.2
8-9	5	4.0
10-12	24	19.0
13-15	9	7.1
16-20	6	4.8
21-25	6	4.8
26-30	1	.8
Total	126	100.0

Item 9 on the data sheet identified the highest level of education achieved by nurse administrators. Twenty-eight or 22.% of the respondents held a master's degree in nursing. Twenty-five or 19.8% held a baccalaureate in nursing or nursing education degree. Twenty-two or 17.5% held an associate degree in nursing. Forty or 34.7% held either a nursing or non-nursing master's degree. Three or 2.4% held a doctorate degree in non-nursing. The majority of respondents, 83 or 65.9% held less than a master's degree. Data are displayed in Table 9.

Table 9

Highest Level of Education Obtained by Nurse Administrators

Education Level	f	%
Diploma in nursing	25	19.8
Associate degree in nursing	22	17.5
B.S. nursing or nursing education	25	19.8
R.N with non-nursing B.S. degree	11	8.7
Master's in nursing degree	28	22.2
R.N. non-nursing master's degree	12	9.5
Doctorate in non-nursing degree	3	2.4
Total	126	100.0

Item 10 identified to whom nurse administrators reported in the organizational chain of command. One hundred thirteen or 89.7% of the respondents reported directly to the chief executive officer (CEO), 9 or 7.1% reported directly to someone other than the CEO or a physician, with 4 or 3.2% reporting to a physician chief of staff. Data are presented in Table 10.

Table 10

Individual to Whom the Nurse Administrator Reports

Title	f	%
Chief executive officer	113	89.7
Chief of staff physician (COS)	4	3.2
Other	9	7.1
Total	126	100.0

Item 11 identified whether or not their organization provided stress management workshops. One hundred nine or 86.5% reported that stress management workshops were not provided by their organizations. Seventeen or 13.5% revealed that stress management workshops were provided. Data are depicted in Table 11.

Table 11

Stress Management Workshops Provided by Organization for
Nurse Administrators

Response	f	%
Yes	17	13.5
No	109	86.5
Total	126	100.0

Sources of stress were identified by the respondents. The majority, 78 or 62.4%, reported their sources of stress came mostly from work. Forty-three or 34.4% reported both work and non-work as major sources of stress while 4 or 3.2% of the respondents felt the most significant source of stress came outside the work environment. Data are presented in Table 12.

Table 12

Sources of Stress Reported by Nurse Administrators

Sources of Stress	f	%
Mostly from work	78	62.4
Outside work	4	3.2
Work and non-work	43	34.4
Total	125	100.0

Research Questions

This study was concerned with six research questions formulated to address the problem statement and the purpose of the study. The research questions were:

Research Question 1: Does the HPSI instrument identify subscales that measure stress of nurse administrators?

This question was answered by analyzing the Health Professions Stress Inventory (HPSI) using principal components factor analysis to identify subscales of stressors. Data from the study were initially subjected to principal components factor analysis in order to identify the number factors that could be derived from the data. This analysis included four steps: (a) condensation of factors through principal components analysis to provide a starting point for rotation; (b) rotation of factors to achieve a more interpretable factor solution; (c) labeling of factors; and (d) computing factor scores. Negatively worded items on the scale were reversed scored to facilitate the correct interpretation of factors.

The principal components method for initial extraction of factor analysis was used. The factors were rotated using the varimax rotation with rotation converging in 8 iterations. Only factors with eigenvalues of 1 or higher were initially considered as possible factors. Four criteria guided the selection of the factor solutions. The solution (a) would account for as much of the total variance

as possible, (b) factor loadings of .40 or higher were considered, (c) resulting factors were interpretable, and (d) factors would share communality. Using these criteria and a scree plot of explained variation (eigenvalues), a five-factor solution was selected as the optimal factor structure. This five-factor solution explained 51% of the variance. All five factors were considered interpretable. Table 13 contains the eigenvalues and percentages of explained variances for the five factor solution of the Health Professions Stress Inventory, 30-item instrument.

Table 13

Eigenevalues and Percentage of Explained Variance for Five Factor Solution of Health Professions Stress Inventory

Factor	Eigenvalue	% of Variance	Cumulative % of Variance
1	7.428	24.8	24.8
2	2.840	9.5	34.2
3	1.974	6.6	40.8
4	1.653	5.5	46.3
5	1.395	4.6	51.0

Factor 1 contained 8 items, Factor 2 contained 7, Factor 3 contained 8, Factor 4 contained 4, and Factor 5

contained 3 items that loaded at a level of .40 or higher. Table 14 depicts the pattern matrix for the five-factor solution using Principal Components Factor Analysis and varimax rotation (not correlated). The left-hand column contains the item numbers from the HPSI instrument. Items 2, 9, 25, 23, 7, 19, 8, and 22 loaded on Factor 1 while Items 13, 26, 20, 29, 4, 27, and 17 loaded on Factor 2. Items 24, 1, 14, 10, 3, 15, 21, and 12 loaded on Factor 3. Factor 4 contained items 6, 5, 16, and 11 while Factor 5 contained items 18, 28, and 30.

Table 14

Factor Analysis for Health Professions Stress Inventory-
Five-Factor Pattern Matrix with Varimax Rotation

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
2	.74866	.12534	.18076	-.05847	-.03940
9	.73317	.03879	.16575	-.08087	-.08206
25	.64696	.49014	.01400	.05692	-.01471
23	.58313	.55288	.04837	.13400	.03963
7	.53765	.14301	.00684	.22975	.03888
19	.52407	.21966	.00158	.18068	.33061
8	.44952	.25167	.36029	.19282	.05298
22	.43532	.15115	.17230	.17529	-.02923

(Table continues)

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
13	.30916	.76763	.07179	.06686	.03211
26	.01289	.73365	-.03310	.05079	.17586
20	.47609	.62704	.01048	-.04798	.08770
29	.28704	.61315	.30663	-.02279	.27286
4	-.01670	.54879	.28127	.23696	-.13609
27	.16684	.52850	.27953	.07982	-.11295
17	.27105	.47336	.19450	.18222	-.26547
24	.13175	.09475	.67377	-.05201	.08020
1	.17173	.15380	.64613	-.06013	-.04690
14	-.10859	.23330	.61557	.25709	-.04907
10	.23601	.03069	.61148	.17104	.00095
3	-.04599	.13659	.56499	.09207	.30581
15	.13296	.09105	.50483	.41114	.12730
21	.37645	-.06104	.47050	.23868	.14305
12	-.02198	.10970	.44809	.36585	-.28751
6	-.08695	.17055	.09792	.71548	.17896
5	.19263	.14714	.08486	.68693	-.03396
16	.15267	.02444	.16281	.65942	.10797
11	.17829	-.05371	.00339	.53282	.38800

(Table continues)

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
18	-.07670	.09815	.07039	.12994	.74432
28	-.00467	.01232	.07875	.41477	.65133
30	.18265	-.07626	.41246	-.06462	.42331

Five factors were identified and labeled from the 30-item Health Professions Stress Inventory. Table 15 provides a listing of the factor labels. Tables 16-20 provide breakouts of the individual item loadings for Stress Factors 1-5.

Table 15

Stress Factor Labels for Health Professions Stress Inventory

Factor Number	Factor Label
1	Professional Conflicts
2	Lack of Recognition as a Professional
3	Work Overload
4	Meeting Personal/Professional Needs of Patients
5	Lack of Professional Confidence Relative to Patient Care

Factor 1 contained 8 items loading at least .40 or higher and accounted for 24.8% of the variance. Table 16

presents the items and the loadings. Items 2, 9, 25, 23, 7, 19, 8, and 22 loaded on Factor 1, Professional Conflicts.

Table 16

Characteristics of Stress Factor 1-Professional Conflicts

Item Number	Loading
2. Experiencing conflicts with supervisors and/or administrators	.75
9. Experiencing conflicts with co-worker	.73
25. <u>Not</u> being allowed to participate in making decisions about your job	.65
23. <u>Not</u> knowing exactly what type of job performance is expected	.56
7. Disagreeing with other health professionals concerning the treatment of a patient	.54
19. Possessing inadequate information regarding a patient's medical condition	.52
8. <u>Not</u> having opportunities to share feelings and experiences with colleagues	.45
22. Having non-health professionals determine the way you must practice your profession	.44

Factor 2 contained 7 items loading at least .40 or higher and accounted for 9.5% of the variance. Items 13, 26, 20, 29, 4, 27, and 17 loaded on Factor 2. Table 17 presents the items and loadings for Factor 2, Lack of Recognition as a Professional.

Table 17

Characteristics of Stress Factor 2-Lack of Recognition as
a Professional

Item Number	Loading
13. Feeling that opportunities for advancement on the job are poor	.77
26. <u>Not</u> being challenged by your work	.73
20. <u>Not</u> receiving adequate feedback on your job performance	.63
29. <u>Not</u> being able to use your abilities to the fullest extent on the job	.61
4. <u>Not</u> receiving the respect or recognition that you deserve from the general public	.55
27. Feeling that you are inadequately paid as a health professional	.53
17. <u>Not</u> being recognized or accepted as a true health professional by other health professionals	.47

Factor 3 contained 8 items loading at least .40 or higher and accounted for 6.6% of the variance. Items 24, 1, 14, 10, 3, 15, 21, and 12 loaded on Factor 3. Table 18 displays the loadings for Factor 3, Work Overload.

Factor 4 contained 4 items loading at least .40 or higher and accounted for 5.5% of the variance with items 6, 5, 16 and 11 loading on this factor. Data are displayed in Table 19 for Factor 4, Meeting Personal/Emotional Needs of the Patient.

Table 18

Characteristics of Stress Factor 3-Work Overload

Item Number	Loading
24. Being interrupted by phone calls or people while performing job duties	.67
1. Having so much work to do that everything <u>cannot</u> be done well	.65
14. Trying to meet society's expectations for high-quality medical care	.62
10. Having job duties which conflict with family responsibilities	.61
3. Feeling ultimately responsible for patient outcomes	.56
15. Supervising the performance of co-workers	.50
21. <u>Not</u> having enough staff to adequately provide necessary services	.47
12. Keeping up with new developments in order to maintain professional competence	.45

Factor 5 contained 3 items loading at least .40 or higher and accounted for 4.6% of the variance. Items 18, 28, and 30 loaded on Factor 5. Table 20 represents the items and the loadings. Factor 5 was labeled Lack of Professional Confidence Relative to Patient Care.

Table 21 provides a summary of the 30-item Health Professions Stress Inventory according to factor labeling and loading for each item.

Table 19

Characteristics of Stress Factor 4-Meeting Personal and Emotional Needs of Patients

Item Number	Loading
6. Caring for the emotional needs of patients	.72
5. Being uncertain about what to tell a patient or family about the patient's condition and/or treatment	.69
16. Dealing with "difficult" patients	.66
11. Allowing personal feelings/emotions to interfere with the care of patient	.53

Table 20

Characteristics of Stress Factor 5-Lack of Professional Confidence Relative to Patient Care

Item Number	Loading
18. Feeling inadequately prepared to meet the needs of patients	.74
28. Caring for terminally ill patients	.65
30. Fearing that a mistake will be made in the treatment of a patient	.42

Table 21

Summary of Health Professions Stress Inventory Factor Loadings

Item	Factor				
	1	2	3	4	5
1. Having so much work to do that everything cannot be done well..			.65		
2. Experiencing conflicts with supervisors/administrators.....	.75				
3. Feeling ultimately responsible for patient outcomes.....			.56		
4. <u>Not</u> receiving the respect or recognition that you deserve from the general public.....		.55			
5. Being uncertain about what to tell a patient or family about the patient's condition.....				.69	
6. Caring for the emotional needs of patients.....				.72	
7. Disagreeing with other health professionals concerning the treatment of a patient.....	.54				
8. <u>Not</u> having opportunities to share feelings and experiences with colleagues.....	.45				
9. Experiencing conflicts with co-workers.....	.73				
10. Having job duties which conflict with family responsibilities.....			.61		

(Table continues)

Item	Factor				
	1	2	3	4	5
11. Allowing personal feelings or emotions to interfere with the care of patients.....				.53	
12. Keeping up with new developments in order to maintain professional competence.....			.45		
13. Feeling that opportunities for advancement on the job are poor.....		.77			
14. Trying to meet society's expectations for high-quality medical care.....			.62		
15. Supervising the performance of co-workers.....			.50		
16. Dealing with "difficult" patients.....				.66	
17. <u>Not</u> being recognized or accepted as a true health professional by other health professionals.....		.47			
18. Feeling inadequately prepared to meet the needs of patients..					.74
19. Possessing inadequate information regarding a patient's medical condition....	.52				
20. <u>Not</u> receiving adequate feedback on your job performance.....		.63			
21. <u>Not</u> having enough staff to adequately provide necessary services.....			.47		

(Table continues)

Item	Factor				
	1	2	3	4	5
22. Having non-health professionals determine the way you must practice your profession.....	.44				
23. <u>Not</u> knowing exactly what type of job performance is expected.....	.58				
24. Being interrupted by phone calls or people while performing job duties.....			.67		
25. <u>Not</u> being allowed to participate in making decisions about your job.....	.65				
26. <u>Not</u> being challenged by your work.....		.73			
27. Feeling that you are inadequately paid as a health professional.....		.53			
28. Caring for terminally ill patients.....					.65
29. <u>Not</u> being able to use your abilities to the fullest extent on the job...		.61			
30. Fearing that a mistake will be made in the treatment of a patient.....					.42

Note.

Factor 1: Professional Conflicts

Factor 2: Lack of Recognition as a Professional

Factor 3: Work Overload

Factor 4: Meeting Personal/Emotional Needs of Patients

Factor 5: Lack of Professional Confidence in Patient Care

Research Question 2: What occupational stress levels are reported by selected nurse administrators on total stress?

Data analysis revealed a total stress level mean score of 51.29 with a standard deviation of 13.36 on the Health Professions Stress Inventory for nurse administrators in the study. Wolfgang (1988a, 1988b) reported the total stress level mean scores on the HPSI for nurses (Mean=61.2, S. D.=14.2), pharmacists (Mean=56.0, S. D.=15.1) and physicians (Mean=46.9, S. D.=13.1). Wolfgang's (1991) study revealed a total stress level mean score and standard deviation for nurses (Mean=59.5, S. D.=14.7); for pharmacists (Mean=54.8, S. D.=14.0).

The total stress level mean score was lower for nurse administrators in this study. The total stress level mean score (Mean=53.30) and standard deviation (12.88) for nurse administrators in hospitals with 99 beds or less was higher than nurse administrators in hospitals with 100 to 399 beds (Mean=48.98, S. D.=12.42), and in hospitals with 400 or more beds (Mean=44.33, S. D.=14.07).

Table 22 depicts a comparison of Wolfgang's (1988a, 1988b, 1991) stress level mean and standard deviation scores with the total stress level mean and standard deviation scores of nurse administrators in this study. Table 23 represents the total stress level mean and standard deviation scores for nurse administrators based on hospital bed capacity.

Table 22

Comparison of Total Stress Level Mean and Standard Deviation Scores of Nurse Administrators by Wolfgang's HPSI.

Wolfgang (1988a, 1988b)			
	N	Mean	S. D.
Nurses	356	61.2	14.2
Pharmacists	361	56.0	15.1
Physicians	271	46.9	13.1
Wolfgang (1991)			
Nurses	280	59.5	14.7
Pharmacists	279	54.8	14.0
Davis (1992)			
Nurse Administrators	115	51.29	13.3

Table 23

Total Stress Level Mean and Standard Deviation Scores for Nurse Administrators by Hospital Bed Capacity

Bed Capacity	N	Mean	S. D.
99 beds or less	53	55.30	13.36
100 to 399 beds	47	48.98	12.42
400 beds or more	15	44.33	14.07

Research Question 3: Are there differences in occupational stress levels (overall and subscales) of nurse administrators according to: age, sex, marital status, total number of years of professional nursing experience, number of years as a top-level nurse administrator, educational attainment level, and size (bed capacity) of hospitals?

The Mann-Whitney U Test was used to test for significant differences in overall stress levels of nurse administrators for null hypothesis 1 through 6. The alpha level for each two-tailed test was set at .05. The Kruskal-Wallis one-way ANOVA test was used to test for differences between stress levels of nurse administrators based on three categories of bed capacity for hypothesis No. 7. Comparisons were also made on each subscale based on factor analysis scores from the factor analysis.

Null hypothesis 1 stated there will be no significant difference between stress level scores of nurse administrators 45 years of age or less and nurse administrators 46 years of age or older.

Data analysis revealed a mean score of 53.80 for nurse administrators 45 years of age or less, standard deviation of 13.61 and a mean rank of 63.47. The mean of nurse administrators 46 years of age or older was 48.56, standard deviation of 12.63, and a mean rank of 52.03. The Mann-Whitney Test yielded a z score of -1.84 with a two-tailed

probability of .07. Analysis did not reveal a statistically significant difference in overall stress levels of nurse administrators based on age; therefore, the null hypothesis was retained.

Comparisons were made between the subscale scores derived from factor analysis for nurse administrators based on age. None of the p values were less than .05. Data for overall and subscale stress scores are displayed in Table 24.

Null hypothesis 2 stated there will be no significant difference in stress levels between male and female nurse administrators.

The overall mean score for males was 51.70 with a standard deviation of 12.47 and a mean rank of 58.30. The overall mean score for females was 51.10 with a standard deviation of 13.47 and a mean rank of 57.42. The Mann-Whitney U Test yielded a z score of $-.08$ with a two-tailed probability of .94. The difference was not significant at the .05 level for stress levels based on gender and the null hypothesis was retained. Comparisons were made between the subscale scores derived from factor analysis based on gender. None of the p values were less than .05. Data are presented in Table 25 for overall and subscale stress scores.

Table 24

Mann-Whitney U Test of Overall and Subscale Stress Levels of
Nurse Administrators by Age

Age	N	Mean	S. D.	Mean Rank	z	Two-Tailed p
45 or <	60	53.80	13.61	63.47	-1.84	.07
46 or >	55	48.54	12.63	52.03		
<u>Subscales</u>						
<u>Factor 1 - Professional Conflicts</u>						
45 or <	60	.06	1.03	59.15	-.39	.70
46 or >	55	.06	.97	56.75		
<u>Factor 2- Lack of Recognition as a Professional</u>						
45 or <	60	-.21	1.13	63.75	-1.93	.05
46 or >	55	.23	.77	51.73		
<u>Factor 3- Work Overload</u>						
45 or <	60	.08	.96	60.10	-.71	.48
46 or >	55	-.09	1.04	55.71		
<u>Factor 4-Meeting Personal/Emotional Needs of Patients</u>						
45 or <	60	-.01	1.02	57.62	-.13	.90
46 or >	55	.01	.98	58.42		
<u>Factor 5- Lack of Professional Confidence in Patient Care</u>						
45 or <	60	-.01	1.06	57.32	-.23	.82
46 or >	55	.01	.94	58.75		

* < .05

Table 25

Mann-Whitney U Test of Differences in Overall and Subscale
Stress Level Scores Level by Gender

Gender	N	Mean	S. D.	Mean Rank	z	Two-Tailed p
Males	10	51.70	12.47	58.30	-.08	.94
Females	104	51.10	13.47	57.42		
<u>Subscales</u>						
<u>Factor 1 - Professional Conflicts</u>						
Males	10	.41	1.00	71.30	-1.38	.17
Females	140	-.04	.99	56.17		
<u>Factor 2- Lack of Recognition as a Professional</u>						
Males	10	-.27	.91	48.20	-.93	.35
Females	104	.03	1.01	58.39		
<u>Factor 3- Work Overload</u>						
Males	10	.08	.68	60.80	-.33	.74
Females	104	-.02	1.02	57.18		
<u>Factor 4-Meeting Personal/Emotional Needs of Patients</u>						
Males	10	-.04	.79	57.60	-.01	.99
Females	104	.01	1.02	57.49		
<u>Factor 5- Lack of Professional Confidence in Patient Care</u>						
Males	10	-.31	.48	43.50	-1.40	.16
Females	104	.01	1.00	58.85		

*p < .05

Null hypothesis 3 stated there will be no significant difference in reported stress levels between unmarried and married nurse administrators. Overall stress level mean scores for unmarried nurse administrators which included single, divorced, or widowed was 47.77 with a standard deviation of 13.09 and a mean rank of 48.78. The mean for married administrators was 52.53 with a standard deviation of 13.30 and a mean rank of 61.25. The Mann-Whitney U Test yielded a z score of -1.76 with a two-tailed probability of .08. The difference was not significant for overall stress level scores at the .05 based on marital status; therefore, the null hypothesis was retained.

Comparisons were made between the subscale scores derived from factor analysis. A significant difference was noted on Factor 3, Work Overload, with a p value of .01. Analysis revealed that married nurse administrators had a significantly higher level of stress than unmarried nurse administrators. Table 26 represents data for overall and subscale scores.

Null hypothesis 4 stated there will be no significant difference between stress level scores of nurse administrators with 20 years or fewer of professional nursing experience and nurse administrators with 21 years or more of professional nursing experience.

The mean score for nurse administrator with 20 years or fewer years of nursing experience was 53.24 with a standard

Table 26

Mann-Whitney U Test of Differences in Overall and Subscale
Stress Level Scores by Marital Status

Overall	N	Mean	SD	Mean Rank	z	Two-tailed p
Unmarried	30	47.77	13.09	48.78	-1.76	.08
Married	85	52.53	13.30	61.25		
<u>Subscales</u>						
<u>Factor 1 - Professional Conflicts</u>						
Unmarried	30	.05	.98	59.27	-.24	.81
Married	85	-.02	1.01	57.55		
<u>Factor 2- Lack of Recognition as a Professional</u>						
Unmarried	30	-.14	.81	54.63	-.64	.52
Married	85	.05	1.06	59.19		
<u>Factor 3- Work Overload</u>						
Unmarried	30	-.39	1.02	43.73	-2.73	.01*
Married	85	.14	.96	63.04		
<u>Factor 4-Meeting Personal/Emotional Needs of Patients</u>						
Unmarried	30	-.08	.74	55.80	-.42	.67
Married	85	.03	1.08	58.78		
<u>Factor 5- Lack of Professional Confidence in Patient Care</u>						
Unmarried	30	.13	.96	63.13	-.98	.33
Married	85	-.05	1.02	56.19		

*p < .05

deviation of 13.46 and a mean rank of 61.89. The mean score for nurse administrators with 21 years or more of experience was 49.86 with a standard deviation of 13.24 and a mean rank of 53.94. The Mann-Whitney U Test yielded a z score of -1.28 with a two-tailed probability of .20 for overall stress levels. Analysis of data indicated no significant difference at the .05 level for stress levels based on the number of years of professional nursing experience. Therefore, the null hypothesis was retained for overall stress levels.

Comparisons were made between the subscale scores derived from Factor Analysis based upon the nurse administrator's years of professional nursing experience. None of the p values were less than .05. Data for overall and subscale stress scores are presented in Table 27.

Null hypothesis 5 stated there will be no significant difference in stress levels of nurse administrators who have been in a top-level nurse administrator position for 12 years or less and their colleagues who have been in a top-level nurse administrator position for 13 years or more.

The mean score for nurse administrators with 12 years or less was 52.51 with a standard deviation of 13.21 and a mean rank of 60.97. The mean score for nurse administrators with 13 or more years was 45.81 with a standard deviation of 12.91 and a mean rank of 44.69. The Mann-Whitney U Test yielded a z score of -2.02 with a two-tailed probability of

Table 27

Mann-Whitney U Test of Differences in Overall and Subscale
Stress Level Scores by Number of Years of Professional
Nursing Experience

Years of Nursing Experience	N	S. D.	Mean	Mean Rank	z	Two-tailed p
20 yrs or <	51	53.24	13.46	61.89	-1.28	.20
21 yrs or >	63	49.86	13.24	53.94		
<u>Subscales</u>						
<u>Factor 1 - Professional Conflicts</u>						
20 yrs or <	51	.09	1.09	59.96	-.72	.47
21 yrs or >	63	-.10	.91	55.51		
<u>Factor 2- Lack of Recognition as a Professional</u>						
20 yrs or <	51	.16	1.06	61.43	-1.14	.25
21 yrs or >	63	-.10	.93	54.32		
<u>Factor 3- Work Overload</u>						
20 yrs or <	51	.05	.88	59.75	-.65	.51
21 yrs or >	63	-.05	1.10	55.68		
<u>Factor 4-Meeting Personal/Emotional Needs of Patients</u>						
20 yrs or <	51	-.01	1.14	54.82	-.77	.44
21 yrs or >	63	.03	.86	59.67		
<u>Factor 5- Lack of Professional Confidence in Patient Care</u>						
20 yrs or <	51	-.08	.97	53.59	-1.14	.25
21 yrs or >	63	.10	.99	60.67		

p <.05.

.04 for the overall stress level. Data analysis revealed a statistically significant difference at the .05 level. Nurse administrators with 13 years or more in a top-level nurse administrator position reported less stress than nurse administrators with 12 years or less experience as a top-level nurse administrator. The null hypothesis was rejected.

Comparisons were made between the subscale scores derived from factor analysis based upon the number of years in a top-level nurse administrator position. A significant difference was noted on Factor 3, Work Overload, with a p value of .04. Analysis revealed that nurse administrators in a top-level position with 12 years or less experienced a higher level of stress. Data for overall and subscale scores are presented in Table 28.

Null hypothesis 6 stated there will be no significant difference in stress levels between nurse administrators with an educational attainment level of less than a master's degree and nurse administrators with an educational attainment of a master's degree or higher.

The mean score for nurse administrators with less than a master's degree was 53.01 with a standard deviation of 11.98 and a mean rank of 64.16. Nurse administrators with master's degree or higher was 48.17 with a standard deviation of 15.20 and a mean rank of 46.88. The Mann-Whitney U Test yielded a z score of -2.66 with a two-tailed

Table 28

Mann-Whitney U Test for Differences in Overall and Subscale
Stress Levels of Nurse Administrators by Number of Years in
a Top-Level Nurse Administrator Position

Years of Top-Level Experience	N	Mean	S. D.	Mean Rank	z	Two-Tailed p
12 yrs or <	94	52.51	13.21	60.97	-2.02	.04*
13 yrs or >	21	45.81	12.91	44.69		
<u>Subscales</u>						
<u>Factor 1 - Professional Conflicts</u>						
12 yrs or <	94	.04	.96	59.83	-1.24	.21
13 yrs or >	21	-.16	1.15	49.81		
<u>Factor 2- Lack of Recognition as a Professional</u>						
12 yrs or <	94	.02	1.03	58.09	-.06	.95
13 yrs or >	21	-.11	.84	57.62		
<u>Factor 3- Work Overload</u>						
12 yrs or <	94	.09	.98	60.99	-2.03	.04*
13 yrs or >	21	-.41	1.00	44.62		
<u>Factor 4-Meeting Personal/Emotional Needs of Patients</u>						
12 yrs or <	94	.04	.99	58.62	-.42	.67
13 yrs or >	21	-.20	1.05	55.24		
<u>Factor 5- Lack of Professional Confidence in Patient Care</u>						
12 yrs or <	94	-.02	.97	56.40	-1.08	.28
13 yrs or >	21	.09	1.14	65.14		

* p < .05.

probability of .01 for overall stress level scores. The difference was significant at the .05 level; therefore, the null hypothesis was rejected for overall stress level scores. Nurse administrators prepared at the master's level or higher reported less stress than did nurse administrators with less than a master's degree.

Comparisons were made between the subscales scores derived from factor analysis based upon educational attainment of nurse administrators. A significant difference was noted for Factor 3, Work Overload, with a p value of .04 and Factor 4, Meeting Personal/Emotional Needs of a Patient with a p value of <.01. Analysis revealed a significant difference on Factor 5, Lack of Professional Confidence in Patient Care, with a p value of <.01. Nurse administrators with an educational preparation of less than a master's degree experienced a significantly higher level of stress for Factors 3, 4, and Factor 5. Overall and subscale scores are presented in Table 29.

The Kruskal-Wallis one-way ANOVA test was used to test for differences between stress levels of nurse administrators based on three categories of bed capacity for hypothesis No. 7.

Null hypothesis 7 stated there will be no significant difference between stress levels of nurse administrators employed in hospitals with 99 beds or less, 100 to 399 beds, and 400 beds or more.

Table 29

Mann-Whitney U Test of Differences in Overall and Subscale
Stress Levels of Nurse Administrators by Educational
Attainment

Education	N	Mean	S. D.	Mean Rank	z	Two-tailed p
< Master's	74	53.01	11.98	64.16	-2.66	.01*
Master's or >	41	48.17	15.20	46.88		
<u>Subscales</u>						
<u>Factor 1 - Professional Conflicts</u>						
< Master's	74	-.04	.93	56.59	-.61	.54
Master's or >	41	.07	1.13	60.54		
<u>Factor 2- Lack of Recognition as a Professional</u>						
< Master's	74	-.08	.88	56.34	-.72	.47
Master's or >	41	.14	1.18	61.00		
<u>Factor 3- Work Overload</u>						
< Master's	74	.12	.86	62.66	-2.01	.04*
Master's or >	41	-.21	1.19	49.59		
<u>Factor 4-Meeting Personal/Emotional Needs of Patients</u>						
< Master's	74	.26	.95	66.80	-3.80	<.01*
Master's or >	41	-.48	.92	42.12		
<u>Factor 5- Lack of Professional Confidence in Patient Care</u>						
< Master's	74	.18	.98	64.85	-2.96	<.01*
Master's or >	41	-.32	.97	45.63		

* p <.05.

The mean stress level score for nurse administrators employed in hospitals with 99 beds or less was 55.30 with a standard deviation of 12.88 and a mean rank of 68.95. Nurse administrators in hospitals with 100 to 399 beds had a mean of 48.98 with a standard deviation of 12.42 and a mean rank of 51.01. Nurse administrators in hospitals with 400 or more beds had a mean of 44.33 with a standard deviation of 14.07 and a mean rank of 41.20. The overall stress level of nurse administrators was significantly different between hospitals of different sizes ($\chi^2 = 11.61, p < .01$).

A Bonferroni adjustment was used to test pairwise comparisons between the different size hospitals. Using this adjustment each pairwise Mann-Whitney U test was conducted with a Type I error and alpha of .016. The pairwise tests showed that nurse administrators employed in hospitals with 99 beds or less reported a higher level of stress than nurse administrators employed in hospitals with 100 to 399 beds ($z = -2.78, p = .005$). Similarly, the Mann-Whitney U Test showed that nurse administrators in hospitals with 99 beds or less reported a higher level of stress than the nurse administrators in hospitals with 400 or more beds ($z = -2.62, p = .008$). The pairwise Mann-Whitney U test revealed no statistical difference in stress levels for nurse administrators employed in hospitals with 100 to 399 beds and nurse administrators employed in hospitals with 400 or more beds ($z = -1.22, p = .220$). Therefore, the null

hypothesis was rejected as a significant difference existed between overall stress levels of nurse administrators employed in hospitals with 99 beds or less and those nurse administrators employed in hospitals with 100 to 399 beds and hospitals with 400 beds or more.

Comparisons were made between the subscale scores derived from factor analysis based upon hospital bed capacity. None of the p values were less than .05 level of probability. Data for overall and subscale scores are depicted in Table 30.

Research Question 4: What type of strategies were identified and are there differences in overall and subscale strategy scores by nurse administrators for dealing with or managing occupational stress according to age, sex, marital status, total number of years of professional nursing experience, number of years as a top-level administrator, educational attainment level, and size (bed capacity) of hospital?

The Mann-Whitney U Test was used to test for differences in hypothesis 8 through 13 on strategies used by nurse administrators to deal with or manage occupational stress. Differences were calculated on the following subsets: Active Cognitive (AC), Active Behavioral (AB), Avoidance (AV), and Overall strategies (ABCV). The alpha value was set at $<.05$. Data are graphically displayed using bar graphs that depict mean scores for each group for Active Cognitive,

Table 30

Kruskal-Wallis Test of Differences in Overall and Subscale
Stress Level Scores by Hospital Bed Capacity

Overall	N	Mean	SD	Mean Rank	X ²	2-tailed p
99 beds or <	53	55.30	12.88	68.95	11.61	.01*
100 to 399	47	48.98	12.42	51.01		
400 beds or >	15	44.33	14.07	41.20		
<u>Subscales</u>						
<u>Factor 1 - Professional Conflicts</u>						
99 beds or <	53	.08	1.03	60.30	.48	.79
100 to 399	47	.04	1.02	56.26		
400 beds or >	15	.15	.82	55.33		
<u>Factor 2- Lack of Recognition as a Professional</u>						
99 beds or <	53	.21	.97	65.92	5.59	.06
100 to 399	47	.17	.98	51.70		
400 beds or >	15	.23	1.06	49.73		
<u>Factor 3 - Work Overload</u>						
99 beds or <	53	.04	.87	59.47	1.57	.45
100 to 399	47	.06	1.07	59.55		
400 beds or >	15	-.34	1.19	47.93		
<u>Factor 4-Meeting Personal/Emotional Needs of Patients</u>						
99 beds or <	53	.23	.91	65.06	4.44	.10
100 to 399	47	.18	1.07	52.43		
400 beds or >	15	.25	.95	50.53		

(Table continues)

Subscale	N	Mean	SD	Mean Rank	X ²	p
<u>Factor 5- Lack of Professional Confidence in Patient Care</u>						
99 beds or <	53	.18	.97	64.77	44.59	.10
100 to 399	47	.12	.96	53.96		
400 beds or >	15	.25	1.15	46.73		

*p < .05

Active Behavioral, Avoidance, and Overall mean strategy scores based on the nurse administrator's age, gender, marital status, years of professional nursing experience, number of years in a top-level nurse administrator position, educational attainment, and hospital bed capacity (Appendices G-M).

Hypothesis testing for 8 through 13 focused on Part III of the questionnaire that included a list of 17 strategies that people used when dealing with job-related stress. These strategies were adapted from previous work by Billings and Moos (1981), who classified the strategies according to the method of coping which they represent. Thus, each strategy could be designated as representing one of three methods of coping: (a) 1-6, active-cognitive, which involves managing one's appraisal of a situation's stressfulness (e.g., trying to see the positive side, considering several alternatives for handling problems); (b) 7-12, active-behavioral, which is characterized by overt

attempts to deal directly with problems and their effects (e.g., taking some positive action, talking with a friend); or (c) 13-17, avoidance, which attempts to avoid active confrontation of problems or to indirectly reduce emotional tension (e.g., keeping your feelings to yourself).

Null hypothesis 8 stated there will be no significant difference in strategies used to deal with or manage occupational stress by nurse administrators 45 years old or less and nurse administrators 46 years of age or older.

For the Active Cognitive (AC) strategies, nurse administrators 45 years old or less had a mean of 18.56, a standard deviation of 2.87 and a mean rank of 60.56. The mean score for nurse administrators 46 years of age or older was 19.21, a standard deviation of 2.89, and a mean rank of 65.40. The Mann-Whitney U test yielded a z score of $-.75$ with a two-tailed probability score of .45. Analysis of data indicated no significant difference in Active Cognitive strategies used by nurse administrators based on age; therefore, the null hypothesis was retained.

Data analysis for the Active Behavioral (AB) strategies indicated a mean of 15.48 for nurse administrators 45 years old or less, a standard deviation of 3.44, and a mean rank of 64.23. The mean for nurse administrators 46 years of age or older was 15.29, a standard deviation of 3.02, and a mean rank of 61.79. The Mann-Whitney U test yielded a z score of $-.38$ with a two-tailed probability score of .70. Analysis

of data indicated no significant difference in Active Behavioral strategies based on age; therefore, the null hypothesis was retained.

Data analysis for the Avoidance (AV) strategies indicated a mean of 8.31 for nurse administrators 45 years old or less, a standard deviation of 2.54, and a mean rank of 69.52. The mean of nurse administrators 46 years of age or older 7.38, a standard deviation of 2.55, and a mean rank of 55.48. The Mann-Whitney U test yielded a z score of -2.19 with a two-tailed probability score of .03. Analysis indicated a significant difference in Avoidance strategies used by nurse administrators based on age. Results showed that nurse administrators 46 years of age or older used less avoidance strategies to deal with or manage occupational stress than did their colleagues age 45 or less. Therefore, the null hypothesis was rejected.

Data analysis for the Overall (ABCV) strategies indicated a mean of 42.35 for nurse administrators 45 years old or less, S. D. of 5.21, and a mean rank of 64.75. The mean of nurse administrators 46 years old or older was 41.95, S. D. of 5.20, and a mean rank of 60.25. The Mann-Whitney U test yielded a z score of .69 with a two-tailed probability score of .48. Analysis of data indicated no significant difference in Overall strategies based on age; therefore, the null hypothesis was retained. Data are presented in Table 31 and in Appendix G.

Table 31

Mann-Whitney U Test of Differences in Active Cognitive,
Active Behavioral, Avoidance, and Overall Strategy Scores
by Age

Strategy	N	Mean	SD	Mean Rank	z	Two-Tailed p
<u>Active Cognitive</u>						
45 or <	62	18.56	2.87	60.56	-.75	.45
46 or >	63	19.21	2.89	65.40		
<u>Active Behavioral</u>						
45 or <	62	15.48	3.44	64.23	-.38	.70
46 or >	63	15.29	3.02	61.79		
<u>Avoidance</u>						
45 or <	62	8.31	2.54	69.52	-2.19	.03*
46 or >	62	7.38	2.55	55.48		
<u>Overall</u>						
45 or <	62	42.35	5.21	64.75	-.70	.48
46 or >	62	41.95	5.20	60.25		

* p < .05

Null hypothesis 9 stated there will be no significant difference in strategies used to deal with or manage occupational stress between male and female nurse administrators. For the Active Cognitive (AC) strategies, the mean of male nurse administrators was 16.55, a standard deviation of 2.94, and a mean rank of 36.82. The mean for female nurse administrators was 19.12, a standard deviation of 2.80, and a mean rank of 65.00. The Mann-Whitney U test yielded a z score of -2.75 with a two-tailed probability score of .01. Analysis of data indicated a significant difference in Active Cognitive strategies used by nurse administrators based on gender. Female nurse administrators used active cognitive strategies more frequently than male nurse administrators; therefore, the null hypothesis was rejected.

Data analysis for the Active Behavioral (AB) strategies indicated a mean of 14.00 for male nurse administrators, a standard deviation of 3.58, and a mean rank of 50.05. The mean of female nurse administrators was 15.48, a standard deviation of 3.17, and a mean rank of 63.71. The Mann-Whitney U test yielded a z score of -1.21 with a two-tailed probability score of .23. Analysis of data indicated no significant difference in Active Behavioral strategies used by nurse administrators based on gender; therefore, the null hypothesis was retained.

Data analysis for the Avoidance (AV) strategies indicated a mean of 8.55 for male nurse administrators, a standard

deviation of 2.91, and a mean rank of 63.95. The mean for female nurse administrators was 7.78, a standard deviation of 2.56, and a mean rank of 60.83. The Mann-Whitney U test yielded a z score of -1.17 with a two-tailed probability score of .24. Analysis of data indicated no significant difference in Avoidance strategies based on gender, and the null hypothesis was retained.

Data analysis for the Overall (ABCV) strategies indicated a mean of 39.09 for male nurse administrators, a standard deviation of 5.44, and a mean rank of 44.82. The mean for female nurse administrators was 42.42, a standard deviation of 5.10, and a mean rank of 63.69. The Mann-Whitney U test yielded a z score of -1.68 with a two-tailed probability score of .09. Analysis of data indicated no significant difference in Overall strategies based on gender; therefore, the null hypothesis was retained. In summary, there was no significant difference based on gender on the AB, AV, or Overall strategy. However, there was a significant difference based on gender on the AC strategy. Males used more AC strategies than did females. Data are presented in Table 32 and in Appendix H.

Null hypothesis 10 stated that there will be no significant difference in strategies used to deal with or manage occupational stress between married and unmarried nurse administrators. Unmarried status included single, never married, widowed, or divorced. For the Active Cognitive (AC) (AC) strategies, the mean of unmarried nurse administrators

Table 32

Mann-Whitney U Test of Differences in Active Cognitive, Active Behavioral, Avoidance, and Overall Strategy Scores by Gender

Strategy	N	Mean	SD	Mean Rank	z	Two-Tailed p
Active Cognitive						
Males	11	16.55	2.94	36.82	-2.50	.01*
Females	113	19.12	2.80	65.00		
Active Behavioral						
Males	11	14.00	3.58	50.05	-1.21	.23
Females	113	15.48	3.17	63.71		
Avoidance						
Males	11	8.55	2.91	73.95	-1.17	.24
Females	112	7.78	2.56	60.83		
Overall						
Males	11	39.09	5.44	44.82	-1.68	.09
Females	113	42.42	5.10	63.69		

* p < .05

was 18.71, a standard deviation of 2.83, and a mean rank of 60.11. The mean of married nurse administrators was 18.95, a standard deviation of 2.91, and a mean rank of 63.95. The Mann-Whitney U test yielded a z score of $-.52$ with a two-tailed probability score of $.61$. Analysis of data indicated no significant difference in Active Cognitive strategies used based on marital status; therefore, the null hypothesis was retained.

Data analysis for the Active Behavioral (AB) strategies indicated a mean of 15.35 for unmarried nurse administrators, standard deviation of 3.67, and a mean rank of 61.24. The mean of married nurse administrators was 15.40, a standard deviation of 3.10, and a mean rank of 63.58. The Mann-Whitney U test yielded a z score of $-.31$ with a two-tailed probability score of $.75$. Analysis of data indicated no significant difference in Active Behavioral strategies based on marital status; therefore, the null hypothesis was retained.

Data analysis for the Avoidance (AV) strategies indicated a mean of 7.42, a standard deviation of 2.34, and a mean rank of 58.26 for unmarried nurse administrators. The mean of married nurse administrators was 7.98, a standard deviation of 2.65, and a mean rank of 63.91. The Mann-Whitney U test yielded a z score of $-.76$ with a two-tailed probability score of $.44$. Analysis of data indicated no significant difference in Avoidance strategies based on marital status; therefore,

the null hypothesis was retained.

Data analysis for the Overall (ABCV) strategies indicated a mean of 41.49, a standard deviation of 5.77, and a mean rank of 54.55 for unmarried nurse administrators. The mean of married nurse administrators was 42.38, a standard deviation of 4.99, and a mean rank of 65.15. The Mann-Whitney U test yielded a z score of -1.43 with a two-tailed probability score of .15. Analysis of data indicated no significant difference in Overall strategies based on marital status; therefore, the null hypothesis was retained. In summary, there was no significant difference in strategies used by nurse administrators on the AC, AB, AV, or Overall strategies based on marital status. Data are presented in Table 33 and in Appendix I.

Null hypothesis 11 stated there will be no significant difference in strategies used to deal with or manage occupational stress between nurse administrators with 20 years or fewer of professional nursing experience and nurse administrators with 21 years or more of professional nursing experience. For the Active Cognitive (AC) strategies, the mean of nurse administrators with 20 years or less of professional nursing experience was 18.68, a standard deviation of 2.71, and a mean rank of 60.44. The mean of nurse administrators with 21 years or more of professional nursing experience was 19.07, a standard deviation of 3.02, and a mean rank of 64.04. The Mann-Whitney U test yielded a

Table 33

Mann-Whitney U Test of Differences in Active Cognitive, Active Behavioral, Avoidance, and Overall Strategy Scores by Marital Status

Strategy	N	Mean	SD	Mean Rank	z	Two-Tailed p
<u>Active Cognitive</u>						
Unmarried	31	18.71	2.83	60.11	-.52	.61
Married	94	18.95	2.91	63.95		
<u>Active Behavioral</u>						
Unmarried	31	15.35	3.67	61.24	-.31	.75
Married	94	15.40	3.10	63.58		
<u>Avoidance</u>						
Unmarried	31	7.42	2.34	58.26	-.76	.44
Married	93	7.98	2.65	63.91		
<u>Overall</u>						
Unmarried	31	41.49	5.77	54.55	-1.43	.15
Married	93	42.36	4.99	65.15		

* $p < .05$.

z score of $-.55$ with a two-tailed probability score of $-.57$. Analysis of data indicated no significant difference in Active Cognitive strategies used by nurse administrators based years of professional nursing experience; therefore, the null hypothesis was retained.

Data analysis for the Active Behavioral (AB) strategies indicated a mean of 15.16 for nurse administrators with 20 years or less of professional nursing experience, a standard deviation of 3.34 , and a mean rank of 60.76 . The mean of nurse administrators with 21 years or more of professional nursing experience was 15.54 , a standard deviation of 3.18 , and a mean rank of 63.80 . The Mann-Whitney U test yielded a z score of $-.47$ with a two-tailed probability score of $.64$. Analysis of data indicated no significant difference in Active Behavioral strategies used by nurse administrators based years of professional nursing experience; therefore, the null hypothesis was retained.

Data analysis for the Avoidance (AV) strategies indicated a mean of 8.34 for nurse administrators with 20 years or less of professional nursing experience, a standard deviation of 2.49 , and a mean rank of 70.15 . The mean of nurse administrators with 21 years or more of professional nursing experience was 7.40 , a standard deviation of 2.56 , and a mean rank of 55.83 . The Mann-Whitney U test yielded a z score of -2.22 with a two-tailed probability score of $.03$. Analysis of data indicated a significant difference in

Avoidance strategies used by nurse administrators based on years of professional nursing experience. Nurse administrators with 21 years or more of professional nursing experience used less avoidance strategies. Therefore, the null hypothesis was rejected.

Data analysis for the Overall (ABCV) strategies indicated a mean of 42.17 for nurse administrators with 20 years or less of professional nursing experience, a standard deviation of 5.04, and a mean rank of 63.75. The mean of nurse administrators with 21 years or more of professional nursing experience was 42.09, a standard deviation of 5.34, and a mean rank of 60.67. The Mann-Whitney U test yielded a z score of $-.48$ with a two-tailed probability score of $.63$. Analysis of data indicated no significant difference in Overall strategies based on years of professional nursing experience; therefore, the null hypothesis was retained. Data are presented in Table 34 and in Appendix J.

Null hypothesis 12 stated there will be no significant difference in strategies used to deal with or manage occupational stress between nurse administrators with 12 years or less of top-level nurse administrator experience and nurse administrators with 13 years or more of top-level nurse administrator experience. For the Active Cognitive (AC) strategies, the mean of nurse administrators with less than 12 years in a top-level position was 18.87, a standard deviation of 2.93, and a mean rank of 63.21. The mean of

Table 34

Mann-Whitney U Test of Differences in Active Cognitive,
Active Behavioral, Avoidance, and Overall Strategy Scores by
Number of Years of Professional Nursing Experience

Strategy	N	Mean	SD	Mean Rank	z	Two-Tailed p
Active Cognitive						
20 years or <	53	18.68	2.71	60.44	-.55	.57
21 years or >	71	19.07	3.02	64.04		
Active Behavioral						
20 years or <	53	15.16	3.34	60.76	-.47	.64
21 years or >	71	15.54	3.18	63.80		
Avoidance						
20 years or <	53	8.34	2.49	70.15	-2.29	.03*
21 years or >	70	7.40	2.56	55.83		
Overall						
20 years or <	53	42.17	5.04	63.75	-.48	.63
21 years or >	70	42.09	5.34	60.67		

* p < .05

nurse administrators with 13 or more years in a top-level position was 18.95, a standard deviation of 2.64, and a mean rank of 62.02. The Mann-Whitney U test yielded a z score of $-.14$ with a two-tailed probability score of $.89$. Analysis of data indicated no significant difference in Active Cognitive strategies used by nurse administrators based on number of years as a top-level nurse administrator; therefore, the null hypothesis was retained.

Data analysis for the Active Behavioral (AB) strategies indicated the mean of nurse administrators with less than 12 years in a top-level position was 15.38, a standard deviation of 3.31, and a mean rank of 63.24. The mean of nurse administrators with 13 or more years in a top-level position was 15.41, a standard deviation of 2.88, and a mean rank of 61.86. The Mann-Whitney U test yielded a z score of $-.16$ with a two-tailed probability score of $.87$. Analysis of data indicated no significant difference in Active Behavioral strategies used by nurse administrators based on years as a top-level nurse administrator; therefore, the null hypothesis was retained.

Data analysis for the Avoidance (AV) strategies indicated a mean of 8.12 for nurse administrators with less than 12 years in a top-level position, a standard deviation of 2.56, and a mean rank of 66.42. The mean of nurse administrators with 13 or more years in a top-level position was 6.54, a standard deviation of 2.32, and a mean rank of

44.34. The Mann-Whitney U test yielded a z score of -2.63 with a two-tailed probability score of $<.01$. Analysis of data indicated a significant difference in Avoidance strategies based on years as a top-level nurse administrator. Avoidance strategies were used more frequently to deal with or manage stress by nurse administrators with 12 years or less in a top-level nurse administrator position. Therefore, the null hypothesis was rejected.

Data analysis for the Overall (ABCV) strategies indicated a mean of 42.42 for nurse administrators with less than 12 years in a top-level position, a standard deviation of 5.24, and a mean rank of 64.70. The mean of nurse administrators with 13 or more years in a top-level position was 40.91, a standard deviation of 4.81, and a mean rank of 52.32. The Mann-Whitney U test yielded a z score of - 1.47 with a two-tailed probability score of .14. Analysis of data indicated no significant difference in Overall strategies based on number of years as a top-level nurse administrator; therefore, the null hypothesis was retained. Data are presented in Table 35 and in Appendix K.

Null hypothesis 13 stated there will be no significant difference in strategies used to deal with or manage occupational stress between nurse administrators with educational attainment at the master's degree or higher and educational attainment below the master's degree. For the

Table 35

Mann-Whitney U Test of Differences in Active Cognitive,
Active Behavioral, Avoidance, and Overall Strategy Scores
by Number of Years as a Top-level Nurse Administrator

Strategy	N	Mean	SD	Mean Rank	z	Two-Tailed p
Active Cognitive						
12 yrs or <	103	18.87	2.93	63.21	-.14	.89
13 yrs or >	22	18.95	2.64	62.02		
Active Behavioral						
12 yrs or <	103	15.38	3.31	63.24	-.16	.87
13 yrs or >	22	15.41	2.88	61.86		
Avoidance						
12 yrs or <	102	8.12	2.56	66.42	-2.63	<.01*
13 yrs or >	22	6.54	2.32	44.34		
Overall						
12 yrs or <	102	42.42	5.24	64.70	-1.47	.14
13 yrs or >	22	40.91	4.81	52.32		

* p < .05

Active Cognitive (AC) strategies, the mean of nurse administrators with less than a master's degree was 18.66, a standard deviation of 2.80, and a mean rank of 63.21. The mean of nurse administrators with a master's degree or higher was 19.33, a standard deviation of 3.01, and a mean rank of 68.76. The Mann-Whitney U test yielded a z score of -1.30 with a two-tailed probability score of .19. Analysis of data indicated no significant difference in Active Cognitive strategies used by nurse administrators based on educational attainment; therefore, the null hypothesis was retained.

Data analysis for the Active Behavioral (AB) strategies indicated a mean of 15.24 for nurse administrators with less than a master's degree, a standard deviation of 3.16, and a mean rank of 61.32. The mean of nurse administrators with a master's degree or higher was 15.65, a standard deviation of 3.37, and a mean rank of 66.21. The Mann-Whitney U test yielded a z score of -.72 with a two-tailed probability score of .47. Analysis of data indicated no significant difference in Active Behavioral strategies used by nurse administrators based on educational attainment; therefore, the null hypothesis was retained.

Data analysis for the Avoidance (AV) strategies indicated a mean of 8.14 for nurse administrators with less than a master's degree, a standard deviation of 2.61, and a mean rank of 67.01. The mean of nurse administrators with a master's degree or higher was 7.26, a standard deviation of 2.44, and a

mean rank of 54.01. The Mann-Whitney U test yielded a z score of -1.93 with a two-tailed probability score of .05. Analysis of data indicated no significant difference in Avoidance strategies used by nurse administrators based on educational attainment. Data revealed no significant difference between nurse administrators with less than a master's degree in the use of avoidance strategies and nurse administrators with a master's degree or higher. Therefore, the null hypothesis was retained.

Data analysis for the Overall (ABCV) strategies indicated a mean of 42.11 for nurse administrators with less than a master's degree, a standard deviation of 5.21, and a mean rank of 61.38. The mean of nurse administrators with a master's degree or higher was 42.23, a standard deviation of 5.20, and a mean rank of 64.60. The Mann-Whitney U test yielded a z score of -.47 with a two-tailed probability score of .63. Analysis of data indicated no significant difference in Overall strategies based on educational attainment; therefore, the null hypothesis was retained. Data are presented in Table 36 and in Appendix L.

Null hypothesis 14 stated there will be no significant difference in strategies used to deal with or manage occupational stress by nurse administrators employed in hospitals with 99 beds or less, 100 to 399 beds, and 400 beds or more.

The overall mean strategy score for nurse administrators

Table 36

Mann-Whitney U Test of Differences in Active Cognitive,
Active Behavioral, Avoidance, and Overall Strategy Scores
by Educational Attainment

Strategy	N	Mean	SD	Mean Rank	z	Two-Tailed p
<u>Active Cognitive</u>						
< Master's	82	18.66	2.80	63.21	-1.30	.19
Master's or >	43	19.33	3.01	68.76		
<u>Active Behavioral</u>						
< Master's	82	15.24	3.16	61.32	-.72	.47
Master's or >	43	15.65	3.37	66.21		
<u>Avoidance</u>						
< Master's	81	8.14	2.61	67.01	-1.93	.05
Master's or >	43	7.26	2.44	54.01		
<u>Overall</u>						
< Master's	81	42.11	5.21	61.38	-.47	.63
Master's or >	43	42.23	5.20	64.60		

* p < .05

employed in hospitals with 99 beds or less was 42.38 with a standard deviation of 4.63 and a mean rank of 64.87. Nurse administrators in hospitals with 100 to 399 beds had a mean of 41.36 with a standard deviation of 5.53 and a mean rank of 56.73. For nurse administrators employed in hospitals with 400 beds or more, the mean was 43.81 with a standard deviation of 5.81 and a mean rank of 71.94. The Kruskal-Wallis test yielded a x^2 score of 2.66 with a two-tailed probability score of .26. Analysis of data indicated no significant difference in overall strategies used by nurse administrators based on hospital bed capacity; therefore, the null hypothesis was retained for overall strategies.

For the Active Cognitive (AC) strategies, the mean for nurse administrators was 18.71 with a standard deviation of 2.64, and a mean rank of 60.75. Nurse administrators in hospitals with 100 to 399 beds had a mean of 18.72 with a standard deviation of 3.20 and a mean rank of 60.75. For hospitals with 400 beds or more, the mean was 20.06 with a standard deviation of 2.46 and a mean rank of 78.34. The Kruskal-Wallis test yielded a x^2 score of 3.34 with a two-tailed probability score of .19. Analysis of data indicated no significant difference in Active Cognitive strategies used by nurse administrators based on hospital bed capacity; therefore, the null hypothesis was retained.

Data analysis for the Active Behavioral (AB) strategies

revealed a mean score of 15.10, a standard deviation of 3.10, and a mean rank of 60.54 for nurse administrators in hospitals with 99 beds or less. Nurse administrators in hospitals with 100 to 399 beds had a mean of 15.17 with a standard deviation of 3.10 and a mean rank of 60.20. For hospitals with 400 beds or more, the mean was 17.06 with a standard deviation of 3.75 and a mean rank of 80.84. The Kruskal-Wallis test yielded a x^2 score of 4.50 with a two-tailed probability score of .10. Analysis of data indicated no significant difference in Active Behavioral strategies used by nurse administrators based on hospital bed capacity; therefore, the null hypothesis was retained.

Data analysis for the Avoidance (AV) strategies revealed a mean score of 8.57, a standard deviation of 2.68, and a mean rank of 72.39 for nurse administrators in hospitals with 99 beds or less. For nurse administrators in hospitals with 100 to 399 beds, the mean was 7.36 with a standard deviation of 2.35 and a mean rank of 56.09. For hospitals with 400 beds or more, the mean was 6.69 with a standard deviation of 2.21 and a mean rank of 46.69. The Kruskal-Wallis test yielded a x^2 score of 9.22 with a two-tailed probability score of $<.01$. Analysis of data revealed a significant difference in Avoidance (AV) strategies used by nurse administrators based on hospital bed capacity ($X^2 = 9.22, p = <.01$).

A Bonferroni adjustment was used to test pairwise

comparisons between the different size hospitals. Using this adjustment each pairwise Mann-Whitney U test was conducted with a Type I error and alpha of .016. The pairwise Mann-Whitney U test revealed no significant difference for Avoidance strategies used by nurse administrators: in hospitals with 99 beds or less and hospitals with 100 to 399 beds ($z = -2.36$, $p = .018$; and nurse administrators in hospitals with 100 to 399 beds compared with hospitals with 400 or more beds ($z = .90$, $p = .36$). The pairwise test revealed that a significant difference existed in the use of Avoidance strategies by nurse administrators in hospitals with 99 beds or less and hospitals with 400 beds or more ($z = -2.55$, $p = .010$). Nurse administrators in hospitals with 99 or less beds used avoidance strategies more frequently to deal with or manage occupational stress than nurse administrators in hospitals with 400 or more; therefore, the null hypothesis was rejected. Data for overall and subscale strategies scores are depicted in Table 37 and in Appendix M.

Research Question 5: What type of strategy is related to a particular type of stress?

This question was answered by using the Spearman Rho correlation coefficient procedure to determine the correlation between the five stress factors generated by Factor Analysis procedure and the three strategies, Active

Table 37

Kruskal-Wallis Test of Differences in Overall and Subscale
Strategy Scores by Hospital Bed Capacity

Overall	N	Mean	SD	Mean Rank	χ^2	p
99 beds or <	58	42.38	4.63	64.87	2.66	.26
100 to 399	50	41.36	5.53	56.73		
400 beds or >	16	43.81	5.81	71.94		
<u>Active Cognitive</u>						
99 beds or <	58	18.71	2.64	60.75	3.34	.19
100 to 399	51	18.72	3.20	60.75		
400 beds or >	16	20.06	2.46	78.34		
<u>Active Behavioral</u>						
99 beds or <	58	15.10	3.10	60.54	4.50	.10
100 to 399	51	15.17	3.10	60.20		
400 beds or >	16	17.06	3.75	80.84		
<u>Avoidance</u>						
99 beds or <	58	8.57	2.68	72.39	9.22	<.01*
100 to 399	50	7.36	2.35	56.09		
400 beds or >	16	6.69	2.21	46.69		

p* <.05

Cognitive, Active Behavioral, and Avoidance. Each correlation was tested for statistical significance at $\alpha=.05$.

Data analysis as depicted in Table 38 revealed that Stress Factor 1, Professional Conflicts, was significantly related to the Avoidance strategy ($r_s=.24$). There was no correlation between Stress Factor 1 and Active Cognitive or Active Behavioral strategies. Nurse administrators who experienced high stress for stress items in Factor 1 used the Avoidance strategies more frequently.

Data analysis for Factor 2, Lack of Recognition as a Professional, revealed Active Cognitive strategy was negatively related ($r_s = -.22$). Nurse administrators who experienced higher stress for stress Factor 2, Lack of Recognition as a Professional, used significantly less Active Cognitive strategies than the Active Behavioral or Avoidance strategies.

Data analysis for Stress Factor 3, Work Overload, revealed those high in stress due to work overload relied on the Active Cognitive coping strategy ($r_s = .23$).

Data analysis for stress Factor 4, Meeting Personal/Professional Needs of Patients, revealed that none of the strategies, Active Cognitive, Active Behavioral, and Avoidance were significantly related to Stress Factor 4.

Data analysis revealed for Stress Factor 5, Lack of Professional Confidence Relative to Patient Care, when

correlated with Active Cognitive, Active Behavioral, and Avoidance strategies, none of the strategies were related to Stress Factor 5.

Overall stress level was positively related to the Avoidance strategy ($r_s=.28$). This means that the major strategy associated with overall stress was Avoidance. Nurse administrators with a high level of overall stress use Avoidance strategies as the dominant way to deal with or manage occupational stress. The five items for Avoidance strategies include: preparing for the worst; taking frustrations out on other people; trying to reduce tension by eating more; trying to reduce tension by smoking more and keeping your feelings to yourself. Data are presented in Table 38.

Table 38

Spearman Rank Order Correlation Coefficients Between Types
of Stressors and Strategies for Coping with Occupational
Stress

Stress	Strategies		
	Active Cognitive (N=114)	Active Behavioral (N=114)	Avoidance (N=113)
Factor 1:	.12	.09	.24*
Factor 2:	-.22*	.03	.09
Factor 3:	.23*	.13	.10
Factor 4:	-.06	.06	.03
Factor 5:	-.04	.02	-.03
Overall	.00	.16	.28*

* $p < .05$

Note.

Factor 1: Professional Conflicts

Factor 2: Lack of Recognition as a Professional

Factor 3: Work Overload

Factor 4: Meeting Personal/Professional Needs of Patients

Factor 5 : Lack of Professional Confidence Relative to
Patient Care

CHAPTER 5

Summary, Findings, Conclusions, and Recommendations

Summary

The preceding chapter presented research questions and a series of hypotheses, the rationale for investigating them, the methodology used and the findings obtained. Chapter 5 restates the problem and purpose of the study, summarizes the findings, and provides conclusions and recommendations.

Nurse administrators are leaders in the nursing profession and in health care organizations throughout the United States. While there has been a growing recognition of job stress experienced by professional nurses in the hospital setting, limited research studies exist which elucidate the problem of occupational stress encountered by nurse administrators and the strategies used to deal with or manage occupational stress.

The problem undergirding this study was the lack of a clear understanding of the stress associated with the nurse administrator's position or strategies used by nurse administrators to deal with or manage occupational stress. The purpose of this study was to investigate the relationship between selected demographic variables and perceived occupational stress by nurse administrators and demographic variables and strategies used by nurse

administrators to deal with or manage occupational stress.

One hundred twenty-six nurse administrators employed in general hospitals in Tennessee completed a questionnaire which contained three parts. Part I was a demographic survey; Part II - the Health Professions Stress Inventory (HPSI); and Part III - listed strategies used to deal with or manage stress. Part I, which contained demographic data, addressed the respondent's present position title, facility classification, hospital bed capacity, marital status, gender, age, individual to whom nurse administrator reports, the availability of organizational stress management workshops, and the nurse administrator's sources of stress. Part II, the HPSI information, consisted of 30 stress-related items rated by respondents on a Likert scale. Part III, the strategies, consisted of 17 items rated by respondents on a Likert scale.

Six research questions were addressed along with 14 hypotheses. Hypotheses 1 through 7 tested the relationship between demographic variables and the nurse administrator's perceived stress. Hypotheses 8 through 14 tested the relationship between demographic variables and strategies used by nurse administrators to deal with or manage occupational stress.

The study was primarily descriptive although descriptive and inferential statistics were used. Statistical procedures included Principal Components Factor

Analysis, Mann-Whitney U Test, Kruskal-Wallis ANOVA, and Spearman Rho correlation coefficient. Statistical analysis was completed using the Statistical Package for the Social Sciences (SPSS/PC+) at East Tennessee State University.

Summary of Findings

1. Research question 1 dealt with identifying subscales on the Health Professions Stress Inventory. Five stress factors (subscales) were identified by using the factor analysis procedure: Professional Conflicts, Lack of Recognition as a Professional, Work Overload, Meeting Personal/Professional Needs of Patients, and Lack of Professional Confidence Relative to Patient Care.

2. The overall total stress level mean and standard deviation scores for nurse administrators in this study were found to be lower ($M=51.29$, S. D. 13.3) than for nurses ($M=61.2$, S. D. 14.2, $M=59.48$, S. D. = 14.7) as reported by Wolfgang (1988b, 1991), respectively. When comparing the mean total stress level and standard deviation scores among nurse administrators in this study based on hospital bed capacity, nurse administrators employed in hospitals with 99 beds or less reported the highest mean stress level and standard deviation scores while nurse administrators in hospitals with 400 beds or more reported the lowest mean stress level and standard deviation scores.

3. Research question 3 addressed differences in nurse

administrators occupational stress levels (overall and subscales) based on demographic variables: age, gender, marital status, number of years of professional nursing experience, number of years in a top-level nurse administrator position, educational attainment, and hospital bed capacity.

a. There were statistically significant differences revealed in overall stress levels only when testing the nurse administrator stress level with three of the demographic variables: number of years in a top-level nurse administrator position, educational attainment, and hospital bed capacity. Nurse administrators in a top-level nurse administrator position 12 years or less, nurse administrators with educational attainment of less than a master's degree, and nurse administrators employed in hospitals with 99 beds or less experienced a significantly higher level of stress.

b. There were statistically significant differences revealed in the nurse administrator's subscale levels of stress only when testing the five stress factors by demographic variables: marital status, number of years in a top-level nurse administrator position, and educational attainment.

(1) Based on marital status, married nurse administrators had a significantly higher level of stress than unmarried nurse administrators for Stress Factor 3,

Work Overload.

(2) Based on the number of years in a top-level nurse administrator position, nurse administrators in the top-level position 12 years or less experienced a higher level of stress than nurse administrators in a top-level position for 13 years or more on Stress Factor 3, Work Overload.

(3) Based on educational attainment, there was a statistically significant difference in three Stress Factors: Factor 3, Work Overload, Factor 4, Meeting Personal/Professional Needs of Patients, and Factor 5, Lack of Professional Confidence Relative to Patient Care.

Nurse administrators with educational attainment less than a master's degree experienced a significantly higher level of stress than nurse administrator's with a master's degree or higher.

4. Question 4 addressed the types of strategies used and the differences in subscale strategies for Active Cognitive, Active Behavioral, Avoidance and Overall used by nurse administrators to deal with or manage occupational stress based on demographic variables: age, gender, marital status, number of years of professional nursing experience, number of years in a top-level nurse administrator position, educational attainment, and hospital bed capacity.

a. There was a statistically significant difference for strategies used by nurse administrators only when testing Avoidance strategies based on demographic variables:

age, number of years of professional nursing experience, number of years in a top-level nurse administrator position, and hospital bed capacity. Nurse administrators 45 years of age or less used Avoidance strategies more frequently than nurse administrators 46 years or older. Nurse administrators with 20 years or less of professional nursing experience used Avoidance strategies more frequently than their counterparts with 21 years or more of professional nursing experience. Nurse administrators in a top-level nurse administrator position 12 years or less used Avoidance strategies more frequently than did their colleagues with 13 years or more as a top-level nurse administrators.

While there was no significant difference in Avoidance strategies used by nurse administrators in hospitals with 99 beds or less and nurse administrators in hospitals with 100 to 399 beds, there was a statistically significant difference in Avoidance strategies used by nurse administrators employed by hospitals with 99 beds or less and hospitals with 400 or more beds. Nurse administrators in hospitals with 99 beds or less used Avoidance strategies more frequently.

b. There was a statistically significant difference for strategies used by nurse administrators only when testing Active Cognitive strategies based on demographic variable gender. Female nurse administrators used Active Cognitive strategies more frequently than male nurse administrators.

5. The Spearman Rank Order Correlation Coefficient procedure used to correlate types of stressors (the five Stress Factors) with Active Cognitive, Active Behavioral, and Avoidance strategies revealed that Stress Factor 1, Professional Conflicts was significantly related to Avoidance strategies. Stress Factor 2, Lack of Recognition as a Professional, was negatively significantly correlated with Active Cognitive strategies. Stress Factor 3, Work Overload, was significantly related to Active Cognitive strategies and overall stress was significantly related to Avoidance strategies.

Conclusions

The following conclusions were based upon data analysis and findings presented previously:

1. The Health Professions Stress Inventory is not a unidimensional scale but actually can be used to identify five different nontrivial factors that occur in the work environment of the professional nurse, including nurse administrators. The inclusion of the five subscale stress factors has provided an enhancement for this study.

2. The difference in the lower mean stress scores and the standard deviation scores for nurse administrators in this study compared to Wolfgang's (1988b, 1991) studies may be attributed to a variation in the selection of the population and sampling techniques. The HPSI instrument may not be appropriate for assessing stress levels of nurse

administrators when comparing their unique roles and responsibilities with the roles and responsibilities of professional staff nurses. The nurse administrator may have other stressors not identified in the HPSI.

3. The number of years in a top-level nurse administrator position, educational attainment, and the hospital bed capacity does have an effect on overall stress levels reported by the nurse administrators. The increased overall stress level reported by nurse administrators who have been in their positions 12 years or less, with an educational preparation of less than a master's degree, and employed in a hospital with 99 beds or less may be attributed to several factors including: demands on nurse administrators which increased tremendously during the 1980s and continues into the 1990s. Nurse administrators not only must keep abreast of changes affecting nursing practices, but learn the aspects of higher technology used in today's health care organizations. Many hospitals throughout the nation have experienced budget crisis and downsizing of personnel. The smaller hospitals with 99 beds or less have been more vulnerable to the possibility of closure and many are now being managed by larger hospitals. The nurse administrator employed in a hospital with 99 beds or less has an overlap of responsibilities due to budgetary constraints and lack of availability of professional nurses. The nurse administrator in larger hospitals is more likely

to have the support of an adequate professional nurse staff to cover expanded roles, such as, infection control, quality improvement, staff development, nurse recruiter, clinical specialist, and nurse practitioners. Nurse administrators in smaller rural hospitals have less opportunities to attend continuing education programs due to staffing shortages and lack of financial reimbursement to attend programs.

4. For subscale stress levels, the marital status of nurse administrators has an effect on Stress Factor 3, Work Overload. Married nurse administrators reported a higher level of stress. The HPSI measures stress related specifically to the work environment. Both male and female married nurse administrators with responsibilities of maintaining a household and fulfilling the role of a nurse administrator position, may experience increased stress due to work overload.

5. The number of years in a top-level nurse administrator position does have an effect on subscale stress levels reported based on Factor 3, Work Overload. Nurse administrators with 12 years or less of experience in a top-level position reported a higher level of stress. The nurse administrator needs to be cognizant that lack of experience as a nurse administrator, lack of knowledge or uncertainty about nursing staff competencies, and lack of delegation may lead to undue stress due to work overload. Setting priorities, managing time wisely, delegating duties,

and managing by objectives may help reduce the work overload and subsequently stress levels of the nurse administrator.

6. The nurse administrator's educational attainment does have an effect on the subscale stress level reported based on three stress subscales: Factor 3, Work Overload, Factor 4, Meeting Personal/Emotional Needs of Patient, and Factor 5, Lack of Professional Confidence in Patient Care. The nurse administrator with less than a master's degree needs to be aware that stress levels may increase with Work Overload, Meeting Personal/Emotional Needs of Patients, and Lack of Professional Confidence in Patient Care. The work overload may originate from necessity of maintaining relationships with a wide variety of individuals in diverse disciplines, such as, hospital administration, medicine, patient support services, other professional groups, and within the nursing service. Some of these groups may have expectations for the nurse administrator that are more aligned to their own personal and departmental goals and values than to those of nursing. The patient care concerns about the quality of care for patients may allude to the nurse administrator's concern regarding adequate numbers of nursing staff and competencies of nursing staff and other disciplines which provide support for patient care. The ethical and moral issues involved in providing quality of patient care are unique problems for nurse administrators and the nursing staff.

7. The use of Avoidance strategies used by nurse administrators to deal with or manage occupational stress depends upon the nurse administrators's age, number of years of professional nursing experience, number of years in a top-level nurse administrator position, and hospital bed capacity. The use of Avoidance strategy includes attempts to avoid active confrontation of problems or to indirectly remove emotional tensions by keeping feelings to yourself and taking frustrations out on other people. Avoidance strategies are used frequently to cope or manage job related stress by nurse administrators 45 years of age or younger, 20 years or less of nursing experience, 12 years or less experience as a nurse administrator, and employment in a hospital with 99 beds or less. The frequent use of Avoidance strategies by nurse administrators may be detrimental, not only to the nurse administrator, but to the entire nursing department, the hospital, and the patients. The literature addressed the problems and conflicts that exist between physicians and nursing staff and the fact that hospital administrators are not likely to oppose the physicians since revenue generated by the hospital is largely dependent upon patient admissions. Nurse administrators employed by hospitals with 99 beds or less will likely find the organization either physician or politically controlled.

8. The use of Active Cognitive strategies used by

nurse administrators to deal with or manage occupational stress depends upon the nurse administrators's gender. Female nurse administrators used Active Cognitive strategies more frequently than males. Both Active Cognitive and Active Behavioral strategies are considered, in most instances, to be most desirable to use for coping or managing stress. Active Cognitive strategy involves one's appraisal of a situation's stressfulness, such as, considering several alternatives for handling problems. Active Behavioral strategy is characterized by overt attempts to deal directly with problems and their effects.

9. Nurse administrators experiencing high level job stress related to Stress Factor 1, Professional Conflicts, use Avoidance strategies more frequently to cope or manage job stress. The nurse administrator's high level of overall stress was significantly related to Avoidance strategies. This information should be an area of utmost interest and concern for hospital administrators, physicians, professional nurses, including nurse administrators, administrators of nursing education programs, and most important to patients, the health care consumers. The frequent use of Avoidance strategies by either the nurse administrator or the nursing staff to cope with or manage job stress may be an impediment to provisions of quality of health care by both nursing and medical staff, ultimately impacting upon the nurse's physical and physiological well

being, and may be a causative factor in many nurses leaving the profession.

10. Nurse administrators who experience high levels of stress related to Stress Factor 2, Lack of Recognition as a Professional, use significantly less Active Cognitive strategies than Active Behavioral or Avoidance strategies. While using less Active Cognitive strategy, the nurse administrator may resort to using Avoidance strategies more frequently along with Behavioral strategies.

11. Nurse administrators who experience high levels of stress related to Stress Factor 3, Work Overload, use Active Cognitive strategies more frequently than Active Behavioral or Avoidance strategies. By using Active Cognitive strategies more frequently, the nurse administrator considers several alternatives for handling problems encountered and examines the positive aspects of the problems.

12. The majority of general hospitals in Tennessee do not provide any type of stress management programs for nurse administrators.

13. The large number of nurse administrators with 5 years or less of nurse administrator experience indicate that the turnover rate for nurse administrators is no different than the turnover rate for nurse administrators addressed in the literature.

14. The level of stress experienced by nurse

administrators and the professional nursing staff may be attributed to lack of awareness of the internal and external political arena that impacts upon the health care delivery systems.

Recommendations

As a result of this study, the following recommendations were made:

1. Nurse administrators with limited education and experience should seek out a successful experienced nurse administrator as a mentor and resource person.
2. Hospital administrators and physicians need to be apprised of the many studies, including the NIOSH studies, addressing occupational stress and its implication for health care workers particularly those employees who have responsibilities for providing direct patient care.
3. Hospital administrators need to provide in-house, regularly-scheduled stress management programs or provide financial support and time off duty for nursing personnel to attend stress management programs through other agencies, especially for nurse administrators employed in hospitals with 99 beds or less.
4. Hospital administrative personnel should make provisions for continuing education programs relevant to specific needs of all nurse administrators, particularly those employed in hospitals with 99 beds or less.
5. Development of an stress-assessment instrument with

input by experienced nurse administrators should be undertaken to identify areas of high stress, not identified in the HPSI. The instrument should focus on major areas of conflict between nurse administrators and physicians, hospital administrators, nursing staff, and other health care disciplines. Assessment should include other areas of high stress, such as, external regulatory agency requirements.

6. A replication of this study by nurse administrators using the HPSI and strategies for professional nurses within their organization could prove helpful to validate the need for stress management programs to be instituted as a measure to promote nursing staff retention and job satisfaction. Also to explore if the use of avoidance strategies by professional nurses are similar to strategies used by nurse administrators in this study.

7. Replication of this study using a random sample of nurse administrators in different regions of the United States to determine stress levels and types of strategies used might provide valuable findings.

8. Stress is a complex phenomenon. A study that evaluates nurse administrators in terms of personality type (Type A or B), internal or external locus of control, specific sources of stress (family, interpersonal, and health) could help delineate factors relevant to the nurse administrator's perception of stress.

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APPENDICES

APPENDIX A
CONSENT LETTER TO USE THE HEALTH
PROFESSIONS STRESS INVENTORY



The University of Georgia

College of Pharmacy

March 29, 1991

Ruby T. Davis
R.F.D. #7, Box 312
Greeneville, TN 37743

Dear Ruby:

As noted in our previous telephone conversations, you do indeed have permission to use the Health Professions Stress Inventory (HPSI) in your dissertation research. I am glad that you will be using the HPSI in your project and I will look forward to hearing about the results of your research. If I can be of further assistance, please do not hesitate to contact me again. Good luck with your dissertation!

Sincerely,

Alan P. Wolfgang, Ph.D.
Assistant Professor
Pharmacy Care Administration

Athens, Georgia 30602

APPENDIX B
CONSENT LETTER TO USE LISTING OF STRATEGIES



DEPARTMENT OF VETERANS AFFAIRS
Medical Center
3801 Miranda Avenue
Palo Alto CA 94304

166

In Reply Refer To:

April 10, 1991

Ruby Davis
RFD #7
Box 312
Greenville TN 37743

Dear Ms. Davis:

This letter is to confirm my permission for you to use excerpts of *The role of coping responses and social resources in attenuating the stress of life events*. Please send a copy of your dissertation when it is completed so we can see how you have used this material. Good luck with your work.

Sincerely yours,

A handwritten signature in cursive script that reads "Rudolf H. Moos".

Rudolf H. Moos, Ph.D.

RHM/dd

APPENDIX C
TENNESSEE STATE MAP SHOWING LOCATIONS OF
GENERAL AND SPECIALITY HOSPITALS

APPENDIX D
COVER LETTER



East Tennessee State University
College of Education

Department of Educational Leadership and Policy Analysis • Box 19000A • Johnson City, Tennessee 37614-0002 • (615) 929-4415, 4430

October 2, 1991

Dear Nurse Administrator:

As a nursing colleague and doctoral candidate, I am involved in conducting research that will lead to the completion of my doctoral dissertation. The focus of the study is to determine levels of occupational stress among nurse administrators and strategies utilized to deal with or manage stress.

Would you like to know more about occupational stress and the strategies nurse administrators utilize to deal with or manage this stress? With your assistance and participation, data will be gathered to provide vital information about stress among nurse administrators and their strategies for dealing with stress.


Nurse administrators from 146 general hospitals in Tennessee are being asked to participate in this project. A packet is enclosed that contains: (1) a questionnaire, (2) a stamped self-addressed postcard, and (3) a 9 x 12 stamped self-addressed envelope for return of the questionnaire.


The postcard, which requires your signature and the name of the hospital, should be mailed separately from the questionnaire. This procedure will serve to preserve anonymity of respondents, while still allowing me to determine who has completed the questionnaire. For confidentiality purposes, **DO NOT** place your name or the name of the hospital on the questionnaire or return envelope.

I realize there are heavy demands on your time and I am most appreciative of your participation in this project. Completion of the questionnaire requires approximately 10-15 minutes. **Please return the questionnaire by October 17, 1991.**

As a participant in this study, you will be provided a summary of the findings and conclusions. Mark the box on the card which indicates you would like to receive a summary of the findings. Should you have any questions feel free to contact me at (615) 639-2730 after 6:00 p.m.

Sincerely yours,


Ruby T. Davis, RN, MSN
Doctoral Candidate


Richard A. Manahan, Ed.D., CPA
Major Advisor

APPENDIX E
NURSE ADMINISTRATOR INSTRUMENT

SURVEY OF NURSE ADMINISTRATORS

This survey is intended for the nurse administrator to evaluate certain elements of the occupational environment and its effects. Part I focuses on demographic data. Part II relates to various situations which may be encountered by the nurse administrator in the work area. Part III consists of statements relevant to strategies utilized to deal with or manage job-related (occupational) stress.

PART I - DEMOGRAPHIC DATA

Instructions: Please complete the following items by placing a check () mark by the appropriate choice.

1. Your present position title is (please check one):
 - A Director, Nursing Service
 - B Vice President for Nursing Services
 - C Associate Hospital Director for Nursing
 - D Assistant Administrator for Nursing
 - E Other (please specify) _____

2. Facility classifications (please check one):

GOVERNMENT, NONFEDERAL A <input type="checkbox"/> State B <input type="checkbox"/> County C <input type="checkbox"/> City D <input type="checkbox"/> County-City E <input type="checkbox"/> Other (specify) _____	INVESTOR-OWNED FOR PROFIT A <input type="checkbox"/> Individual B <input type="checkbox"/> Partnership
NON-GOVERNMENT NOT-FOR-PROFIT A <input type="checkbox"/> Church Operated B <input type="checkbox"/> Other (specify) _____	
GOVERNMENT, FEDERAL A <input type="checkbox"/> Veterans Administration B <input type="checkbox"/> Army C <input type="checkbox"/> Navy D <input type="checkbox"/> Air Force E <input type="checkbox"/> Other(specify) _____	

3. Total bed capacity of your institution (check one):
 - A 99 beds or less
 - B 100 to 399 beds
 - C 400 beds or more

4. Your marital status (please check one):

A <input type="checkbox"/> Single (never married) B <input type="checkbox"/> Married)	C <input type="checkbox"/> Divorced D <input type="checkbox"/> Other _____
--	---

5. Your sex: A _____ Male; B _____ Female
6. Your age:
 A _____ 26-30 years E _____ 46-50 years
 B _____ 31-35 years F _____ 51-55 years
 C _____ 36-40 years G _____ 56-60 years
 D _____ 41-45 years H _____ Over 60 years
7. Total number of years of professional nursing experience
 A _____ Less than 5 years E _____ 21-25 years
 B _____ 6-10 years F _____ 26-30 years
 C _____ 11-15 years G _____ 31-35 years
 D _____ 16-20 years H _____ More than 35
8. Total number of years in a top level Nurse Administrator position (please check one):
 A _____ Less than 1 year G _____ 13-15 years
 B _____ 2-3 years H _____ 16-20 years
 C _____ 4-5 years I _____ 21-25 years
 D _____ 6-7 years J _____ 26-30 years
 E _____ 8-9 years K _____ More than 30 years
 F _____ 10-12 years (please specify) _____
9. Highest level of education completed (mark only one)
 A _____ Diploma in Nursing
 B _____ Associate Degree in Nursing
 C _____ Baccalaureate Degree in Nursing/Nursing Education
 D _____ Registered nurse with Non-nursing B.S. Degree
 E _____ Master in Nursing Degree
 F _____ Registered Nurse with Non-nursing Master Degree
 G _____ Doctoral Degree in Nursing
 H _____ Doctoral Degree in Non-nursing
 I _____ Other (please specify): _____
10. My organizational policy requires reporting directly to:
 A _____ Chief Executive Officer/Administrator/Medical Center Director
 B _____ Chief of Staff (physician)
 C _____ Other (please specify): _____
11. My work organization provides structured stress management workshops for its personnel on a regularly scheduled basis: A _____ Yes B _____ No
12. Considering all of the stress which you experience in your life, would you say this stress comes:
 A _____ Mostly from your work
 B _____ Mostly from life outside your work
 C _____ About the same amount of stress from both work and non-work sources

PLEASE NOTE

Copyrighted materials in this document have not been filmed at the request of the author. They are available for consultation, however, in the author's university library.

Appendix E, Nurse Administrator instrument,
Part II, 174-175
Part III, 176

University Microfilms International

APPENDIX F
FOLLOW-UP LETTER



East Tennessee State University
College of Education

Department of Educational Leadership and Policy Analysis • Box 19000A • Johnson City, Tennessee 37614-0002 • (615) 929-4415, 4430

October 23, 1991

Dear Nurse Administrator:

Approximately three weeks ago, I mailed a questionnaire to you seeking your opinion on stress levels for nurse administrators and the strategies utilized to deal with or manage occupational stress. During this past week, a telephone follow-up was conducted and I spoke with many of you personally regarding the questionnaire and the project.

The questionnaire was mailed to 146 nurse administrators. To date, the response rate has been very good. Since I am hopeful of obtaining a high percentage of returns, your input is extremely important in accurately representing the opinions of nurse administrators throughout the state of Tennessee. Your response will further assist in assuring a quality study.

If you have not completed the questionnaire, would you please do so TODAY. If you have misplaced the original questionnaire, or have any questions, please let me know. I will be more than happy to send you a duplicate questionnaire or discuss the survey with you. Please call me, collect, at 615-639-2730 after 6:00 p.m.

If you have already completed and returned the questionnaire, please accept my sincere thanks for participating in this project. Also, remember to return the postcard separately from the completed questionnaire.

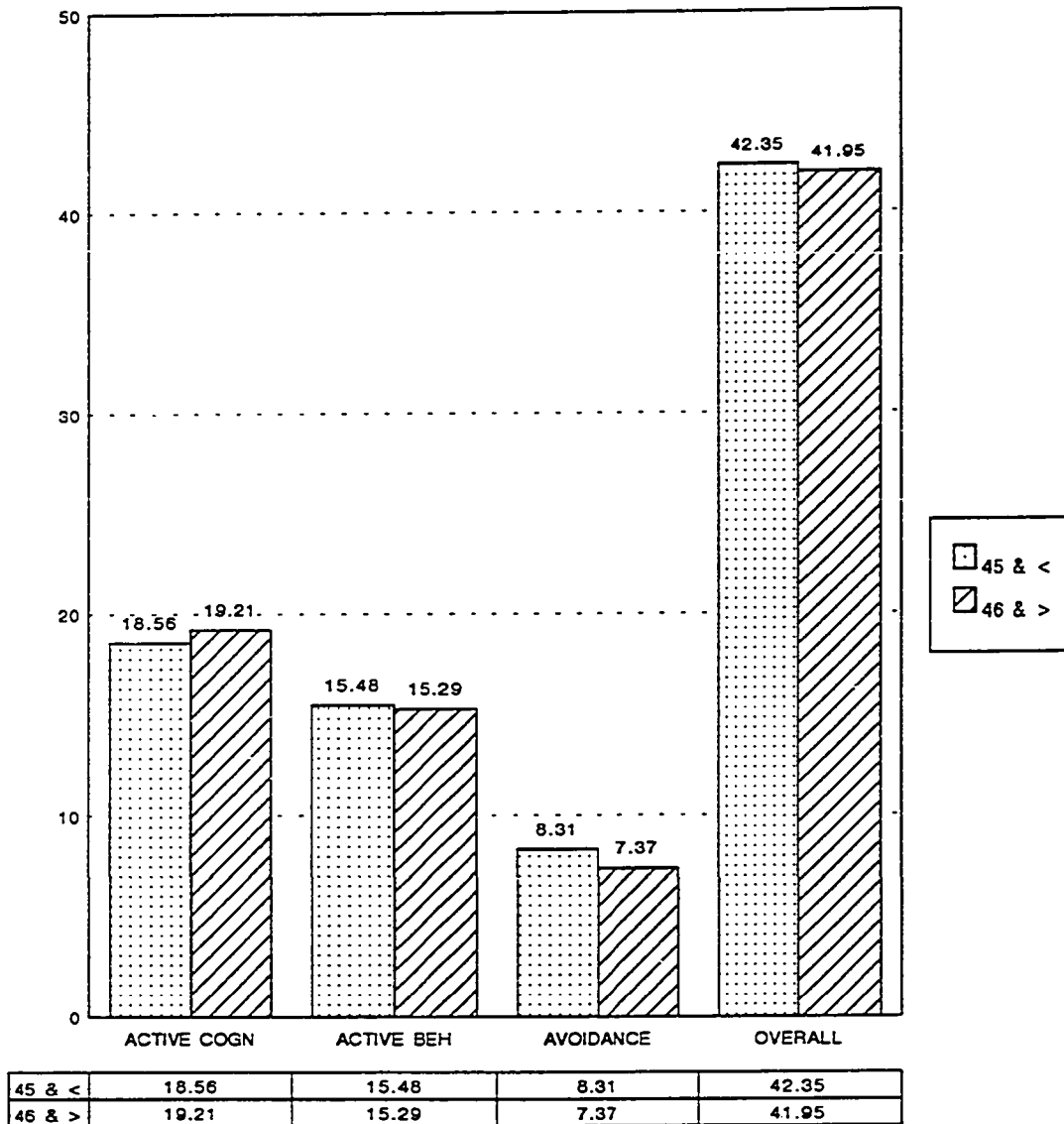
Sincerely yours,

Ruby T. Davis R.N., M.S.N.
Ruby T. Davis
Doctoral Candidate

APPENDIX G
BAR GRAPH OF MEAN SCORES FOR STRATEGIES BASED ON AGE
OF NURSE ADMINISTRATORS

STRATEGIES

AGE

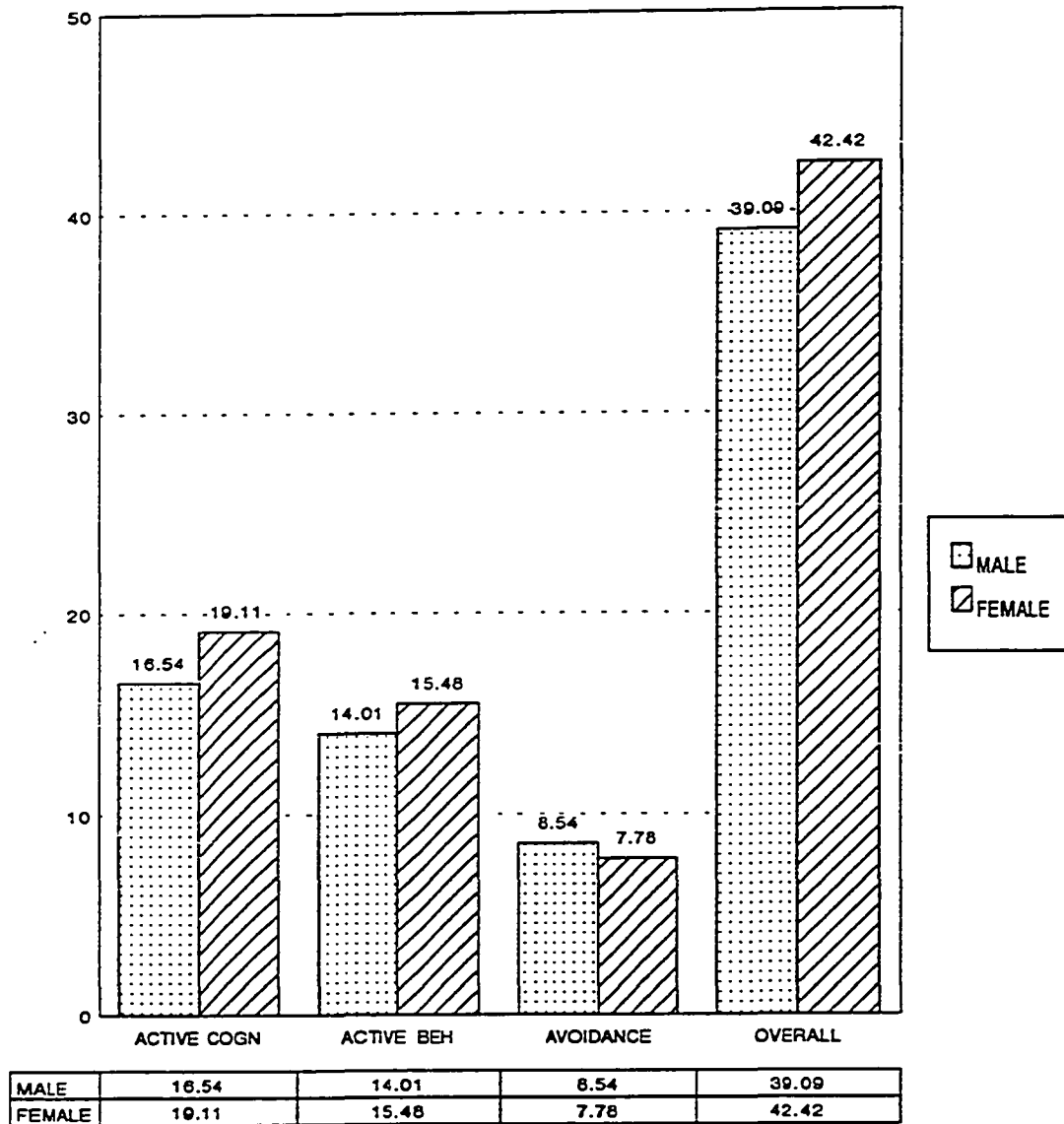


45 & <	18.56	15.48	8.31	42.35
46 & >	19.21	15.29	7.37	41.95

APPENDIX H
BAR GRAPH OF MEAN SCORES FOR STRATEGIES BASED ON GENDER
OF NURSE ADMINISTRATORS

STRATEGIES

GENDER



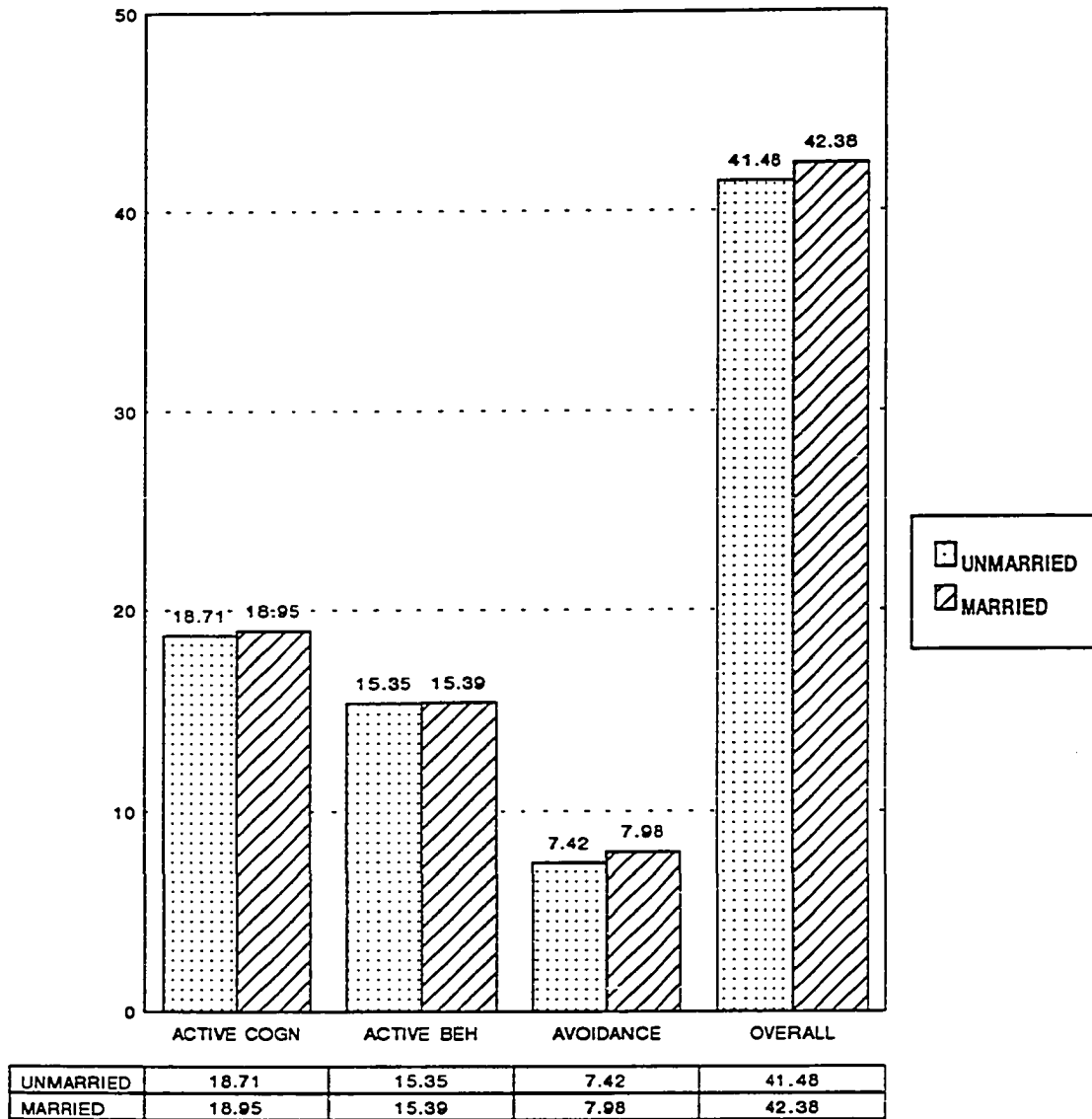
MALE	16.54	14.01	8.54	39.09
FEMALE	19.11	15.48	7.78	42.42

APPENDIX I

**BAR GRAPH OF MEAN SCORES FOR STRATEGIES BASED ON MARITAL
STATUS OF NURSE ADMINISTRATORS**

STRATEGIES

MARITAL STATUS

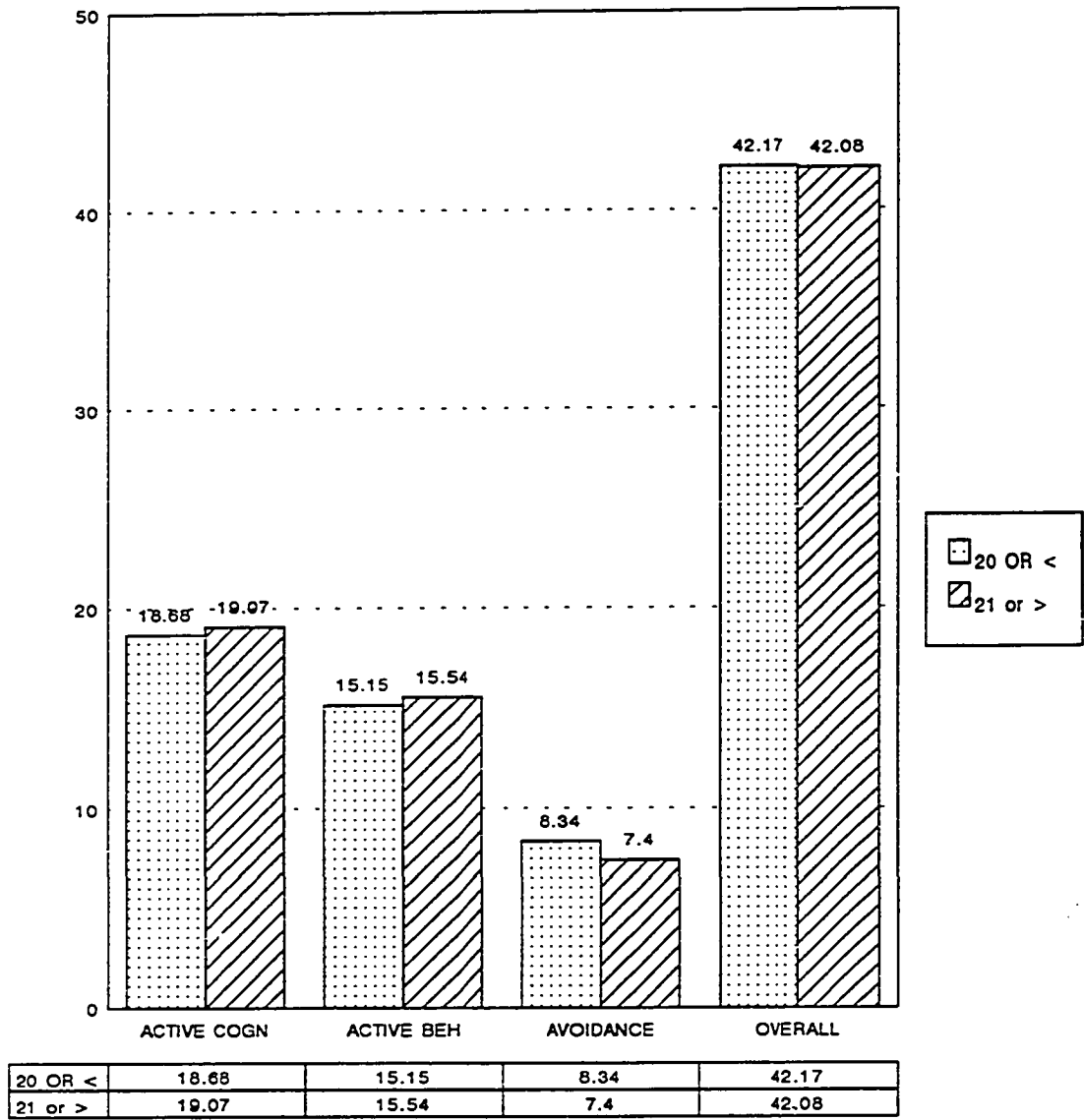


UNMARRIED	18.71	15.35	7.42	41.48
MARRIED	18.95	15.39	7.98	42.38

APPENDIX J
BAR GRAPH OF MEAN SCORES FOR STRATEGIES BASED ON
NURSE ADMINISTRATORS' YEARS OF PROFESSIONAL
NURSING EXPERIENCE

STRATEGIES

YEARS OF PROFESSIONAL NURSING EXPERIENCE

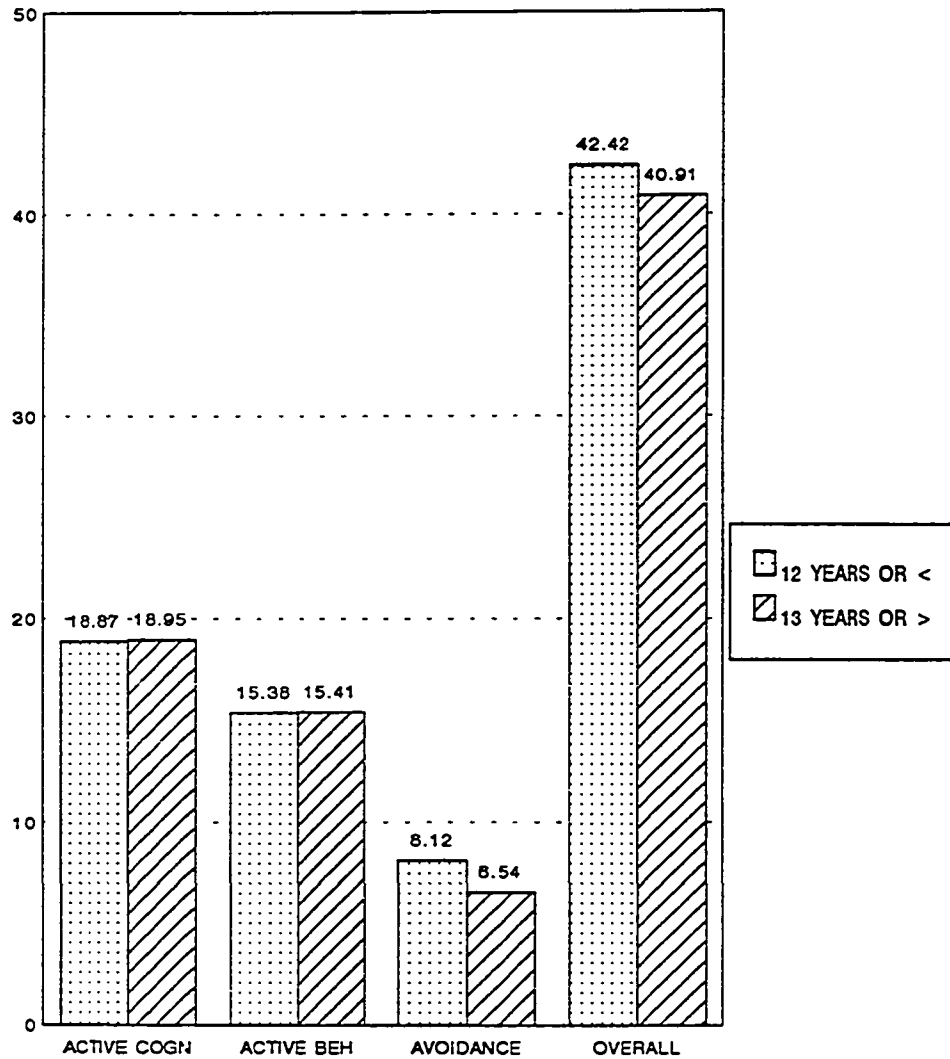


20 OR <	18.68	15.15	8.34	42.17
21 or >	19.07	15.54	7.4	42.08

APPENDIX K
BAR GRAPH OF MEAN SCORES FOR STRATEGIES BASED ON
NURSE ADMINISTRATORS' YEARS IN A TOP-LEVEL
NURSE ADMINISTRATOR POSITION

STRATEGIES

YEARS IN TOP LEVEL NURSE ADMINISTRATOR POSITION

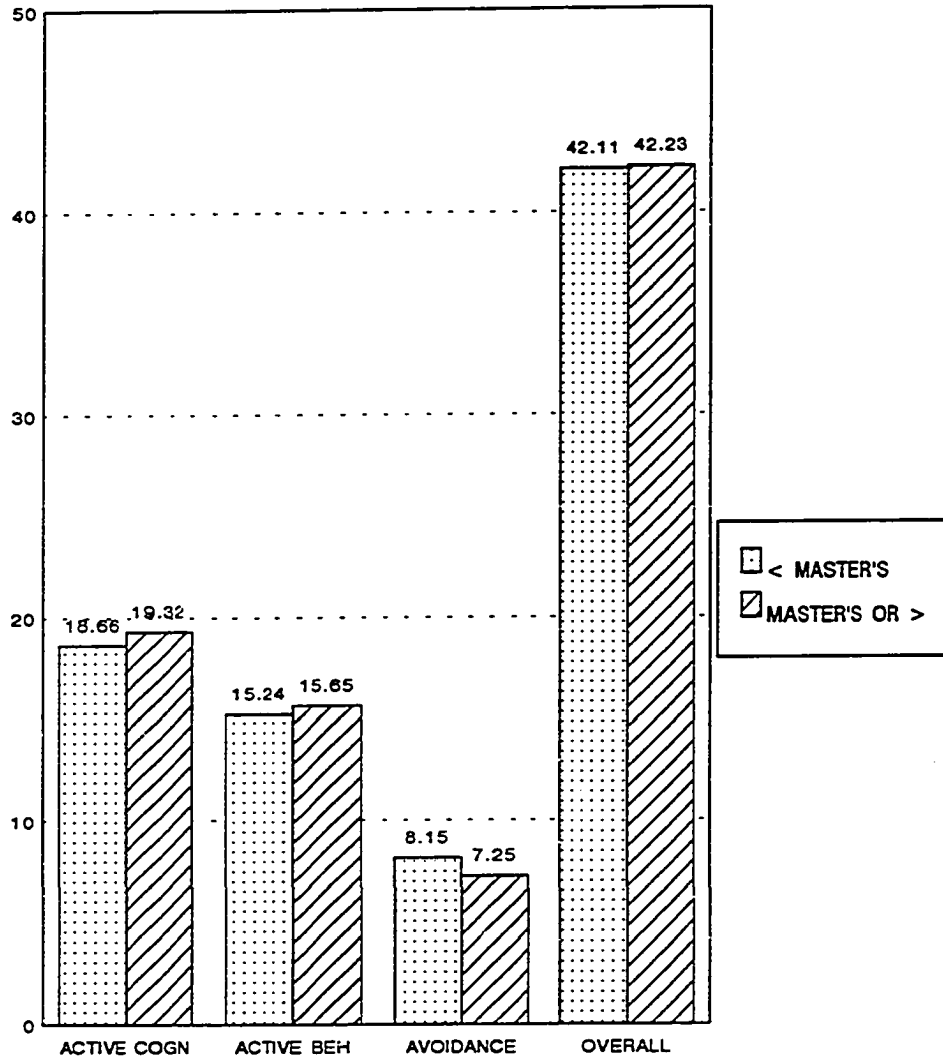


12 YEARS OR <	18.87	15.38	8.12	42.42
13 YEARS OR >	18.95	15.41	8.54	40.91

APPENDIX L
BAR GRAPH OF MEAN SCORES FOR STRATEGIES BASED ON
EDUCATIONAL ATTAINMENT OF NURSE ADMINISTRATORS

STRATEGIES

EDUCATIONAL ATTAINMENT

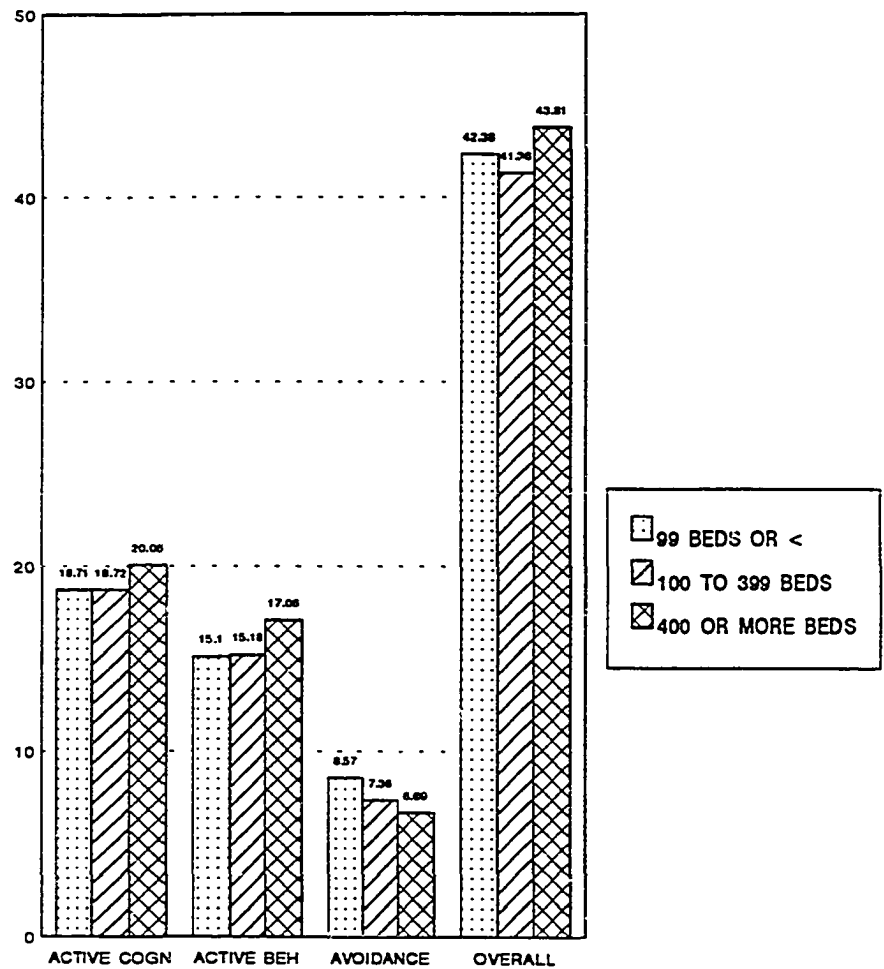


< MASTER'S	18.66	15.24	8.15	42.11
MASTER'S OR >	19.32	15.65	7.25	42.23

APPENDIX M
BAR GRAPH OF MEAN SCORES FOR STRATEGIES OF
NURSE ADMINISTRATORS BASED ON
HOSPITAL BED CAPACITY

STRATEGIES

HOSPITAL BED CAPACITY



99 BEDS OR <	18.71	15.1	8.57	42.38
100 TO 399 BEDS	18.72	15.18	7.36	41.36
400 OR MORE BEDS	20.06	17.06	6.69	43.81

APPENDIX N
INSTITUTIONAL REVIEW BOARD INFORMED CONSENT
FORM NOS. 106 AND 108

East Tennessee State University
Institutional Review Board
INFORMED CONSENT FORM

194

Form No. 106

SHORT REVIEW FORM (non-medical)

PRINCIPAL INVESTIGATOR: RUBY T. DAVIS

TITLE OF PROJECT: An Investigation of the Relationship Between Selected Demographic Variables and Occupational Stress Among Nurse Administrators in General Hospitals.

1. Indicated below are the (a) purposes of this study, (b) the procedures to be followed and (c) the approximate duration of this study. The purpose of this study is to determine the level of occupational stress among nurse administrators in general hospitals and identify strategies utilized by nurse administrators to deal with or manage occupational stress. Hypotheses testing for demographic variables will be conducted. Nurse administrators in general hospitals throughout Tennessee will be requested to complete a questionnaire which should require 10 to 15 minutes. Approximate total time for the study will be from September, 1991, to May, 1992.
2. Discomforts, inconveniences, and/or risks that can reasonably be expected are: Expected inconveniences and/or risks are minimal. Information or data will be collected through a mail survey. This study is not experimental; no variables are being manipulated.
3. I understand the procedures to be used in this study and the possible risks involved. If I have any further questions about this study, I understand that I can call RUBY T. DAVIS at (w) 615-926-1171 X7655 or 615-639-2730 at home who will try to answer any additional questions that I might have. I understand that I will receive a copy of this form to read at leisure.

I also understand that while my rights and privacy will be maintained, the Secretary of the Department of Health and Human Services and the ETSU Institutional Review Board do have free access to any information obtained in this study should it become necessary and I freely and voluntarily choose to participate. I understand that I may withdraw at any time without prejudice to me. I also understand that while East Tennessee State University does not provide compensation for medical treatment other than emergency first aid for any physical injury which may occur as a result of my participation in this study, claims arising against ETSU or any of its agents or employees may be submitted to the Tennessee Claims Commission for disposition to the extent allowable as provided under TCA Section 9-8-307. Further information concerning this may be obtained from the Chairman of the Institutional Review Board.

_____	_____
Date	Signature of Volunteer
_____	_____
Date	Signature of Parents or Guardian
_____	_____
Date	Signature of Witness (if applicable)
_____	_____
Date	Signature of Investigator

IRB FORM 108

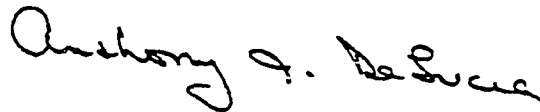
PROTOCOL NO. 91-018s

EAST TENNESSEE STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD


PROJECT TITLE: An Investigation of the Relationship Between Selected
Demographic Variables and Occupational Stress Among Nurse
Administrators in General Hospitals

PRINCIPAL INVESTIGATOR: Ruby Tweed Davis

The Institutional Review Board has reviewed the above-titled project on September 25, 1991 with respect to the rights and safety of human subjects, including matters of informed consent and protection of subject confidentiality, and finds the project acceptable to the Board.



Anthony J. DeLucia
Chairman, IRB

This project has received a waiver of informed consent. 

VITA

RUBY TWEED DAVIS

PERSONAL DATA: Place of Birth: Madison County, North Carolina
 Marital Status: Married with four children

EDUCATION: Fort Sanders Presbyterian Hospital School of Nursing,
 Knoxville, Tennessee, Diploma in Professional
 Nursing, 1953

The University of Tennessee, Knoxville, Tennessee,
 1977, B. S. in Education with Honors

University of Tennessee, Knoxville, Tennessee, Master
 of Science in Nursing Degree (Primary Care Nursing and
 Nursing Administration, 1980

East Tennessee State University, Johnson City, Tennessee,
 Administration, Ed.D, 1992

PROFESSIONAL
 EXPERIENCE:

Evening Nursing Supervisor, Laughlin Clinic, Greeneville,
 Tennessee, 1953-1955

Staff Nurse, Charge Nurse, Supervisor, Subsidiary
 Personnel, and Assistant Director Nursing Service,
 St. John's Hospital, Cleveland, Ohio, 1955-1963

Classroom Instructor and Clinical Nursing Supervisor,
 Parma School of Practical Nursing, Parma, Ohio,
 1963-1965

Staff and Relief Charge Nurse, Obstetrics (labor
 and delivery), Cleveland Metropolitan General Hospital,
 Cleveland, Ohio, 1965-1967

Assistant Director Nursing Service (2 years) and Director
 of Nursing Services (8 years), Laughlin Memorial
 Hospital, Greeneville, Tennessee, 1967-1978

Relief Night Nursing Supervisor, Greeneville Hospital,
 Inc., Greeneville, Tennessee, 1978-1980

Instructor, Nursing Education (with collateral
 assignment as EEO Counselor since July 1985),
 Veterans Affairs Medical Center, Mt. Home, Tennessee,
 1981-present

Adjunct faculty appointment, East Tennessee State
 University School of Nursing, 1987-present

SPECIAL PROJECTS Attended the National VA AIDS/HIV Train the Trainer Program, Birmingham, Alabama, August 9-11, 1988

Worked with special committee to assess educational needs of Licensed Practical Nurses working in nursing home settings in Northeast Tennessee in 1990. As a result of the survey, a course curriculum, "Bridging the Gap for Licensed Practical Nurses Assuming Charge Positions in Nursing Home Settings," was developed and presented at the Greeneville/Greene County Center for Technology, Greeneville, Tennessee, 1991

Special Assignment, VA/ETSU School of Nursing Project, Proposal Development, February 1991-September 1991

PUBLICATIONS Co-author, "Occupational Hazards: Nursing Service Personnel," Professional Safety (P.S.), official publication of the American Society of Safety Engineers, August, 1989, pp. 9-11. The Joint Commission for Accreditation of Health Care Organizations and AETNA Insurance Company obtained permission to use this article for inservices and seminars

PAPER PRESENTATIONS Co-presenter of a paper, "Geriatrics Education Centers: An analysis of Policy Implementation," at the Southern Gerontological Society Conference, Atlanta, Georgia, April, 1988

LICENSURE AND CERTIFICATION Professional Nursing License for State of Tennessee, and an inactive license for the State of Ohio
American Heart Association CPR-BLS Instructor and Instructor Trainer Certification, 1990

PROFESSIONAL MEMBERSHIPS American Nurses Association
Tennessee Nurses Association, District 18
National Nursing Honor Society, Sigma Theta Tau, East Tennessee State University
National Organization for VA Nurses (NOVA)
Phi Delta Kappa, East Tennessee State University Chapter
Kappa Delta Phi, East Tennessee State University Chapter

COMMUNITY & CIVIC AFFILIATIONS Eastern Star, Beersheba Chapter #449, Greeneville, Tennessee
Disabled American Veterans Auxiliary, Greene County Chapter #42, Greeneville, Tennessee
Sherills Cove Homemakers Club, Greeneville, Tennessee
Mt. Home, Tennessee, VAVS Volunteer (visits veterans in community nursing homes)