COPING STRATEGIES OF INTENSIVE CARE AND NONINTENSIVE CARE PEDIATRIC NURSES IN RESPONSE TO SITUATIONAL AND ENVIRONMENTAL STRESSORS

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ABSTRACT

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The purpose of this study was to identify coping behaviors which enabled pediatric intensive care and nonintensive care nurses to cope effectively with stress as evidenced by a low degree of burnout. A nonexperimental cross-sectional explanatory survey was used to identify specific types of coping behaviors used by pediatric nurses and burnout levels. In addition, the study was designed to determine what characteristics are predictive of burnout. A nonprobability sample of 41 intensive care and 33 nonintensive care nurses participated in the study. Subjects completed a personal information sheet, Blake's Coping Scale, and Maslach's Burnout Inventory. Data were analyzed by descriptive statistics, one-way analysis of variance, Pearson's correlation coefficient, and multiple regression analysis. There was no significant ($p \leq .05$)

difference in coping strategies and burnout levels for intensive care pediatric nurses as compared to nonintensive care pediatric nurses. A significant ($p \leq .05$) correlation was found between basic nursing educational level and coping subscale scores for emotional avoidance and emotional response. Of the 16 nurses in the study who met the criteria for low degree of burnout, 14 used rational action as their coping strategy. The overall sample used professionalism as their coping strategy. The most frequently used ineffective coping strategy was fantasized action. Time of employment on present unit was found to be the demographic variable which best predicted burnout levels in this study.

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CHAPTER 1

INTRODUCTION

The physical and emotional demands placed on health care providers require the development of specific behaviors to cope effectively with these demands. The stress associated with the delivery of health care has negative consequences which ultimately impact on the quality of care administered by health care providers (Gribbins & Marshall, 1982; Hay & Oken, 1972; Magill, 1982; Maslach, 1976).

Nurses who work in critical care units are highly skilled practitioners that function in an environment characterized by a high level of occupational stress. These nurses are provided with inservice programs to give them the expertise to care for critically ill clients, use highly technical equipment, and monitor patients in life and death situations. However, little has been done to identify the types of behaviors used by intensive care nurses who cope with their stress filled environment in a positive manner.

How successfully intensive care nurses cope with their stressful work environment depends on the behaviors selected in response to each situation. The behaviors selected are the individual's attempt to avoid the consequences of stress. Hay and Oken (1972) stated the psychological stress

encountered by intensive care workers was similar to the stress of soldiers in combat. Lack of preparedness for coping with the demands of a stressful environment eventually leads to alterations in health with dire consequences for the nurse, patient, and hospital, unless meaningful interventions are instituted (Edelwich, 1980; Magill, 1982; Maslach, 1976; Patrick, 1981). There is no way to separate the quality of patient care from the physical and emotional well being of those who provide that care. Nurses who work with critically ill children are especially vulnerable to the consequences of stress. The pediatric patient's age, prognosis, and possible death all contribute to intensify the stress already present in the intensive care environment (Marshall & Kasman, 1980). Therefore, the behaviors selected by nurses in response to stress are highly significant.

If nurses are to be encouraged to select effective coping behavior, they must first be made aware of what types of behaviors need to be activated in response to stressors. If stress is not dealt with effectively at an early stage, the stressing events become magnified and burnout is one possible negative outcome. This study was conducted to determine the relationship between coping strategies used by pediatric nurses in response to stress and burnout level.

Problem of Study

Coping behaviors and burnout levels of intensive care pediatric nurses compared to nonintensive care pediatric nurses was the focus of this study. This study was designed to identify specific types of coping behaviors used by pediatric nurses in response to environmental and situational stressors and to determine if these behaviors differed between nurses employed in intensive care and nonintensive care pediatric units. Burnout levels were measured to determine if the frequency of burnout was related to the coping strategies selected by the pediatric nurses in response to environmental stressors. In addition, the study was designed to determine what characteristics of pediatric nurses are predictive of burnout. The purpose of this study was to identify coping behaviors which enabled pediatric intensive care and nonintensive care nurses to cope effectively with stress as evidenced by a low degree of burnout.

Rationale for the Study

The assumption of increasing responsibilities by nurses in intensive care units has increased their need to develop strategies that reduce the impact of situational and environmental stressors. When stress is managed poorly by nurses, the consequences may be poor nursing care, job

dissatisfaction, and diminished potential for further professional employment (Oskin, 1979). Nurses are faced with the dilemma of providing high level care while at the same time maintaining their own personal psychological well being (Gardner, Parzen, & Stewart, 1980). The outcome of patient care activities depends not only on the technical expertise of care providers, but also on their psychological state as well (Hay & Oken, 1972). The types of stressors encountered in the intensive care environment have been well documented in the literature (Gentry & Parkes, 1982; Gribbins & Marshall, 1982; Hay & Oken, 1972; Jacobson, 1983). However, the identification of behaviors which allow the individual to cope successfully with this environment are not clearly defined. Coping refers to strategies activated to deal with situations or events perceived as a threat by the individual. Crisis and stressful life events that are managed by effective coping teach the individual behaviors that will strengthen the ability to problem solve. According to Walker (1982), the rate of illness among intensive care nurses was higher than nonintensive care nurses, and many nurses exhibited behaviors indicative of burnout.

The relationship of stressful life events to coping methods used in mental-illness and wellness behaviors was

investigated by Bell (1977). The population in Bell's study was comprised of an experimental group of 30 psychiatric patients and a control group of 30 subjects with no history of psychiatric illness. Bell found that people with mental-illness behaviors used more short-term methods of coping. Bell suggested there was a need to explore alternate coping strategies as a step towards the prevention of illness behavior.

Of the 79 critical care nurses in a study conducted by Oskin (1979), 45 (57%) were identified as being at risk in regard to their health as indicated by scores on the Rahe Life Change Event Scale. The relationship between coping behaviors and stress scores was not addressed. Therefore, the question of what strategies were used by the 34 who were not at risk remained unanswered. The results of those two studies clearly delineated the need to determine the impact of coping behaviors on wellness. Gorney (1985) stated that "the nurse divides her time between maintaining personal equilibrium while providing patient care. Comprehensive and individualized care requires a nurse who is in a state of equilibrium" (p. 44).

Gentry and Parkes (1982), who reviewed literature on stress in intensive care and nonintensive care units written between 1971 and 1981, found only a limited number of

research studies that assessed perceptions of the intensive care work environment and the nature of demands made on intensive care nurses. The perceptions were measured by outcomes such as psychological distress, work satisfaction, and performance. Gentry and Parkes recognized the need for research that was focused on the coping strategies which impacted on efficiency and well being of health care providers. According to Muldary (1983), "there is more information available about stress (the condition) than about coping (the behavior)" (p. 128). Muldary supported the need to focus on the issue of coping behaviors rather than the conditions that caused the behavior. Cronin-Stubbs and Rooks (1985) noted that research which was focused on the impact of work-related stressors of nursing in intensive care and nonintensive care settings had yielded inconsistent results. Retention of intensive care nurses has been affected by the failure to identify the impact of work-related stressors on nursing role and function.

Consolvo (1979) identified stress as an important factor in retention of neonatal intensive care nurses. She addressed the decline in quality of care when administered by inexperienced nurses and the cost effectiveness of nurse retention as significant issues. According to Consolvo, the cost, in 1979, for the orientation of an intensive care

nurse was $2,900 per month. Therefore, retention of intensive care nurses can be viewed as an issue in the cost effective delivery of quality patient care.

A literature survey by Gentry and Parkes (1982) indicated the dropout rate for intensive care nurses was higher than those of nurses from other units. The survey revealed an even more disturbing fact concerning what happened to the nurses who dropped out. Intensive care nurses who left their units tended to leave the profession of nursing rather than relocate to another unit. Research on retention and stress responses of pediatric nurses has been limited.

The majority of the literature that was focused on stress in the pediatric nurses was also focused on the neonatal intensive care nurse (Consolvo, 1979; Duxbury & Thiesson, 1979; Gribbins & Marshall, 1982; Jacobson, 1983). Gribbins and Marshall (1982) noted "there is little information in current literature about how any one group within the neonatal ICU perceives stress and develops coping strategies for remaining productive" (p. 865). Lack of information has been the primary reason the question of maladaptive coping and burnout as a negative consequence continued to surface. The rapid turnover of intensive care workers indicated a need to look more closely at factors which impact on this phenomena.

Increased anxiety levels were identified by McHenry (1981) as a possible factor in the development of the burnout syndrome among nurses who staff intensive care units. K. Miller (1983) stated that "burnout is one of the most frequently talked about reasons that nurses leave pediatric critical care" (p. 216). The study of burnout is important to those people who are committed to the provision of optimal patient care. Cronin-Stubbs and Rooks (1985) pointed out that the physical and psychological status of the nurse was important to the delivery of quality care. Nurses who work in intensive care units have been considered prime candidates for burnout.

Keane, Ducette, and Adler (1985) found no difference in levels of burnout in intensive care and nonintensive care nurses. However, intensive care nurses who were characterized as being "hardy" had lower burnout levels than nurses not possessing this attribute. According to Kobasa (1979), personality characteristics of a person who would be considered hardy are commitment, control, and challenge. Hardy individuals were actively involved in events, perceived themselves as influencing situations, and viewed change as normal and an incentive for growth rather than a threat. These hardy individuals' behaviors might be termed indicators of effective coping. The decisions made by

nurses who cope ineffectively and demonstrate varying degrees of burnout might be considered questionable in a stress-filled environment. Intensive care nurses are expected to make critical decisions in stressful situations.

The requirement that intensive care nurses make rapid decisions which ultimately impact on patient welfare has raised questions concerning factors which hinder decision making (Bourbohnais & Baumann, 1985). Holsti (1979) stated that "any crisis produces stress for the decision maker. This stress results in increased cognitive rigidity and erosion of general cognitive abilities including creativity and the ability to cope with complexity" (p. 45). Maladaptive coping leaves the decision maker in a cognitive state where errors in judgment and accidents increase in frequency with many potentially dangerous outcomes. Nursing administrators must be made aware of these negative outcomes if they are to be expected to make changes in the health care environment (Bourbohnais & Baumann, 1985). Hay and Oken (1972) suggested that nursing administrators and supervisors examine the intensive care environment to seek ways of reducing stress. There has been a need for nursing administrators to become more aware of the multidimensional nature of stress in the intensive care environment.

Marshall, Kasman, and Cape (1982) identified the difficulties of working in an intensive care unit as encompassing physical, emotional, and moral/ethical components. They addressed the need for health professionals to help themselves. Nursing administrators were urged to become more sensitive to the needs of their intensive care nursing staff and prevent burnout through the provision of the necessary resources to combat the problem.

The information from this study can be used to identify those coping behaviors which need to be reinforced and promoted and those which must be modified to mitigate maladaptive coping and associated negative consequences. Identification of coping strategies which mediate burnout is only the first step in resolution of the problem. The knowledge gained must be used to assist nurses in the development of effective coping behaviors. "Knowledge of factors that relate to burnout and methods for preventing its occurrence can benefit those vulnerable to the phenomena, institutions impaired by employee burnout and recipients of health care" (Cronin-Stubbs & Rooks, 1985, p. 31).

Conceptual Framework

The Blake coping adaptation model was developed to provide a conceptual framework to guide the application of the nursing process when assisting clients in the selection

of behaviors that lead to adaptation and health. The theories underlying the model are based on the works of Lazarus (1966), Caplan (1964), Roy (1976), and Selye (1976). The Blake model includes the concepts of coping and adaptation as they impact on the individual's health status.

The Blake Coping-Adaptation Model

The Blake coping adaptation model (Figure 1) depicts the coping process which takes place in response to interaction with stressors in the internal and external environment. Resultant outcome behaviors from the interactional process indicate whether adaptation has taken place (Folkman & Lazarus, 1979; Lazarus & Folkman, 1984). The basic metaparadigms underlying Blake's coping adaptation model are person, environment, health, and nursing. The four concepts as used in the model are defined (Table 1).

Coping as represented in the model is comprised of action-oriented and interphysic strategies for dealing with stress (Lazarus, 1966). Coping has been conceptualized as a dynamic process that changes in response to the individual's perceptions of events. According to Lazarus and Folkman (1984), coping implies effort and purposeful behavior by the individual. Coping behaviors deal implicitly or explicitly with a problem, crisis, or threat. "Coping is what one does about a problem to bring about relief, quiescence and

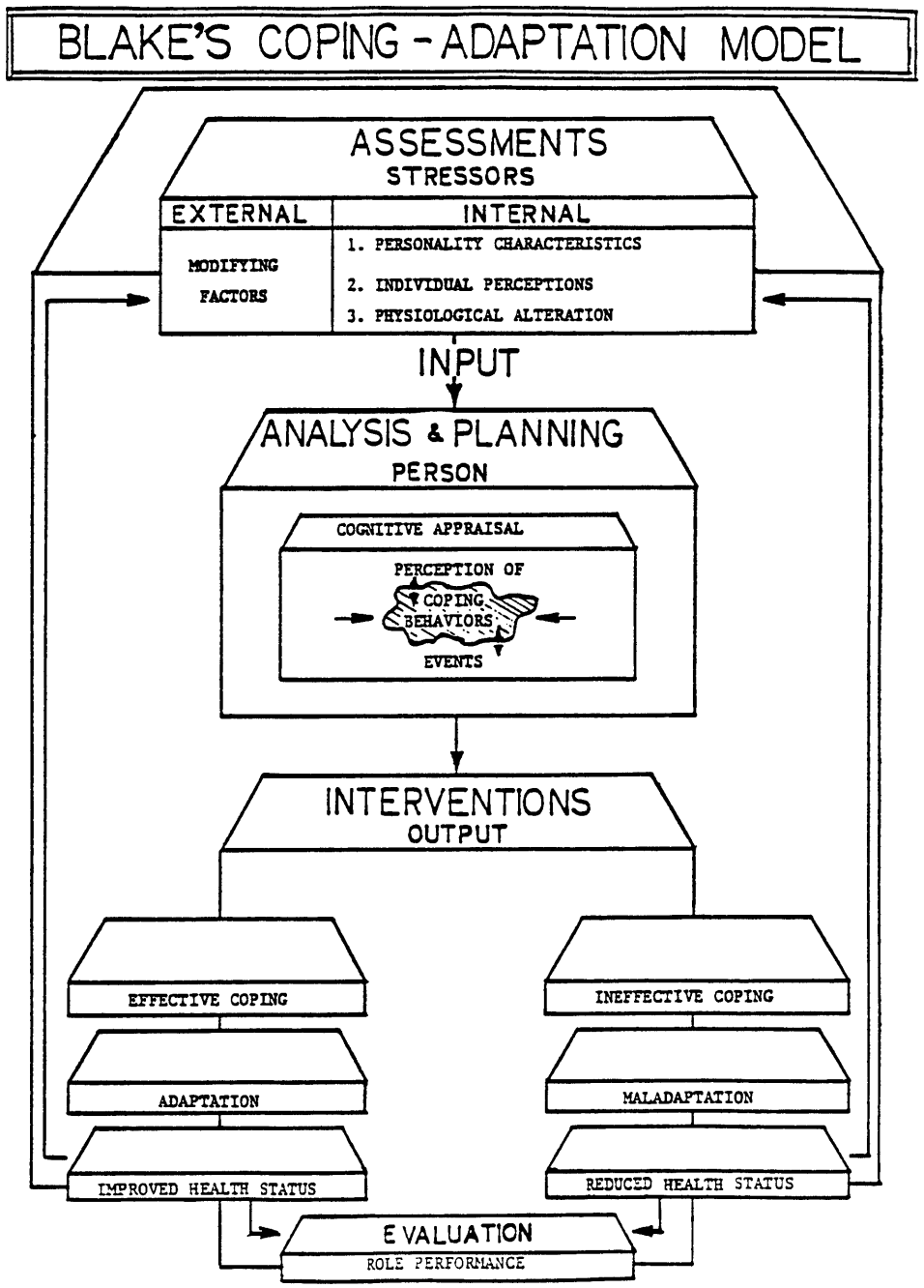

Figure 1. The Blake Coping Adaptation Model

Table 1

Basic Metaparadigms Underlying Blake's Coping-Adaptation Model

Type of Metaparadigm	Description
Environment	External and internal stimuli which a person may encounter that impact and influence life.
Health	Adaptive changes in the system (person) that lead to effective coping and result in behaviors that promote or maintain an optimal level of wellness for the individual.
Nursing	Assisting clients in the utilization of those behaviors which allow the individual to cope effectively with environmental stressors, adapt to change, and maintain or regain an optimal level of wellness.
Person	A human dynamic open system which changes as a result of input from the environment. Output behaviors may or may not reflect adaptive change in health status.

equilibrium" (J. Miller, 1983, p. 16). Coping is represented in the model as a positive outcome of an interactional exchange between person and environment. If the person copes with stressors in a healthy way, maladaptation can be prevented (Robischon, 1967). Maladaptation as defined in the model is the inability to cope and maintain a state of balance. Lazarus (1966) viewed coping as a process which

involves the selection of behaviors in response to stressors. Coping represents the person's attempt to master problems with the environment. An individual's perception of a stressful situation or event impacts on the coping behaviors selected and influences whether outcome behaviors reflect adaptation or maladaptation.

The model depicts the person as a dynamic open system that changes, as a result of environmental input, to cope with stressors. Successful interaction with the environment leads to enhancement and growth of the individual while preventing injury or harm. Information from both the internal and external environment is processed within the system, and output either maintains the system in a steady state or gives feedback that changes subsequent input (Roy, 1976).

The external environment in the Blake model includes demographic factors which impact on behavior. According to Pender (1982), characteristics such as "age, sex, race, ethnicity, education, and income serve as modifying factors for health behaviors" (p. 71). Internal environmental factors include personality characteristics, individual perceptions, and physiological alterations. The person uses cognitive appraisal to evaluate the environment and formulate perceptions of an event prior to the selection of coping behaviors.

In the model, input from environmental stressors is cognitively appraised by the individual in terms of actual or potential threat. Cognitive appraisal has been defined in the model as a perceptual process that distinguishes harmful events from beneficial or insignificant ones. The subjective meaning of the stressful situation or event plays an important role in determining perceptions and thereby influences the nature and degree of coping behaviors (Aquilera & Messick, 1982). Lazarus and Folkman (1984) viewed cognitive appraisal as the key to responses, behavioral outcomes, and their consequences. While the initial process is cognitive, a total response encompasses emotional and physiological responses as well (Sutterley & Donnelly, 1982). As depicted in the model, coping appraisal and perception of events lead to coping choices which in turn determine adaptation to the environment.

Cognitive appraisal has been subdivided into primary appraisal and secondary appraisal. In primary appraisal stressors are identified, while secondary appraisal involves selection of coping behaviors that will most likely be successful in mediating stress (Muldary, 1983). There are several personal and situational factors which influence cognitive appraisal. Two of the factors which influence appraisal are commitment and beliefs. Commitment is present

when an event is of importance to an individual. Beliefs are influenced by the individual's perception of control of a situation or event (Lazarus & Folkman, 1984). Coping behaviors which result from perceptions influence health status and adaptation to the environment.

According to the Blake coping-adaptation model, system output behavior can either be effective in mediating stress and result in an improved health status or ineffective with a resultant reduction in health status. Effective coping as reflected in the model is characterized by an individual's ability to explore issues realistically and search for information. Persons who cope effectively are able to express their feelings and tolerate frustration. These persons seek help from others and break down problems into manageable parts. Individuals who cope effectively attempt to master situations while accepting those things which cannot be changed (Caplan, 1964).

Individuals who cope ineffectively attempt to manage stress alone without the use of a support system or available resources. Most feelings are internalized rather than openly expressed. Cognitive appraisal by individuals who cope ineffectively is hindered by distorted perceptions of problems and events. They are generally inflexible and resistant to change (Caplan, 1964). In the Blake model,

effective coping and adaptation lead to an improved health status. An improved health status has been defined in the model as a state of wellness where a person functions at an optimal level and moves toward attainment of potential through integration of health promotion behaviors into the person's lifestyle (Pender, 1982). Caplan (1964) described coping as a component of the concept of adaptation. Caplan viewed coping as adaptation under difficult conditions.

Adaptation represents adjustments made by the client in response to external and internal stressors in order to maintain or reestablish balance or a steady state (Roy, 1976). Adaptation has been defined in the the Blake model as the adjustment made by a person in response to environmental stressors that enable coping with changes and maintenance or restoration of a state of balance. Difficulties in adaptation result when stressors overwhelm the individual. Selye (1976) stated that "an essential feature of adaptation is the delimitation of stress to the smallest area capable of meeting the requirements of the situation" (p. 515). Adaptation problems are encountered when the person's responses are inadequate to meet the demands of the situation or event. If the individual fails to keep stressors limited to a manageable level, maladaptation occurs. According to Lazarus, Cohen, Folkman, Kanner,

and Schaefer (1980), the effectiveness with which the individual copes will either increase or decrease the risk of maladaptive illness.

In Blake's model, a reduced health status was viewed as a direct consequence of maladaptation. This reduction is characterized by a decline in personal well-being and the inability to function at an optimal level. Reduced health status has an impact on a person's role performance. Role performance was defined in the model as the ability of individuals to perform effectively in their environment (i.e., job performance, interpersonal relationships, family roles).

Application of Blake's Coping-Adaptation Model to the Nursing Process

The Blake model is implemented within the framework of the nursing process. The steps of the nursing process as defined in the model are shown in Table 2. The focus of assessment in the model is the identification of internal and external stressors that impact a person's life and choice of behaviors in response to stress (Roy, 1984). Data on personality and behavior can be analyzed to establish a nursing diagnosis and plan meaningful interventions. The etiologic component of the nursing diagnosis results from the internal and external stressors which supply information that influences the selection of coping behaviors.

Table 2

Definitions of the Four Steps of the Nursing Process as Portrayed in Blake's Coping-Adaptation Model

Steps of Nursing Process	Description
Assessment	Identification of internal and external environmental stressors and choices of behaviors in response to stressors which input into the system and trigger change or adjustment or have to potential to initiate change.
Analysis and Planning	Identification of those behaviors that the client manifested in response to the environmental input and the formation of plans to change those that were ineffective.
Intervention	Interventions are focus on the modification of stressors when possible or helping the client to revise present behaviors that are ineffective. Nurses work with clients and their support systems to motivate and encourage the use of health promotion behaviors.
Evaluation	Evaluation will be based on the individual's ability to maintain an effective role performance in the environment.

The response component of the nursing diagnosis would be output from the system, namely effective or ineffective coping behaviors. Their recognition of adaptive and maladaptive coping behaviors will enable nurses to intervene appropriately at the time that the client is trying to establish coping patterns. Nursing interventions would

assist the client in the initiation of behaviors that would promote coping and increased health status. The behaviors selected would be evaluated as to whether they resulted in an increased or reduced state of health. A measurement of reduced health status, such as a burnout scale, can be administered to determine the effectiveness of coping behaviors.

Assumptions Underlying Blake's Coping-Adaptation Model

The development of the Blake coping-adaptation model was based on the following assumptions:

1. Man is an open system that changes in response to interaction with the environment (Roy, 1976).
2. Coping refers to strategies for dealing with threat (Lazarus, 1966).
3. Cognitive or subjective meaning of a stressful event plays a major role in determining the individual's choice of coping behaviors (Lazarus & Folkman, 1984).
4. Stressful life events which are managed by effective coping strengthen emotional and problem-solving abilities (Caplan, 1964).
5. Choices made by the individual influence health (Caplan, 1964).

Application of Blake's Coping-Adaptation Model

The Blake coping-adaptation model was used as the framework for this study to identify coping behaviors used by pediatric nurses in response to situational and environmental stressors. Data were collected on demographic modifying factors and subjects' responses to a stressful situation. The subjects' responses to the situation were categorized as ineffective or effective as indicated by a score on the Blake Coping Scale. According to Gentry and Parkes (1982),

> the types of coping strategies used by nurses may be determined by personality, nature of the stress events and/or the nurses' perception as to whether adaptation does or does not take place. These perceptions will impact on the nurse's health status and consequently role performance. (p. 46)

Frequency of burnout as measured by the Maslach Burnout Inventory (Maslach & Jackson, 1986) was used as an indicator of a reduced health status. A reduced health status was defined in the model as a decline in a person's wellness state characterized by functioning at a less than optimal level and the failure to incorporate health promotion behaviors into daily life activities. Maslach (1976) stated that "burnout plays a major role in the delivery of health service" (p. 16). Burnout was viewed as a negative consequence of stress and thus has an undesirable impact on the nurse's

ability to function effectively in the role of health care provider. The Blake model was used as the basis for investigating the relationship of coping behaviors by pediatric intensive and nonintensive care nurses to their adaptative status as characterized by a high or low degree of burnout.

Assumptions

The following assumptions were used as a foundation for this study:

1. Person is an open system that changes in response to interaction with the environment (Roy, 1984).
2. Coping choices made by the individual influence health (Caplan, 1964).
3. Equilibrium and maintenance of wellness are dependent upon the person's ability to cope with stressors (Bell, 1977).
4. The effectiveness with which the individual copes will increase or decrease the risk of maladaptive illness (Lazarus et al., 1980).

Research Questions

The following research questions were formulated for use in this study:

1. Do the coping strategies used by pediatric nurses in intensive care units differ from those used by pediatric nurses in nonintensive care units?

2. What is the level of burnout in pediatric nurses who work in intensive care units compared to pediatric nurses who work in nonintensive care units?
3. What coping strategies utilized by pediatric nurses in intensive care and nonintensive care pediatric units are associated with low burnout levels?
4. Are age, education, and experience predictive of burnout?

Definition of Terms

Operational definitions were developed for the variables addressed in this research. The operational definitions were stated in a form amenable to measurement or testing. For purposes of this study, the following terms were defined:

Burnout: Burnout is nominally defined as "the progressive loss of idealism, energy and purpose experienced by people in the helping profession as a result of work conditions" (Edelwich, 1980, p. 14). Burnout is operationally defined as a score on the Maslach Burnout Inventory (Appendix A).

Coping: Coping is nominally defined by Lazarus and Launier (1978) as "effort, both action oriented and intraphysic, to manage environmental demands and conflicts which tax or exceed a person's resource" (p. 293). Coping

is operationally defined as scores on the Blake Coping Scale (Appendix A).

Coping strategies: Coping strategies are nominally defined as behaviors selected in response to stressors (Lazarus, 1966). Coping strategies are operationally defined as the use of the following behaviors as identified on the Blake Coping Scale: (1) Emotional Avoidance, (2) Emotional Response, (3) Fantasized Action, (4) Professionalism, and (5) Rational Action.

Education: Education is nominally defined as obtaining knowledge or skill through a process: schooling (American Heritage Dictionary, 1981). Education is operationally defined as the completion of one or more of the following types of basic nursing programs: (1) Diploma, (2) Associate Degree, and/or (3) Baccalaureate.

Intensive care pediatric unit: an intensive care pediatric unit is operationally defined as a hospital unit with the following characteristics: (1) direct patient care is provided to severe to critically ill children; (2) children require highly skilled nursing care; (3) physical parameters are monitored every 1-2 hours; (4) special orientations and/or courses are required to function in the unit; and (5) nurses are required to operate and/or monitor highly technical equipment.

Nonintensive care pediatric unit: a nonintensive care pediatric unit is operationally defined as a hospital unit with the following characteristics: (1) direct patient care is provided to children with mild to severe deviations from health; (2) physical parameters on the children are monitored every 4-8 hours; (3) nurses working on the unit do not require special orientation and/or courses to function on the unit; and (4) nurses are infrequently required to operate highly technical equipment.

Pediatric nurse: pediatric nurse is operationally defined as a registered nurse on a hospital unit that provides direct patient care to children under 15 years of age.

Work experience: Work experience is operationally defined as employment on a pediatric unit as a registered nurse for a minimum of one year.

Limitations

The limitation identified for this study was use of a convenience sample. The convenience sample limits the generalizability of the research findings to the sample studied.

Summary

Coping behaviors are used by the individual to mediate situational and environmental stressors. The behaviors chosen can have an impact on a person's adaptation and health status. Burnout is the end product of stress and results as a consequence of ineffective coping. Nurses are prime candidates for burnout.

This study was designed to identify coping strategies of pediatric nurses in intensive care and nonintensive care units. The relationship of the selected strategies used by these nurses to burnout levels was investigated to determine which behaviors were associated with low burnout levels.

CHAPTER 2

REVIEW OF LITERATURE

The coping process, stressors in the intensive care environment, and burnout as a consequence of maladaptive coping are discussed in the review of literature. Literature which was pertinent to coping behaviors, stress responses, and burnout in pediatric intensive care and non-intensive care nurses is the primary focus of the review. The literature reviewed had emphasis on those aspects of the pediatric environment which influenced the nurses' ability to cope effectively with stress and avoid negative consequences such as burnout. Finally, literature related to the impact of maladaptive coping on the delivery of quality nursing care is presented.

Concept of Coping

Coping is a term that has been widely applied to describe the behaviors individuals' use to adapt to internal and external environmental changes which occur in response to stress. Definitions of coping in the literature have an action focus (Lazarus, 1974, 1985; Robischon, 1967). These definitions imply choices that are made by the individual. The behaviors chosen, in response to stressors encountered

on a daily basis, determine coping effectiveness (Aquilera & Messick, 1982). Definitions of coping deal implicitly or explicitly with a problem, threat, or crisis (Lazarus, 1966; J. Miller, 1983; Moos, 1976). Lazarus and Folkman (1984) defined coping as "constantly changing cognitive and behavior efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (p. 141).

The review of the literature led to the identification of characteristics that comprised the defining attributes for the concept of coping. Individuals who cope effectively have a desire to overcome crises, problems, or stressful life events (Applebaum, 1981; Caplan, 1964; Lazarus, 1966; Moos, 1976). These individuals actively seek helpful information or assistance from others. The ability to verbalize feelings, anxieties, and tensions to others enhances a person's ability to use available support systems to cope with stress and stressors. Effective coping requires individuals to have realistic perceptions of their problems and the possibility of problem resolution. To cope effectively, the individual must focus on what can be changed in the environment or situation and set realistic goals and develop plans to achieve those goals. To cope effectively, the individual must demonstrate flexibility and a willingness to change

(Applebaum, 1981; Caplan, 1964; Lazarus, 1966; K. Miller, 1983; Moos, 1976). Coping does not involve a singular activity, but it is a process that is activated in times of crisis, threat, or stress.

Coping Process as a Stress Mediator

Lazarus (1966) viewed coping as a process which involves the selection of specific behaviors in response to stressors. The process is dynamic in that it changes as events unfold and person-environment interactions change (Lazarus & Folkman, 1984). J. Miller (1983) described coping as a dynamic process which involves both cognitive and psychomotor action. According to Lazarus and Folkman (1984), the process of coping encompasses what the person thinks and does in a given situation and the modifications in selected behaviors that are made as events unfold. Coping behavior not only influences what has happened, but it will impact on what will happen (Lazarus, 1974).

Coping permits the individual to process information and modify behavior in an attempt to manage stress. The individual is motivated to use coping mechanisms or problem solving behaviors when faced with an emotionally hazardous situation or environment to mediate stress and restore the usual state of balance (Burgess & Baldwin, 1981). Therefore, the coping process facilitates the balance necessary

for emotional well being by influencing the behaviors selected in response to stress.

Coping behaviors selected are critical in that maladaptation and decreased levels of functioning are consequences of ill-advised selections. On the other hand, selection of adaptive coping behaviors results in an individual that comes through a crisis in a healthy manner (Robischon, 1967). Selye (1974) pointed out that the effects of stressors on the individual and the outcome of the precipitating event influence how the individual copes. Coping behaviors which permit effective management of crisis or stressful life events are incorporated into the individual's behavior patterns. Successful coping behaviors strengthen problem solving abilities (Caplan, 1964). According to Caplan, coping behaviors are activated in a crisis which cannot be handled by the individual's usual problem-solving techniques. Caplan pointed out that crisis resolution impacts on mental health because the individual's new equilibrium may be better or worse; therefore forces within the personality and relationships with significant others may need realignment. Stress plays a major role in both physical and psychological illnesses because the body must mobilize its resources to manage stress and cope effectively (Lazarus, 1974; Pearlin & Schooler, 1978).

The management of stress requires the individual to cope with events by taking charge of the situation or event (Applebaum, 1981). Coping has been described as a form of problem solving that results from evaluation of an event or situation, interpretation of the events, and initiation of actions based on perceptions of the event (Lazarus & Folkman, 1984; J. Miller, 1983). Coping deals with an actual or potential threat that must be overcome to master and control the environment or solve a problem (Cohen, 1985; Lazarus, 1966; J. Miller, 1983). Coping needs arise when the individual is exposed to environmental stressors that jeopardize the individual's integrity and self-esteem (Coelho, 1980).

The function of coping is to protect the individual (Aquilera & Messick, 1982). Therefore, coping behaviors may be activated in an attempt to change the situation or environment when possible, or to avoid those events which cannot be changed (Lazarus & Launier, 1979). If the condition cannot be changed or modified, then coping allows the emotional consequences to remain within the management capabilities of the person (Pearlin & Schooler, 1978). A person can cope by: (a) yielding to the strongest force; (b) seeking modification of incompatible demands; (c) avoiding sources of stress; (d) distorting reality; and

(e) developing emotional or psychological symptoms (Kramer & Schmalenberg, 1979). Long-term stress reduction requires the individual to confront the environmental stressors in a realistic manner and use problem-solving approaches to facilitate resolution. However, some individuals are more vulnerable to stress than others.

According to Burgess and Baldwin (1981), maladaptive coping behaviors are most likely to be used in those situations when an individual feels vulnerable. Psychological vulnerability to stress is determined by "the relationship between the individual's pattern of commitment and his resources for warding off threats to those commitments" (Lazarus & Folkman, 1984, p. 51). According to Rotter (1966), vulnerability to stress can be attributed to the individual's perception of locus of control in interactions with the environment. A person who is internally controlled presumes that one's own behavior determines events, while externally controlled individuals view events as being determined by external forces such as chance, luck, or other people (Rotter, 1966).

Maloney and Bartz (1983) compared the degree of internal and external locus of control in intensive care and nonintensive care nurses. The authors reported that intensive care nurses felt more externally controlled than

nonintensive care nurses who perceived themselves as more internally controlled. Intensive care nurses in high stress environments which they perceive as controlled by external forces have heightened feelings of powerlessness (Bilodeau, 1973; Keane, Ducette, & Adler, 1985). Cohen (1985) pointed out that persons' perceptions of control rather than the amount of control they actually have influence stress-related reactions. Feelings of powerlessness and inadequate functioning in the work environment can lead to maladaptive illness.

As psychological ineffectiveness increases, so does maladaptive illness (Bieliauskas, 1982). Bieliauskas developed a stress-illness paradigm that is influenced by a person's perception of events (Figure 2).

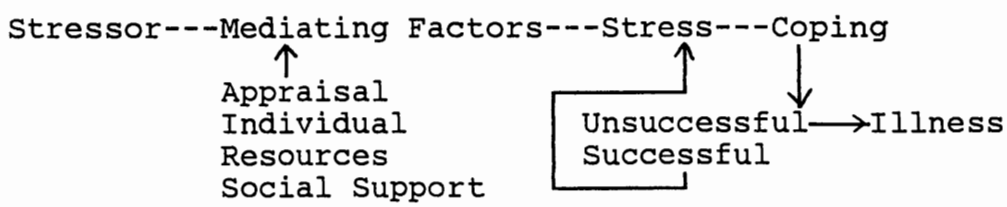

Figure 2. Bieliauskas' Stress-Illness Paradigm

(Note: From "Stress and Its Relationship to Health and Illness" by L. Bieliauskas. 1982, Boulder, CO: Westview Press, p. 91.)

An individual's perception of an event determines whether or not that event is deemed stressful and thus necessitates the need for coping activities. When individuals appraise threat in the environment as exceeding their coping resources for managing that threat and thus endangering their well being, the result is psychological stress (Lazarus & Folkman, 1984). The individual uses cognitive appraisal to evaluate the environment, while coping is the process used to manage those situations or events identified as stressful.

Cognitive appraisal can be subdivided into primary and secondary appraisal. In primary appraisal stressors are identified, while secondary appraisal involves selection of coping behaviors that will most likely be successful in mediating stress (Muldary, 1984). According to Aquilera and Messick (1982), the subjective meaning of stressful events is a primary determinant of the nature and degree of coping behaviors selected. Each person has a characteristic way of processing and using input from the environment.

Adaptive and Maladaptive Coping Behaviors

Characteristic behaviors constitute a person's coping style. Coping style has a major influence of an individual's perceptions of stress (Aquilera & Messick, 1982). The individuals imitate both adaptive and maladaptive coping

models found in their culture. Whatever the coping style, it represents interaction of the persons with their environment. Coping styles represent a multitude of behaviors. Persons who are unable to control their environment and the stress therein will tend to adopt a passive style of coping. Passive coping is more crisis oriented with little or no anticipation or planning for change (Lazarus, 1985; J. Miller, 1983). Individuals who use active coping styles anticipate and plan for change. Individuals who actively cope perceive themselves as flexible enough to change and tolerate the conditions produced by stress (Applebaum, 1981). Each individual uses many different behaviors when confronted with an actual stressful situation or event.

Coping represents a variety of activities which occur in response to actual or potential threat. Tension-reducing mechanisms are both overt and covert, conscious and unconscious (Pender, 1982). Bandura and Adams (1977) indicated that if individuals are convinced of their own ability to handle stressful life events, that belief will influence which behaviors are ultimately selected. Transactions with the environment are a primary factor in the formulation of perceptions of stress and threat.

Lazarus' (Lazarus & Folkman, 1984) transactional model illustrated the exchange between person, environment, and the cognitive processes that intervene in the relationship. The model provides for the fact that different people, based on individual perceptions, respond differently to the same stressful event or situation. Those individualized responses are not randomly occurring events, but they are goal directed strategies to maintain equilibrium and facilitate adaptation.

Adaptation represents adjustments made in response to external and internal stressors to maintain or reestablish balance or a steady state (Pender, 1982; Roy, 1984; Selye, 1975). Successful interaction with the environment leads to enhancement and growth of the individual while preventing harm or injury. According to Moos (1976), a crisis is a disturbance in equilibrium that upsets the steady state and requires coping behaviors to be activated.

Coping behaviors used to bring about change link the stressful event to adaptation (Lazarus & Folkman, 1984). Adaptation problems are encountered when the person's responses are inadequate to meet the demands of the situation or event. If stressors are not limited to a manageable level, maladaptation occurs (Selye, 1975). Maladaptive coping has an impact on the health status of individuals

(Lazarus, Cohen, Folkman, Kanner, & Schaefer, 1980; J. Miller, 1983).

Coping can facilitate health if it is used effectively in times of stress. Coping is facilitated if effective actions are initiated that improve a situation (Applebaum, 1981). Since it is not always possible to change a situation or eliminate stress, especially in an environment such as an intensive care unit, behaviors must be used to mediate the stress. According to Albertus, Guildner, and Pollard (1980), if the usual coping mechanisms used by the nurses do not reduce stress, then alternative behaviors are sought. As noted by Tache and Selye (1985), coping with stress involves changing or modifying the environment to mediate or remove stress. In addition, it is necessary to develop effective responses to unavoidable stressors. Modifying perceptions of events will prevent neutral events from becoming stressors. Decisions made by nurses in stress-filled environments play a major role in mediating that stress.

The requirement that intensive care nurses make rapid decisions which ultimately impact on patient welfare has raised questions concerning factors which hinder decision making (Bourbohnais & Baumann, 1985). Holsti (1979) stated decision making in a crisis produces stress that results in cognitive rigidity, a decline in cognitive ability and

difficulty coping with complex situations. Maladaptive coping leaves the decision maker in a cognitive state where errors in judgment and accidents increase in frequency with many potentially dangerous outcomes (Holsti, 1979).

Positive coping strategies used by nurses to mediate stress in intensive care nursing can help relieve or prevent negative consequences of stress that may be detrimental to their well being. Adaptive coping in response to stress and crisis which are a part of everyday life can prevent maladaptation (Robischon, 1967).

Environmental and Situational ICU Stressors

The intensive care unit presents nurses with a unique set of problems that are stress related. Nurses must seek to maintain a balance between the need to provide highly skilled nursing care and their psychological well being (Gardner, Parzen, & Stewart, 1980). According to Seuntjens (1982), problems such as professional burnout result from job-related environments rather than the individual nurse's personality. The constant awareness of the potential disastrous outcome of mistakes for clients forces the ICU nurse to function under what Hay and Oken (1972) described as a "cloud of latent anxiety" (p. 111). These authors pointed out that increased anxiety levels reduced efficiency and decision-making capacity. Selye (1976) recognized that

intensive care units were highly stressful environments in which to administer conscientious nursing care. Intensive care units differ both qualitatively and quantitatively from traditional nursing units.

The combination of critically ill patients, death, impending emergencies, and the need for increased responsibility and decision making by the nurses make the intensive care unit highly stressful (Hay & Oken, 1972; Marshall & Kasman, 1980; Simon, 1980; Vestal, 1981). Pediatric patients are totally dependent on the nurses who care for them. Problems which arise on pediatric units are usually of an emergency nature and require independent decision making and priority setting by the nursing staff. Adding to the complexity of caring for the critically ill pediatric patient is the emotional involvement of the staff with clients and their families (Simon, 1980; Smith, 1983; Vreeland & Ellis, 1969). The ages of the pediatric client increase feelings of anxiety and loss when setbacks or deaths occur (Bilodeau, 1973). Strauss (1968) described the focus of nursing as "intense and narrow" (p. 7). The younger the patient, the more demands placed on nurses in what is already an inherently stressful environment.

The neonatal intensive care unit has been described as a complex environment where multidisciplinary caregivers

work together under continuous stress (Gribbins & Marshall, 1982; Marshall & Kasman, 1980; Walker, 1982). Gribbins and Marshall studied the difference in coping strategies used by neonatal intensive care nurses in relation to the years of experience on the unit. Their findings indicated there was a progressive change in coping behaviors for nurses who remained three years or more. Nurses progressed from internalization of stress and feelings of inadequacy experienced by the new neonatal intensive care unit (NICU) nurse to more assertive problem-solving behaviors. Nurses remaining on the unit over three years demonstrated a use of more focused goal-directed, constructive behaviors to set priorities and problem solve. The authors suggested nurses employed over three years seemed to learn to cope effectively with the environment. However, regardless of the years of experience, Gribbins and Marshall found that a phenomenon described as "detached concern" dominated coping responses (p. 139).

Continuous environmental and situational stress often compromise the intensive care nurse's ability to cope. As ineffective coping occurs, the reaction to stressors intensifies the subsequent responses which sets up a vicious cycle (Edelwich, 1980). Positive outcomes of coping, when caring for pediatric clients, are improved care of the

children and their families and a simultaneous decrease in stress for the health care provider. Negative outcomes of ineffective coping include stress and anxiety (Bilodeau, 1973; Sande, 1983).

According to Bilodeau (1973), anxiety provoking symptoms of the critically ill client and death give rise to feelings of anxiety, anger, and guilt in the health care providers. This anxiety interferes with the health care providers' abilities to function effectively in their role. As stated by Hay and Oken (1972), as anxiety levels increased there was a decrease in efficiency and decision-making ability. The authors found that intensive care nurses continued to function through the use of distancing techniques that resulted in adaptation problems. From their study, Hay and Oken pointed out the need to identify behaviors that were effective in mediating stress in the intensive care environment.

Oskin (1979) sought to identify the coping behaviors used by critical care nurses to manage environmental stressors. The author found that nurses tended to use behaviors indicative of direct action. The actions selected were based on the subject's perception of the stressor. The findings supported the fact that it was important that

situational stressors and coping measures used by intensive care nurse be identified to provide effective interventions.

Gentry, Foster, and Froehling (1972) compared the levels of psychological and emotional responses of nurses working in intensive and nonintensive care units. As noted by Gentry et al., their findings supported earlier research which indicated that intensive care nurses were under greater psychological and emotional stress than nonintensive care nurses. The intensive care nurses were found to be more hostile, depressed and anxious than nonintensive care nurses who participated in their study. Gentry et al. associated the nurses' responses to situational stressors within the work environment rather than the nurses' personalities. The intensive care nurse is characterized as a "strong willed, independent, aggressive woman giving rise to conflict between and within groups" (Cassen & Hackett, 1972, pp. 1429-1430). These characteristics would intensify the demands placed on the intensive care nurse by environmental and situational stressors. In addition, the characteristic of perfectionism has been identified in the literature as a contributor to stress, coping, and adaptation problems (Eisendarth & Dunkel, 1979; Freudenberger, 1974; Lavandero, 1981).

Intensive care nurses who have unrealistic expectations of themselves place their self-esteem at risk. If expectations are realistic and achievable, the professionals are able to maintain their self-esteem. Smith (1983) pointed out that the expectations of perfection and fear of the consequences of imperfection make the intensive care nurse prone to the effects of stress. Reactions of pediatric critical care nurses to stress identified by Smith (1983) included: (1) inappropriate emotional attachment to clients; (2) feelings of guilt and depression; and (3) focusing on technology rather than the client. The behaviors described by Smith are classic symptoms of burnout, a consequence of ineffective coping.

Burnout: A Consequence of Ineffective Coping

Nurses working in stress-filled environments are prime candidates for burnout (Buechler, 1985; Harris, 1984; Price & Murphy, 1985). Increased levels of anxiety have been identified by McHenry (1981) as a possible factor in the development of the burnout syndrome among nurses who staff special care units. Jacobson (1983) pointed out that nurses under stress were physically, emotionally, and financially costly for patients, hospitals, and themselves. According to K. Miller (1983), one of the most frequent reasons for nurses to leave critical care nursing is burnout. According

to Cronin-Stubbs and Rooks (1985), burnout is a behavioral response to occupational stress. Job related stress can give rise to feelings of powerlessness in the care provider (Bilodeau, 1973; Cohen, 1985; Maloney & Bartz, 1983).

It is the individuals' perceptions that they are powerless and their acceptance of the perceived lack of power that constitute burnout (Storlie, 1979). Maloney and Bartz (1983) found that intensive care nurses reported significantly more feelings of powerlessness than nonintensive care nurses. Feelings of powerlessness may impede the initiation of stress-mediating behaviors. Burgess and Baldwin (1981) suggested that the emotional survival of health care providers in intensive care settings hinged on the initiation of steps to prevent and/or mediate burnout.

Nurses working in intensive care units are usually provided with inservice programs to give them the expertise necessary to care for critically ill clients, use highly technical equipment, and monitor patients in life and death situations. However, little has been done to assist the nursing staff in coping with stress-filled environment. Dear, Weisman, Alexander, and Chase (1982) pointed out that nurses needed to be prepared to make rapid decisions and perform under stress in the intensive care environment. Smith (1983) stated that "ICU clinicians should be prepared

for the stresses, reactions, and feelings that they are likely to experience as providers of critical care" (p. 538). According to Patrick (1981), individuals have a repertoire of coping strategies which determine how they respond to actual experiences in their work. These strategies allow the individual to avoid the consequences of stress. The consequences of ineffective coping could result in negative outcomes for both intensive care and nonintensive care nurses.

Maloney (1982) investigated the difference in stress in intensive and nonintensive care nurses. He reported that nonintensive care nurses experienced significantly higher anxiety, somatic complaints, and workload dissatisfaction than did intensive care nurses. However, intensive care nurses were found to be more alienated than nonintensive care nurses. Maloney questioned whether the alienation represented the coping mechanisms used by the intensive care nurse to avoid situational and environmental stress. Maloney reported that findings of the study indicated burnout could be a problem for both intensive care and nonintensive care nurses.

Edelwich (1980) defined burnout as "the progressive loss of idealism, energy, and purpose experienced by people in the helping professions as a result of the conditions of

their work" (p. 14). Patrick (1981) referred to burnout as a process that thrives in environments which maintain a high or continuous level of stress. Burnout is the end product of stress experienced over a protracted period of time (Seuntjens, 1982). Health care providers who function in an environment in which a continuous high level of stress is inevitable would be considered prone to burnout (Buechler, 1985; Harris, 1984).

Nurses who work in high risk/intensive care pediatric units tend to fall into the burnout prone group. Marshall and Kasman (1980) addressed the difficulties of the neonatal intensive care unit, such as noise, high level diverse sensory stimuli, rapidly changing technology, and the moral/ethical issues encountered with critically ill infants. Because of the difficulties in coping with stressors in the neonatal intensive care unit, Marshall and Kasman (1980) suggested that most nurses in that environment had experienced some degree of burnout. Hay and Oken (1972) compared the psychological stress encountered by intensive care workers to those of a soldier in combat. The authors identified a major problem in intensive care nursing as the threat of developing feelings of personal failure as a result of repeated exposure to dying patients and death. The authors questioned the adaptive techniques sometimes

used, by the nurses studied, which allowed continued functioning. Burnout which results from the conditions mentioned by Hay and Oken has an impact not only on the health care delivered in an intensive care unit, but would also affect all aspects of the nurse's life. Persons who are experiencing burnout display a variety of physical and emotional manifestations.

Lavandero (1981) referred to a highly variable combination of symptoms, behaviors, and attitudes that constitute burnout. The symptoms manifested by individuals are the result of personality and the environments in which the individuals function. Marshall and Kasman (1980) indicated burnout was a way of thinking, feeling, and behaving that each person expresses differently. Maslach (1976) reported on the detachment behaviors demonstrated by workers as they lost their objectivity and could no longer distance themselves from situations without loss of concern. As the worker's ability to cope with stress diminished, the symptomatology of burnout became more pronounced. The attributes of burnout as described in the literature are summarized by this investigator in Figure 3.

Edelwich (1980) pointed out that the reason burnout is so devastating is because it does not occur in isolation but spreads throughout the staff and affects the clients who are

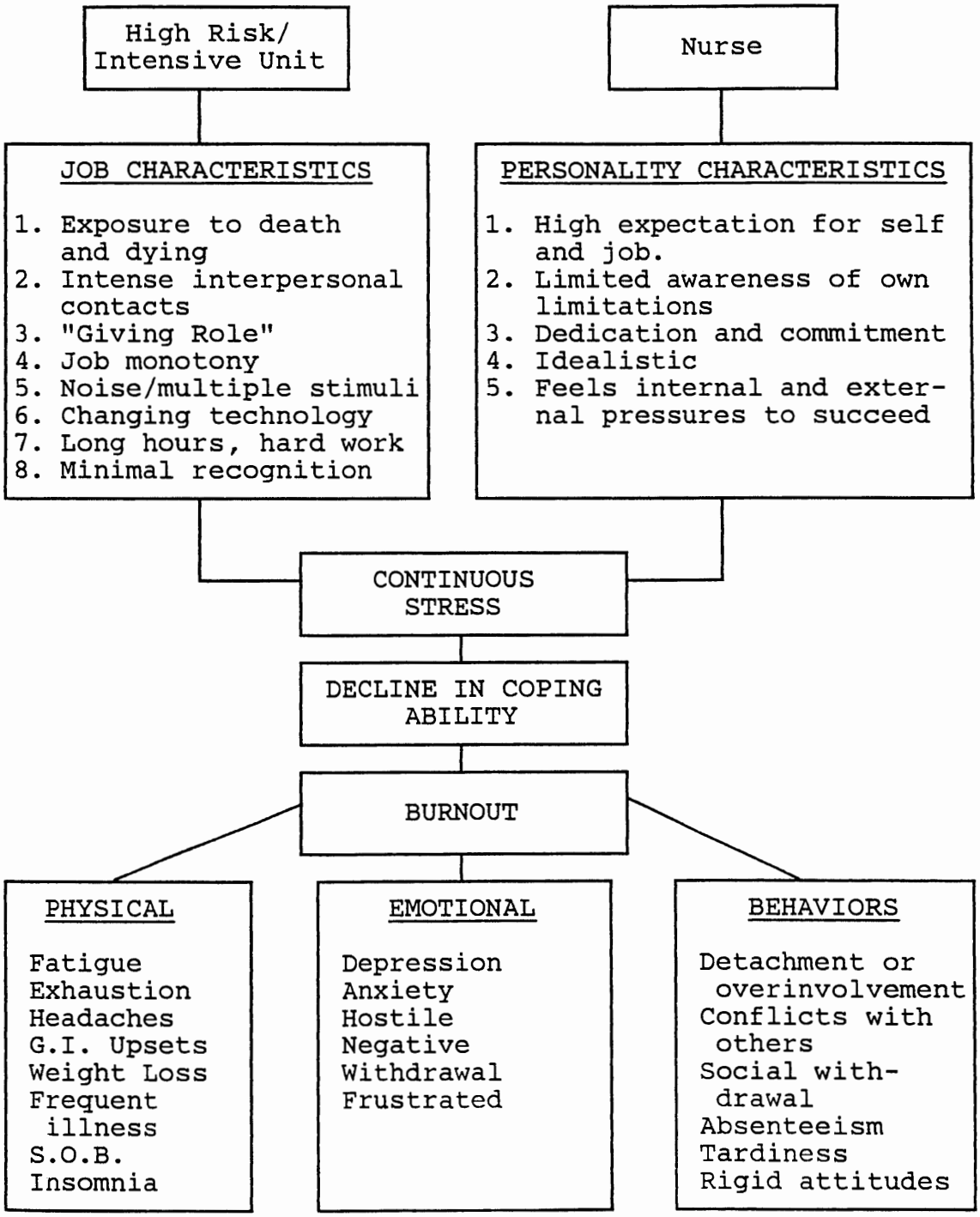

Figure 3. Summary of Descriptions in Literature of the Attributes of Burnout

the recipients of the staff's care. While the critically ill clients in an intensive care nursing unit contribute to the environmental stress, they are not the only stressors.

The causes of burnout are as diverse as the manifestations. According to Patrick (1981), the causes of burnout fall into two broad categories: those that are self-generated and those that are system generated. Lavandero (1981) noted that individuals who have high expectations and a need for approval are susceptible to burnout. Maslach (1976) referred to professionals whose perceptions of their work are less than realistic. These individuals have difficulty coping with the realities in their work environment which might be far removed from their ideals. The individual's perception of the work environment has been considered the key to the development of burnout (Buechler, 1985). The literature portrays the candidates for burnout as those persons motivated to achieve whose concepts of their own limitations are somewhat cloudy (Freudenberger, 1975; Lavandero, 1981; Maslach, 1976). Persons who experience burnout may have had adequate coping resources at one time, but long term exposure to continuous stress has depleted those resources (Patrick, 1981).

Importance of Effective Coping for Nurses

Difficulty in coping with the demands of stressful environments and situations can eventually lead to burnout, which may result in dire consequences for the nurse, patient, and hospital, unless meaningful interventions are instituted (Huckabay & Jagla, 1979; Oskin, 1979). Maslach and Jackson (1981) noted that it is the responsibility of health care professionals to take care of themselves as well as their clients. Maladaptive coping and burnout have had a negative effect on the quality of patient care. According to Hay and Oken (1972), the effectiveness of providers of quality patient care depends on the psychological state of the caregivers as well as their technical expertise.

Maslach (1976) identified burnout as a major factor in the delivery of poor health care. Magill (1982) stated "burnout is harmful to the individual and interferes with the delivery of humane and effective nursing care for patients" (p. 17). Consequences of burnout identified by Edelwich (1980) included compromise service to clients and a high cost to the health care agency which employs burned out health care professionals. Albrecht (1982) pointed out that the consequences of burnout can have a devastating effect on the job performance as well as the personal life of the nurse. Sande (1983) identified the prevention of

burnout as a method of keeping nurses in nursing. There is agreement in the literature that quality care is most likely to be provided by a physically and emotionally well nurse (Cronin-Stubbs & Rooks, 1985). The consequences of burnout in terms of the individual, patient, and system as discussed in the literature and summarized by the investigator are illustrated in Figure 4.

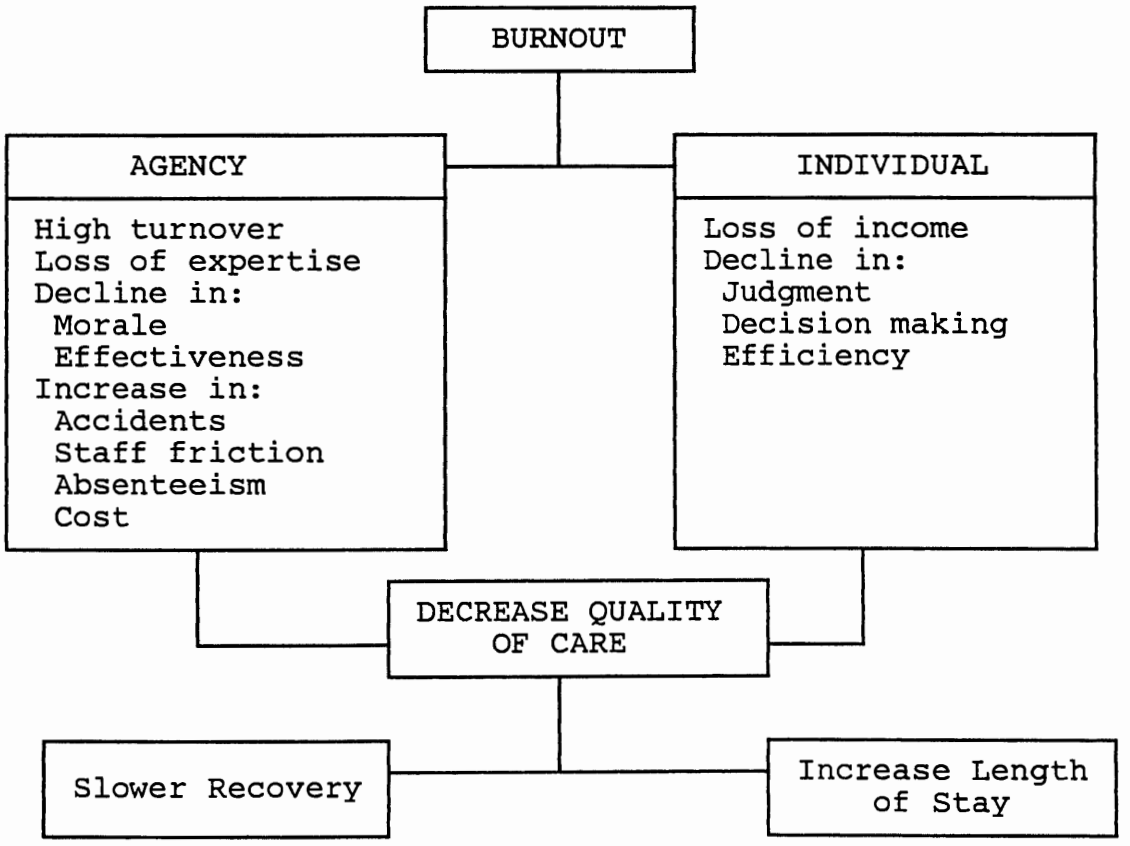

Figure 4. Summary of the Consequences of Burnout as Reported in the Literature

Relationship of Coping Behaviors and Burnout

The high price paid by health care workers in a stress-filled environment such as a neonatal intensive care unit was addressed by Marshall, Kasman, and Cape (1982). However, it is not possible to completely remove stress from the intensive care environment. The impossibility of removing environmental stressors necessitates nurses' development of effective coping measures to mediate the stress. According to Smith (1983), improved nursing care of children and families can be the outcome of positive coping by the pediatric critical care nurse. Positive coping diminishes stress and minimizes the risk of burnout in high risk/ intensive care pediatric nurses.

The nurse's ability to cope with work-related stressors is an important factor in the control of burnout. Albrecht (1982) correlated a number of coping strategies with the frequency and intensity of burnout. Albrecht noted that nurses in the high burnout group used behaviors that were indicative of "a sense of flight both physically and emotionally from the unit" (p. 5). The low burnout group used strategies which required they become involved in the hospital environment rather than use escapist strategies. The behaviors of the low burnout group were consistent with the

direct action focus of effective coping behaviors addressed in the literature.

Yasko (1983) investigated the relationship between selected variables and burnout level in a sample of 185 oncology nurses. The researcher found that the higher the level of stress in the work environment, the greater the degree of burnout. A significant negative correlation was found between the ages of the nurses and burnout levels; however, the number of years subjects had functioned as oncology nurses was not significantly correlated with burnout levels. Yasko found the best predictor variables for burnout were role satisfaction, level of stress, adequacy of psychological support, and feelings of apathy and withdrawal.

Burnout-related stressors were the focus of a study conducted by Cronin-Stubbs and Rooks (1985). The authors sought to identify stressors that were associated with burnout in critical care nurses. The authors reported that findings of their study indicated that occupational stress was associated with burnout. The intensity of stress rather than the frequency of that stress was found to contribute to burnout. In addition, emotional support was found to be inversely related to burnout. The authors concluded that desirable personal changes can prevent burnout by

controlling the impact of stressors. Pediatric critical care units were not used in the study. The authors cited the unique differences in critical care units for children as the rationale for exclusion. However, no significant difference in burnout was found in the different types of specialty units studied.

Summary

Awareness of and sensitivity to the effects of maladaptive coping on the nurse and the relationship of coping to mediation of stress in the pediatric critical care environment are essential to the delivery of quality nursing care. Effective coping allows the nurse to mediate stress prior to its building to a critical state which the individual does not have the resources to combat. The prevention of consequences of stress such as burnout are necessary for nurses to perform their role effectively in the stress-filled intensive care environment.

CHAPTER 3

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

The research design selected for this study was a nonexperimental, cross-sectional explanatory survey. The study met the following criteria for a nonexperimental design: The independent variables could not be manipulated by the investigator. The research was conducted in a natural setting over which the investigator had no control. A nonrandom, total population sampling method was employed. Therefore, an experimental design could not be used (Abdellah & Levine, 1979).

The independent variables in this study were coping strategies used by pediatric nurses and type of pediatric unit on which the subjects were employed. The independent variable, type of pediatric unit, consisted of two levels: intensive and nonintensive care units. The dependent variable in this study was burnout level. A cross-sectional approach was selected because the data were collected at one point in time. The survey method was used to obtain information from the sample by means of self-report (Polit & Hungler, 1983). The Maslach Burnout Inventory (Maslach & Jackson, 1986) (Appendix A) was used to measure the dependent variable, burnout. The Blake Coping Scale (Appendix A)

was used to identify coping strategies. The pediatric units on which the subjects worked were a natural setting over which the researcher had no control. Therefore, this research involved previously developed coping behaviors of pediatric nurses in a natural setting. Extraneous variables controlled by the research design were level of basic nursing education, age, experience, and full time employment. Information was collected on all four variables. Subjects were included in the study with diploma, associate, and baccalaureate degree nursing programs.

Setting

The research was conducted within two hospitals that are located in a large metropolitan area of approximately 2 million residents in the southwestern United States. The first hospital is a 500-bed hospital that housed a 60-bed general pediatric unit and a 16-bed pediatric intensive care unit. The second hospital is a 300-bed hospital that housed a 40-bed general pediatric unit, a 20-bed neonatal intensive care unit, and a 25-bed high risk nursery.

Population and Sample

The target population for this study included approximately 120 registered nurses who worked in intensive and nonintensive care pediatric units within the two

selected hospitals. The first 500-bed hospital employed 45 registered nurses in the two pediatric units; the second 300-bed hospital employed 75 registered nurses in the three pediatric units. The nursing staffs on the nonintensive care pediatric units at both hospitals were composed of registered nurses, vocational nurses, and nursing assistants. The staff-patient ratio was 1:6-7. The nursing staffs on the intensive care pediatric units at both hospitals were composed of registered nurses. The nurse-patient ratio was 1:2-4.

A total population sampling technique was used to obtain the sample. However, respondents who did not meet the study criteria were not included in data analysis. The criteria for sample selection included the following.

1. The registered nurse must have been employed full time on a pediatric unit.
2. Subjects must have worked on their present unit for a minimum of one year.

According to Maslach (1976) and Freudenberger (1974), symptoms of burnout usually begin after one year of employment on an intensive care unit. Excluding nurses with less than one year of experience helped to control the influence of stress reactions attributable to job orientation and/or

transition from the role of student to graduate nurse. Both factors could be considered extraneous variables.

The sample contained 41 intensive care pediatric unit nurses and a comparison group of 33 nurses who worked in nonintensive care pediatric units. The nurse population in the intensive care unit was small; using three units and all three shifts did not provide a larger sample. Neonatal intensive care, pediatric intensive care, and high risk nursery nurses were collapsed into one group and were compared with nurses from nonintensive care pediatric units.

Protection of Human Subjects

Both hospitals used in this study were administered under the same agency. A copy of the proposed study was submitted to the research committee for approval by the agency (Appendix B). This study involved a survey of adults and met the criteria of the Texas Woman's University Human Subjects Review Committee. The informed consent to participate in this study was in the form of a cover letter which introduced the investigator, explained the purpose of the study, and was reviewed aloud by the investigator to all three shifts of nurses.

The letter conveyed the following information: The nurses were asked to voluntarily participate in the study. The nurses were told that all information would remain

confidential. They were asked not to include their names or the name of their employers on the questionnaires. They were apprised that a potential risk of participation could be anxiety caused by increased awareness of behaviors and attitudes about pediatric nursing. The investigator offered to answer any questions and provided a phone number for respondents' use if they had any questions about the study. The subjects were informed via the cover letter that their completion and return of the questionnaires constituted their informed consent to act as subjects in this research.

Instruments

Three instruments were used for data collection (Appendix A). A personal information sheet was developed by the investigator to collect demographic data. The Blake Coping Scale, an investigator-designed instrument, was developed to identify coping behaviors used by the subjects in response to a stressful situation. The Maslach Burnout Inventory (Maslach & Jackson, 1986) was used to measure burnout level.

Personal Information Sheet

The personal information sheet was used to collect data on the composition and distribution of personal characteristics of the sample. This information included variables

such as age, education, and experience. The data permitted classification of subjects into categories based on the measured characteristics (Polit & Hungler, 1983).

Blake Coping Scale

Coping strategies of pediatric nurses and type of pediatric unit were the independent variables in the study. The Blake Coping Scale was developed to measure coping strategies. The purpose of the scale was to identify coping behaviors which were associated with the most favorable outcome in managing stress in the work environment.

The Blake Coping Scale requires the subjects to read a stressful situation and respond to 40 statements representative of various coping behaviors. Respondents indicate their likelihood of using the behaviors in response to the situation given. The statements were derived from several sources: Lazarus' Ways of Coping Scale (Lazarus & Folkman, 1984), Modified Lazarus Ways of Coping Scale (Chiriboga, Jenkins, & Bailey, 1983), and Jacobson's Nurses Coping Scale (Jacobson, 1983). Statements related to nursing were either formulated by the investigator or modified from one of the previously mentioned sources.

Respondents are asked to respond by a 5-point frequency of use scale which varies from never to always. The 40 statements are coded as to whether they represent effective

or ineffective coping behaviors. The statements are divided into the following subscales according to type of coping behavior, as identified by Chiriboga et al. (1983): Professionalism, Emotional Avoidance, Rational Action, Fantasized Action, or Emotional Response.

The maximum score that can be received for each question is 5 points. A cumulative score is obtained for each coping subscale. The cutoff points for scores indicative of effective and ineffective coping were established by dividing the maximum possible subscore score into upper, middle, and lower thirds. Respondents who are coping effectively score high (upper third) on the subscales for Professionalism and Rational Action and low (lower third) on the subscales for Emotional Avoidance, Fantasized Action, and Emotional Response (Table 3). Maslach and Jackson (1981) used a similar procedure to categorize scores on the Maslach Burnout Inventory. However, normative distribution was used to divide MBI scores into upper, middle, and lower thirds.

The Blake Coping Scale contains 20 positive statements and 20 negative statements. Completion of the Coping Scale takes approximately 15 minutes.

Reliability. Reliability for the scale was determined using the alpha coefficient as a measure of internal consistency. The alpha coefficient measures the extent to

Table 3

Scoring for the Blake Coping Scale

Subscores for Strategies	Maximum Possible Score	Coping	
		Effective	Ineffective
Professionalism	50	≥32	≤16
Rational Action	50	≥32	≤16
Emotional Avoidance	50	≤16	≥32
Fantasized Action	20	≤07	≥13
Emotional Response	30	≤10	≥20

which performance on one item is a predictor of performance on other items (Waltz, Strickland & Lenz, 1984). The scale was tested twice for reliability. The first draft was tested using 13 doctoral students. The reliability coefficient at that testing was r = .578.

Following the first testing, the coping scale was revised using a point biserial discrimination index as a guide for the deletion or revision of items. Thirty respondents completed the scale in the pilot study. The pilot study sample consisted of 18 pediatric intensive care nurses and 12 nonintensive care nurses. The reliability coefficient on the second testing was r = .765. Prior to inclusion in the final study, the scale was revised a second time by use of the discrimination index as a guide for the

deletion or revision of items. Those statements with a discrimination index above r = .3 were retained unaltered. Those statements with a discrimination index below r = .3 but whose removal would reduce the overall alpha below r = .76 were revised and retained.

Validity. A factor analysis was used to establish construct validity. The purpose of the factor analysis was to identify those factors which underlie test performance (Tabachnick & Fidell, 1983). The explained variance was used to identify the cutoff point for the factors identified. The test items were then reviewed to determine the five coping strategies that represented Factors 1 through 5. Using the five factors selected provided a good balance of positive and negative items (Table 4).

Table 4

Factor Analysis for the Blake Coping Scale

Factor	Variance Explained	Coping Strategy
1	8.87	Emotional Avoidance
2	7.32	Professionalism
3	5.22	Fantasized Action
4	4.02	Emotional Response
5	3.43	Rational Action

Maslach's Burnout Inventory

The Maslach Burnout Inventory (MBI) was used to measure the dependent variable, burnout. The MBI measures three aspects of burnout, and the instrument contains subscales which measure each of these aspects of burnout: Emotional Exhaustion (EE), Depersonalization (DP), and Lack of Personal Accomplishment (PA) (Maslach & Jackson, 1986).

The MBI is composed of 22 statements of job-related feelings. Subjects respond on a scale varying from 0 to 6. Maslach and Jackson (1981, 1986) conceptualized burnout as a continuous variable which varies from high to moderate to low degrees of experienced feeling. Numerical cutoff points are identified for each of the three subscales. The scores for each subscale are viewed separately. Each respondent receives three scores: (1) Emotional Exhaustion (EE), (2) Depersonalization (DP), and (3) Personal Accomplishment (PA).

According to Maslach and Jackson (1986), "the higher the degree of experienced burnout, the higher the score on the first two subscales and the lower the score on the last subscale" (p. 2). A scoring key is provided on which questions representing each subscale are identified. Scores are coded as to the level of burnout by use of the numerical cutoff points which accompany the test (Table 5).

Table 5

Scoring on the Maslach Burnout Inventory

MBI Subscore	Range of Experienced Burnout		
	Low (Lower 1/3)	Average (Middle 1/3)	High (Upper 1/3)
Emotional Exhaustion	≤16	17-26	≥27
Depersonalization	≤06	7-12	≥13
Personal Accomplishment	≥39	32-38	≤31

Note: From Maslach Burnout Inventory, by C. Maslach and S. Jackson. 1986, 2nd edition. Palo Alto, CA: Consulting Psychologists Press.

Maslach and Jackson (1986) made the following recommendations concerning the interpretation of results:

1. MBI scores for groups of respondents be treated as aggregate data.

2. Mean and standard deviation for each subscale be compared to the normative data provided.

3. Multiple regression techniques be used to assess factors on which data have been collected (i.e., demographics, personality) which best predict MBI scores. (p. 5)

For purposes of statistical analysis, Maslach and Jackson suggested the original numerical scores be used rather than categories of high to low. Use of the numerical scores would provide interval level data. "The power of

statistical analysis is greatly enhanced by using the full range of scores" (Maslach and Jackson, 1986, p. 5).

Reliability. Cronbach's coefficiency alpha was used to estimate internal consistency. The reliability coefficients and standard error of measurement for each subscale are provided in Table 6.

Table 6

Reliability Coefficients and Standard Error of Measurement for the Maslach Burnout Inventory Subscales

Statistical Measurement	MBI Subscales		
	Emotional Exhaustion	Deperson-alization	Personal Accomplishment
Reliability Coefficient	.90	.79	.71
Standard Error of Measurement	3.80	3.16	3.73

Note: Data on subscales from Maslach Burnout Inventory by C. Maslach and S. Jackson, 1986, p. 8.

Validity. Three methods were used to determine convergent validity. The MBI scores were correlated with independent behavioral ratings made by a person who knew the individual well (i.e., a co-worker or a spouse). The second method correlated job characteristics that were expected to contribute to experienced burnout with MBI scores. The

third method correlated measures of various outcomes that have been hypothesized to be related to burnout with MBI scores (Maslach & Jackson, 1986).

To establish discriminant validity, Maslach and Jackson (1981; 1986) sought evidence that would distinguish the MBI from other measures of psychological constructs which might be confused with burnout. A comparison of scores received on the MBI and a measure of job satisfaction was done on the same subjects. Maslach and Jackson (1981) correlated burnout subscales with a scale on job satisfaction. The results revealed that less than 6% of the variation was accounted for by any one correlation with the subscale. The authors concluded that burnout was not a synonym for job dissatisfaction.

Data Collection

The investigator met with pediatric nurses at a time prearranged by the head nurse or supervisor. The purpose of the study was explained and the letter detailing consent was reviewed. The nurses were then asked to participate in the study.

Subjects who agreed to participate were given an envelope which contained the following: (1) cover letter for informed consent; (2) Personal Information Sheet; (3) Blake Coping Scale; and (4) Maslach Burnout Inventory.

Instructions were given on how to mark the response sheet, and any questions concerning the tools were answered by the investigator. Subjects were asked to return the envelope to the head nurse's office.

Pilot Study

A pilot study was conducted to test the feasibility of the selected research design and the reliability of the Blake Coping Scale. The pilot study population consisted of 11 pediatric intensive care nurses and 11 nurses who worked on conventional hospital units. A nonprobability sampling technique was used. The sample was comprised of registered nurses who volunteered to participate in the study.

The nurses responded to 46 statements on coping behaviors contained in the Blake Coping Scale. Their choices indicated their likelihood of using the behaviors in response to the situation given on the scale. Completion of the coping scale took approximately 20 minutes. The reliability coefficient on the scale used in the pilot study was $r = .765$. The alpha coefficient measured the extent to which performance on one item was a predictor of performance on other items (Waltz et al., 1984). Before use in the final study, the scale was revised to further increase reliability. As noted by Waltz et al., "the closer the coefficient is to 1.00 the more stable the measuring device" (p. 135).

A factor analysis was used to establish construct validity of the coping scale. Five factors were identified by use of the explained variance to establish a cutoff point. The factors were: Emotional Avoidance, Professionalism, Fantasized Action, Emotional Response, and Rational Action.

In addition, the pilot study subjects were asked to complete the Maslach Burnout Inventory. Completion of the MBI took approximately 20 minutes. The MBI is a double-sided questionnaire and eight persons who originally volunteered to participate had to be removed from data analysis of the pilot study because they failed to fill out the second side. Data analysis was performed for each pilot study research question (Table 7).

Several problematic areas were identified in the pilot study during data collection and data analysis. However, the methodology did provide for accurate and objective data collection. The instruments provided sufficient relevant data to answer the research questions. The pilot study research questions were revised and refined for the final study. The small sample size and lack of the ability to obtain a sample which consisted entirely of pediatric nurses may have accounted for the lack of statistically significant findings in the pilot study.

Table 7

Data Analysis for the Pilot Study

Pilot Study Research Questions	Procedure	Results
1. Is there a difference in coping strategies used by pediatric nurses in intensive care and conventional units?	*t*-test	Nurses working on conventional units had significantly higher total coping scores.
	Mann-Whitney *U*	No significant difference in the type of coping behaviors used by each group.
	Analysis of Variance	No significant difference in coping behaviors between and within groups.
2. Is there a significant difference in burnout levels of pediatric nurses in intensive care and conventional units?	*t*-test	There was no significant difference in burnout levels of the two groups.
	Mann-Whitney *U*	There was no significant difference in burnout levels of the two groups.
3. What is the relationship of coping behaviors to burnout?	Spearman Rho	There was a negative significant correlation of total coping scores and burnout score for emotional exhaustion.
	Multiple Regression	The three demographic variables which remained in the equation were age of subject's children, age, and education.

Treatment of Data

The nonprobability sampling techniques used in this study limited the types of statistical tests which could be applied to the data. Demographic data on age, length of licensure, and time of employment on present unit were treated as interval level data. Cumulative scores for each subscale on the Blake Coping Scale were treated as ordinal level data. Maslach and Jackson (1986) recommended that the original numerical scores on the Maslach Burnout Inventory be treated as interval level data. Four research questions were formulated for this study (see Table 7) and each question was analyzed with appropriate statistical treatment.

The first research question of this study was: Do the coping strategies used by pediatric nurses in intensive care units differ from those used by pediatric nurses in non-intensive care units? Coping was measured by use of the Blake Coping Scale. A frequency distribution was constructed to determine the frequency of use of the five categories of coping behaviors assessed by the coping scale. In addition, a frequency of use of effective and ineffective coping behaviors was determined. The Mann-Whitney $\underline{U}$ was used to determine if there was a significant difference in coping scores for the five subscales on the Blake Coping

Scale between the two groups of nurses. The Mann-Whitney U, a nonparametric counterpart to the t-test, does not make assumptions concerning the distribution of the data (Champion, 1981). An analysis of variance (ANOVA) was performed to determine if there was a significant difference between and within groups on the coping subscale scores.

The second research question was: What is the level of burnout in pediatric nurses who work in intensive care units compared to pediatric nurses who work in nonintensive care units? Burnout was measured by the Maslach Burnout Inventory. A Mann-Whitney U was used to determine if there was a significant difference in burnout levels of intensive care pediatric nurses as compared to nonintensive care pediatric nurses. While different types of pediatric intensive care units were initially collapsed into one category and compared to nonintensive care pediatric units, a finer distinction was drawn between the pediatric units. A one-way ANOVA was used to determine the difference in burnout scores of the neonatal intensive care, pediatric intensive care, high risk nursery, and conventional pediatric nurses. An analysis of covariance (ANCOVA) was performed to determine which demographic variables contributed significantly to the variance in burnout scores when time of employment on present unit was factored out. Time on unit

was identified in this study as making the most significant contribution to the multiple regression equation.

The third research question was: What coping strategies utilized by pediatric nurses in intensive care and nonintensive care pediatric units are associated with low burnout levels? A Pearson's product-moment correlation coefficient was used to correlate the coping subscale scores with the burnout subscale scores.

The fourth research question was: Are age, education, and experience predictive of burnout? Multiple regression analysis was used to determine if data on which information was collected (i.e., demographic data, type of educational program) are predictive of burnout level. According to Tabachnick and Fidell (1983), one of the most important uses for the regression analysis is in the prediction of scores on a dependent variable from data on an independent variable.

Collected data were analyzed to determine the answers to the four research questions. Research findings were used to draw conclusions concerning the relationship of coping behaviors of pediatric nurses and degree of burnout.

CHAPTER 4

ANALYSIS OF DATA

Coping behaviors and burnout levels of intensive care pediatric nurses compared to nonintensive care pediatric nurses were the focus of this study. Coping behaviors were identified by use of the Blake Coping Scale. Burnout levels were measured by use of the Maslach Burnout Inventory (MBI) (Maslach & Jackson, 1986). Data analyses are presented in this chapter.

The demographic data were used to describe the sample, and data were summarized by use of descriptive statistics. Descriptive statistics were also used to describe the participants' scores on the Blake Coping Scale and MBI. Data collected to answer the four research questions were analyzed by use of both descriptive and inferential statistics.

Description of the Sample

A total population sampling technique provided a sample of 79 pediatric nurses. Five subjects who did not meet the criteria and/or submitted incomplete questionnaires were eliminated; 74 subjects comprised the final sample. Of the 74 subjects, 41 participants were employed in intensive

care pediatric units and 33 were employed in nonintensive care pediatric units. The subjects were registered nurses who varied from 22 to 57 years of age (Table 8). The mean age of the subjects was 31.8 years. The sample received their nursing education from all three basic nursing programs.

For 26 (35.2%) of the total sample, basic nursing preparation was at the associate degree level (Table 8). For 34 (45.9%) nurses, basic preparation was at the baccalaureate level, and 14 (18.9%) nurses had a diploma as their basic degree. Of the 74 nurses, 29 (39.2%) had no nursing degree beyond the basic level. A highest degree of baccalaureate was reported by 36 (48.6%) of the nurses; 7 (9.5%) identified the master's as their highest educational preparation. There were 19 (46.3%) of the intensive care nurses whose basic educational preparation was at the baccalaureate level, compared to 15 (45.5%) of the nonintensive care nurses. Of the intensive care nurses, 22 (53.6%) had baccalaureate degrees as the highest degree earned, compared to 14 (42.4%) of the nonintensive care nurses.

The length of time the 74 subjects had been registered nurses varied from 1 to 20 years (Table 9). The mean length of licensure was 7.4 years for intensive care nurses and 7.6 years for nonintensive care nurses. The length of time

Table 8

Frequencies and Percentages of Age, Ethnicity, Basic Degree, and Highest Degree Reported by 74 Intensive Care and Nonintensive Care Nurses

Variables	Intensive Care Nurses		Nonintensive Care Nurses		Total	
	n	%	n	%	n	%
Age (Years)						
22-30	17	41.5	12	36.4	29	39.2
31-40	21	51.2	12	36.4	33	44.6
41-57	3	7.3	6	18.1	9	12.1
No Response	0	0.0	3	9.1	3	4.1
Total	41	100.0	33	100.0	74	100.0
Ethnicity						
Asian	17	41.5	6	18.1	23	31.0
Black	14	34.3	19	57.6	33	44.7
Caucasian	7	17.0	8	24.3	15	20.2
Hispanic	1	2.4	0	0.0	1	1.4
Others	1	2.4	0	0.0	1	1.4
No Response	1	2.4	0	0.0	1	1.4
Total	41	100.0	33	100.0	74	100.0
Basic Degree						
Associate	17	41.5	9	27.2	26	35.2
Baccalaureate	19	46.3	15	45.5	34	45.9
Diploma	5	12.2	9	27.3	14	18.9
Total	41	100.0	33	100.0	74	100.0
Highest Degree						
Basic[a]	12	29.3	17	51.5	29	39.2
Bachelor's	22	53.6	14	42.4	36	48.6
Master's	5	12.2	2	6.1	7	9.5
Other	2	4.9	0	0.0	2	2.7
Total	41	100.0	33	100.0	74	100.0

[a]No nursing degree beyond the basic level was reported by 12 intensive care and 17 nonintensive care nurses.

subjects had worked on their present unit varied from 1 to 10 years (Table 2). The mean length of time on the present unit was 3.2 years for intensive care nurses and 3.1 years for nonintensive care nurses.

Table 9

Frequencies and Percentages of Length of Licensure and Time on Unit Reported by 74 Intensive Care and Nonintensive Care Nurses

Variables	Intensive Care Nurses		Nonintensive Care Nurses		Total	
	n	%	n	%	n	%
Length of Licensure (Years)						
1- 5	11	26.8	15	45.5	26	35.2
6-10	24	58.5	10	30.3	34	45.9
11-15	4	9.8	2	6.1	6	8.0
16-20	2	4.9	5	15.1	7	9.5
No Response	0	0.0	1	3.0	1	1.4
Total	41	100.0	33	100.0	74	100.0
Time on Unit (Years)						
1- 5	35	85.4	25	75.8	60	81.1
6-10	5	12.2	7	21.2	12	16.3
No Response	1	2.4	1	3.0	2	2.7
Total	41	100.0	33	100.0	74	100.0

Intensive Care Nurse Sample

Of the total 74 nurse respondents who participated in this study, 41 (55.4%) were intensive care nurses. The types of pediatric units on which they worked varied: 14 (18.9%) nurses worked on pediatric intensive care units, 14 (18.9%) worked on neonatal intensive care units, and 13 (17.5%) worked on high risk nursery units. There were 40 (97.6%) females and 1 (2.4%) male in the intensive care group. The three groups of intensive care nurses were very similar in terms of age, length of licensure, and time employed on their present unit (Table 10).

Table 10

Means and Standard Deviations of Age, Experience, and Time on Unit Reported by 41 Intensive Care Nurses by Type of Unit

Variables	Pediatric Intensive Care Nurses (n = 14)		Neonatal Intensive Care Nurses (n = 14)		High Risk Nursery Nurses (n = 13)	
	M	SD	M	SD	M	SD
Age (Years)	30.71	5.02	32.07	3.35	33.92	6.32
Experience (Years)	7.35	3.20	7.46	2.90	7.14	4.27
Time on Unit (Years)	3.71	2.49	3.92	1.55	3.21	2.51

Nurses in the high risk nursery had the highest mean age, 33.9 years, but the lowest mean years of experience, 7.1, and time of employment on their present unit, 3.2 (Table 10). The pediatric intensive care nurses had the largest number of nurses (9; 12.1%) whose highest level of education was a baccalaureate degree. Of the 41 intensive care nurses, 8 (10.8%) of the neonatal intensive care nurses were prepared at the baccalaureate level and 4 (5.4%) were prepared at the master's level. Therefore, the overall educational preparation of the neonatal intensive care nurses was higher than the other two intensive care groups. The largest number of nurses (4; 5.4%) whose highest educational level was an associate degree were in the high risk nursery.

Nonintensive Care Nurse Sample

All of the 33 (44.6%) nonintensive care nurses who participated in this study were females. The mean age for the group was 31.27 years. The mean length of licensure was 7.5 years. The mean time of employment on present unit was 3.3 years. Of the total nonintensive care nurses, 14 (18.9%) listed the baccalaureate as their highest educational degree and 2 (2.7%) were prepared at the master's level. The nonintensive care nurses had 8 (10.8%) whose highest educational level was the associate degree and 9 (12.1%) were prepared at the diploma level.

Blake Coping Scale Scores

The Blake Coping Scale was used to identify the types of coping behaviors used by the two groups of nurses in this study. High scores on the subscales for Professionalism and Rational Action reflect effective coping, while low scores on the subscales for Emotional Avoidance, Fantasized Action, and Emotional Response indicate effective coping.

For Professionalism and Rational Action subscales, scores of 32 and over are categorized as effective and scores of 0-16 are considered ineffective coping behaviors. In this study, Professionalism scores varied from 23 to 46 for intensive care nurses and 24 to 49 for nonintensive care nurses. Rational Action scores varied from 24 to 44 for intensive care nurses and 23 to 44 for nonintensive care nurses. On the Emotional Avoidance subscale, scores of 0-16 are considered effective and scores of 32 and over are categorized ineffective. For the respondents, Emotional Avoidance scores varied from 18 to 30 for intensive care nurses and 15 to 35 for nonintensive care nurses. Fantasized Action subscale scores of 13 and over were categorized as effective and scores of 0-7 were classified as ineffective. Fantasized Action scores in this study varied from 7 to 18 for intensive care nurses and 7 to 19 for nonintensive care nurses. The maximum possible score for Emotional

Response was 30. Emotional Response subscale scores were categorized of 0-10 were considered effective and scores of 20 and over were termed ineffective. Emotional Response scores in this study varied from 9 to 22 for intensive care nurses and 8 to 18 for nonintensive care nurses. Scores which occurred in the middle range of each subscale were considered neutral.

Of the total sample of 74 nurses, 59 (79.7%) nurses used coping behaviors categorized as Professionalism in response to the situation on the coping scale (Table 11). A total of 55 (74.3%) nurses used behaviors categorized as Rational Action. The majority of the nurses (70; 94.6%) scored in the neutral area for Emotional Avoidance. Fantasized Action was the most frequently selected ineffective coping strategy: 38 (51.3%) nurses used Fantasized Actions as a coping strategy.

Professionalism strategies were selected less frequently by intensive care nurses (31; 75.6%) as compared to nonintensive care nurses (28; 84.9%) (Table 11). A larger number (31; 75.6%) of the intensive care nurses used more rationale action strategies than did nonintensive care nurses (24; 72.7%). The use of Emotional Avoidance as a coping strategy was evidenced by almost all (70; 94.6%) of the total sample scoring in the neutral area on the

Table 11

Frequencies and Percentages of Blake Coping Scale Scores of 74 Intensive Care and Nonintensive Care Nurses by Subscale

Subscales		Intensive Care Nurses		Nonintensive Care Nurses		Total	
		n	%	n	%	n	%
Professionalism							
Effective	32+	31	75.6	28	84.9	59	79.7
Ineffective	0-16	0	0.0	0	0.0	0	0.0
Neutral	17-31	10	24.4	5	15.1	15	20.3
Total		41	100.0	33	100.0	74	100.0
Rational Action							
Effective	32+	31	75.6	24	72.7	55	74.3
Ineffective	0-16	0	0.0	0	0.0	0	0.0
Neutral	17-31	10	24.4	9	27.3	19	25.7
Total		41	100.0	33	100.0	74	100.0
Emotional Avoidance							
Effective	0-16	0	0.0	1	3.0	1	1.4
Ineffective	32+	1	2.4	2	6.1	3	4.0
Neutral	17-31	40	97.6	30	90.9	70	94.6
Total		41	100.0	33	100.0	74	100.0
Fantasized Action							
Effective	0-7	1	2.4	0	0.0	1	1.4
Ineffective	13+	17	41.5	21	63.6	38	51.3
Neutral	8-12	23	56.1	12	36.4	35	47.3
Total		41	100.0	33	100.0	74	100.0
Emotional Response							
Effective	0-10	1	2.4	7	21.2	8	10.8
Ineffective	20+	1	2.4	0	0.0	1	1.4
Neutral	11-19	39	95.2	26	78.8	65	87.8
Total		41	100.0	33	100.0	74	100.0

subscale. The use of Fantasized Action as a coping strategy was higher in nonintensive care than intensive care nurses: 21 (63.6%) compared to 17 (41.5%), respectively. A larger number (39; 95.2%) of intensive care nurses used Emotional Response as a coping strategy than did nonintensive care nurses (26; 78.7%).

A *t*-test was performed to determine if there were significant differences in the mean scores on the Blake Coping Scale subscales between intensive care and nonintensive care pediatric nurses (Table 12). No significant differences between means were found.

Table 12

T-Test for Blake Coping Scale Subscale Mean Scores of 41 Intensive Care and 33 Nonintensive Care Nurses

Subscales	Intensive Care Nurses		Nonintensive Care Nurses		T-Value	*p*
	M	*SD*	*M*	*SD*		
Professionalism	37.6	4.15	37.1	5.21	.40	.692
Rational Action	34.7	4.14	34.7	4.87	-.02	.980
Emotional Avoidance	25.1	4.05	24.6	4.96	.43	.669
Fantasized Action	12.5	2.19	13.3	2.74	-1.25	.215
Emotional Response	14.3	2.79	13.3	3.05	1.52	.134

Maslach Burnout Inventory Scores

The Maslach Burnout Inventory (MBI) was used to measure burnout level of the nurses in this study. Each participant received a score for the subscales Emotional Exhaustion, Depersonalization, and Personal Accomplishment. Individuals with a high degree of burnout were expected to score high on the first two subscales and low on the last subscale. Average scores on all three subscales is indicative of an average degree of burnout. A low degree of burnout is characterized by low scores on the first two subscales and a high score on the last subscale (Maslach & Jackson, 1986).

The maximum scores possible on the MBI are 56 for the subscale of Emotional Exhaustion, 30 for Depersonalization, and 46 for Personal Accomplishment. For the Emotional Exhaustion subscale, scores of 27 or over are categorized as high, 17 to 26 as average, and 0 to 16 as low. For this sample, the scores for Emotional Exhaustion varied from 7 to 42 for intensive care nurses and 0 to 38 for nonintensive care nurses. For the subscale Depersonalization, scores of 13 or over are categorized as high, 7 to 12 are average, and 0 to 6 are low. In this sample, Depersonalization scores varied from 0 to 19 for intensive care nurses and 0 to 16 for nonintensive care nurses. For the subscale Personal Accomplishment, scores of 0 to 31 are categorized as high,

32 to 38 as average, and 39 or over as low. In this sample, Personal Accomplishment scores varied from 15 to 48 for intensive care nurses and 18 to 38 for nonintensive care nurses.

Of the participants in the total sample, 34 (46%) scored low on the Emotional Exhaustion subscale (Table 13). Sixty (81%) nurses scored in the low range for Depersonalization, and 28 (37.9%) scored in the high range for Personal Achievement.

Of the intensive care nurses, 24 (58.5%) experienced high to average degrees of emotional exhaustion compared to 16 (48.4%) of the nonintensive care nurses (Table 13). Seven (17.1%) of the intensive care nurses scored high to average on the Depersonalization subscale as compared to seven (11.8%) of the nonintensive care nurses. Of the intensive care nurses, 32 (78%) scored high to average on the Personal Accomplishment subscale as compared to 28 (84.9%) of the nonintensive care nurses. The nonintensive care nurses in this study had less emotional exhaustion and more feelings of personal accomplishment than did intensive care nurses. However, the nonintensive care nurses experienced more feelings of depersonalization than did intensive care nurses.

Table 13

Frequencies and Percentages of Maslach Burnout Inventory Scores of 74 Intensive Care and Nonintensive Care Nurses by Subscale

Subscales	Intensive Care Nurses		Nonintensive Care Nurses		Total	
	n	%	n	%	n	%
Emotional Exhaustion						
High (27 or over)	10	24.4	8	24.2	18	24.3
Average (17-26)	14	34.1	8	24.2	22	29.0
Low (0-16)	17	41.5	17	51.6	34	46.0
Total	41	100.0	33	100.0	74	100.0
Depersonalization						
High (13 or over)	1	2.4	2	6.7	3	4.0
Average (7-12)	6	14.7	5	15.1	11	15.0
Low (0-6)	34	82.9	26	78.8	60	81.0
Total	41	100.0	33	100.0	74	100.0
Personal Accomplishment						
High (0-31)	17	41.5	11	33.3	28	37.9
Average (32-38)	15	36.5	17	51.6	32	43.2
Low (39 or over)	9	22.2	5	15.1	14	18.9
Total	41	100.0	33	100.0	74	100.0

A *t*-test was performed to determine if there were significant differences in the mean scores of the MBI subscales for intensive care and nonintensive care pediatric nurses (Table 14). No significant differences in MBI

subscale mean scores were found between the groups in this study.

Table 14

T-Test for Maslach Burnout Inventory Subscale Mean Scores of 41 Intensive Care and 33 Nonintensive Care Nurses

Subscales	Intensive Care Nurses		Nonintensive Care Nurses		T-Value	*p*
	M	*SD*	*M*	*SD*		
Emotional Exhaustion	18.4	10.26	17.8	10.78	.44	.662
Depersonalization	4.0	3.58	4.8	4.33	-.93	.358
Personal Achievement	33.5	8.37	33.3	7.97	.11	.916

Findings

Coping behaviors and burnout levels of 74 registered nurses employed in intensive and nonintensive care pediatric units were identified in this study. Demographic variables were correlated with coping and burnout scores to examine the extent of their relationships to coping behaviors and burnout levels. An analysis of variance was performed to examine differences ($p \leq .05$) between and within groups on the demographic variables. The four research questions of this study were statistically analyzed.

Analysis of Demographic Variables with Scores from Coping and Burnout Scales

A Pearson's product-moment correlation coefficient was used to identify significant relationships between demographic variables of the sample and their subscale scores for coping and burnout. Significant negative correlations on the Blake Coping Scale subscores were found between several variables (Table 15). These variables were highest degree earned and Professionalism ($p \leq .05$); length of licensure and length of time on present unit of employment with Emotional Avoidance ($p \leq .05$ and $p \leq .01$, respectively); highest degree earned and Rational Action ($p \leq .05$); highest degree earned and length of licensure with Fantasized Action ($p \leq .05$); and age and length of licensure with Emotional Response ($p \leq .01$ and $p \leq .001$, respectively).

The only significant correlation found when the MBI scores were compared with demographic variables was between Personal Accomplishment and basic education. Personal Accomplishment correlated negatively ($r = -.225$; $p \leq .05$) with basic education.

An analysis of variance (ANOVA) was performed to determine if significant differences existed between and within the groups of intensive care and nonintensive care nurses on the subscale scores of the Blake Coping Scale and MBI and demographic variables. There was a significant

Table 15

Pearson Product-Moment Correlation Coefficients for Demographic Variables and Blake Coping Scale Subscales for 74 Pediatric Nurses

Blake Coping Scale Subscales	Age		Basic Degree		Highest Degree		Length of Registration		Time on Unit	
	r	*p*	*r*	*p*	*r*	*p*	*r*	*p*	*r*	*p*
Professionalism	-.125	.285	-.107	.361	-.240	.039*	.652	.581	.029	.323
Emotional Avoidance	-.053	.652	-.147	.209	-.189	.106	-.231	.048*	-.323	.005**
Rational Action	-.205	.080	-.094	.425	-.030	.030*	-.290	.048*	-.323	.770
Fantasized Action	-.154	.188	-.078	.508	-.270	.020*	-.239	.040*	-.150	.202
Emotional Response	-.306	.008**	-.181	.121	.154	.190	-.389	.001***	-.202	.083

*$p<.05$

**$p<.01$

***$p<.001$

difference in the Blake Coping Scale subscale scores of Emotional Avoidance and Emotional Response and the three basic educational levels of the nurses (Table 16). No significant difference was found between the four remaining subscale scores on the Blake Coping Scale and the MBI subscales and demographic variables.

Table 16

Analysis of Variance for Subscale Scores of Emotional Avoidance and Emotional Response on Blake Coping Scale According to Basic Education

Variable	SS	df	MS	F	p
Emotional Avoidance					
Between Groups	136.03	2	68.01	3.69	.029*
Within Groups	1307.75	71	18.41		
Emotional Response					
Between Groups	99.91	2	49.95	6.68	.002**
Within Groups	530.42	71	7.47		

*$p \leq .05$

**$p \leq .01$

A Scheffé post hoc test was performed to identify which group was significantly different. Nurses whose basic education was at the baccalaureate level had significantly higher scores on the Blake Coping Scale subscales of Emotional Avoidance (Table 17) and Emotional Response (Table

18) than did diploma prepared nurses. There were no significant differences between Emotional Avoidance and Emotional Response scores for baccalaureate and associate prepared nurses. Parametric and nonparametric statistical procedures were used to answer the four research questions formulated for this study. These findings are reported separately.

Table 17

Ordered Mean Differences for Scheffé Post Hoc Test for Scores on Emotional Avoidance Subscale of Blake Coping Scale According to Basic Education[a]

Degree	Group Means	22.35	24.88	26.05
Diploma	22.35	--	$F_1 = 3.16$	$F_2 = 7.40$*
Associate	24.88		--	$F_3 = 1.09$
Baccalaureate	26.05			--

*$p \leq .05$

[a]Critical Value of F = 7.38

Research Question 1

Do the coping strategies used by pediatric nurses in intensive care units differ from those used by pediatric nurses in nonintensive care units?

The Mann-Whitney U was used to examine differences between the two groups on the Blake Coping Scale subscales. No significant difference was found in the coping subscale scores

Table 18

Ordered Mean Differences for Scheffé Post Hoc Test for Scores on Emotional Response Subscale of Blake Coping Scale According to Basic Education[a]

Degree	Group Means	11.71	13.88	14.88
Diploma	11.71	--	F_1 = 5.74	F_2 = 13.40*
Associate	13.88		--	F_3 = 1.96
Baccalaureate	14.88			--

*$p \leq .05$

[a]Critical Value of F = 13.36

of intensive care and nonintensive care pediatric nurses (Table 19). The mean rank was higher for intensive care nurses on the Professionalism and Rational Action subscales which are both effective coping strategies. The mean rank was higher for intensive care nurses on the Emotional Avoidance and Emotional Response subscales which are both ineffective coping strategies. There was no significant difference in mean ranks which indicates differences were due to chance.

An ANOVA was performed to determine differences between and within groups on the subscale scores of the Blake Coping Scale. There was no significant difference between or within the groups on the coping subscale scores.

Table 19

Mann-Whitney U for Blake Coping Scale Subscale Scores of 41 Intensive Care Nurses and 33 Nonintensive Care Nurses

Subscale	Mean Rank	U	p
Professionalism			
Intensive Care Nurses	39.01	614.5	.49
Nonintensive Care Nurses	35.62		
Emotional Avoidance			
Intensive Care Nurses	38.54	634.0	.64
Nonintensive Care Nurses	36.21		
Rational Action			
Intensive Care Nurses	38.20	648.0	.75
Nonintensive Care Nurses	36.64		
Fantasized Action			
Intensive Care Nurses	34.98	573.0	.25
Nonintensive Care Nurses	40.64		
Emotional Response			
Intensive Care Nurses	40.46	555.0	.18
Nonintensive Care Nurses	33.82		

Research Question 2

What is the level of burnout in pediatric nurses who work in intensive care units compared to pediatric nurses who work in nonintensive care units?

A Mann-Whitney U test was performed to identify differences in burnout levels among nurses in the two groups. There were no significant differences in the MBI subscale scores between the two groups of nurses (Table 20). Mean ranks of intensive care nurses were higher on the Emotional

Table 20

Mann-Whitney U for Maslach Burnout Inventory Subscale Scores of 41 Intensive Care Nurses and 33 Nonintensive Care Nurses

Subscale	Mean Rank	U	p
Emotional Exhaustion			
Intensive Care Nurses	38.77	624.5	.57
Nonintensive Care Nurses	35.92		
Depersonalization			
Intensive Care Nurses	35.96	613.5	.49
Nonintensive Care Nurses	39.41		
Personal Accomplishment			
Intensive Care Nurses	37.46	675.8	.98
Nonintensive Care Nurses	37.55		

Exhaustion subscale and lower on the subscales of Depersonalization and Personal Accomplishment than were mean ranks of nonintensive care nurses. Lack of significance indicates the differences in mean rank occurred by chance.

An ANOVA was used to determine if there was a significant difference in burnout levels between and within groups of pediatric nurses in relation to the type of pediatric unit in which they worked (Table 21). There was no significant difference in burnout scores for the two groups used in this study.

An analysis of covariance (ANCOVA) was performed which factored out time on present unit to increase the power of

Table 21

Analysis of Variance for Maslach Burnout Inventory Subscale Scores by Group of 41 Intensive Care and 33 Nonintensive Care Nurses

Variable	SS	df	MS	F	p
Emotional Exhaustion					
Between Groups	108.53	1	100.53	.958	.331
Within Groups	8167.46	72	113.43		
Depersonalization					
Between Groups	.90	1	.90	.053	.818
Within Groups	1235.25	72	17.51		
Personal Accomplishment					
Between Groups	1.55	1	1.55	.024	.876
Within Groups	4574.21	72	63.50		

testing the remaining independent variables (Tabachnick & Fidell, 1983) (Table 22). When time on the unit was factored out, no significant differences in the means of the two groups on the burnout subscales were found.

Of the sample of 74 nurses, 34 (46%) had a high degree of Emotional Exhaustion. A low degree of Depersonalization was shown by 60 (81%) nurses, and 32 (43.2%) scored in the average range on Personal Accomplishment.

Burnout levels were obtained from scores on the MBI for both pediatric intensive care and nonintensive care nurses. Six (14.7%) of the intensive care nurses had scores indicative of a low degree of burnout (Table 23). One (2.4%) intensive care nurse had a score indicative of a high degree

Table 22

Analysis of Covariance on Maslach Burnout Inventory Subscale Scores of 41 Intensive Care Nurses and 33 Nonintensive Care Nurses

Variable	SS	df	MS	F	p
Emotional Exhaustion					
Equality of Adjustment					
Mean	84.01	1	84.01	.787	.377
Zero Slope	13.05	1	13.05	.122	.727
Error	7573.67	71	106.67		
Equality of Slopes	309.46	1	309.46	2.980	.088
Error	7264.20	70	103.77		
Depersonalization					
Equality of Adjustment					
Mean	.63	1	.63	.031	.859
Zero Slope	15.40	1	15.40	.776	.381
Error	1408.94	71	19.84		
Equality of Slopes	.51	1	.51	.025	.873
Error	1408.42	70	20.12		
Personal Accomplishment					
Equality of Adjustment					
Mean	2.22	1	2.21	.033	.085
Zero Slope	20.30	1	20.29	.310	.579
Error	4641.49	71	65.37		
Equality of Slopes	70.61	1	70.61	1.081	.302
Error	4570.87	70	65.29		

of burnout; 33 (80.5%) intensive care nurses had inconclusive patterns for their burnout scores. Of the nonintensive care nurses, 10 (30.3%) had scores which indicated a low degree of burnout. Of the nonintensive care unit nurses 1 (3%) showed a high degree of burnout and 21 (63.7%) had inconclusive patterns from their burnout scores.

Table 23

Frequencies and Percentages of Burnout Levels from Maslach Burnout Inventory Scores of 74 Intensive Care and Nonintensive Care Nurses

Burnout Levels	Intensive Care Nurses		Nonintensive Care Nurses		Total	
	n	%	n	%	n	%
High Degree	1	2.4	1	3.0	2	2.7
Average Degree	1	2.4	1	3.0	2	2.7
Low Degree	6	14.7	10	30.3	16	21.6
Inconclusive	33	80.5	21	63.7	54	73.0
Total	41	100.0	33	100.0	74	100.0

Research Question 3

What coping strategies utilized by pediatric nurses in intensive care and nonintensive care pediatric units are associated with low burnout levels?

A Pearson product-moment correlation coefficient was performed to determine the correlation between subscale scores on the Blake Coping Scale and subscales scores on the Maslach Burnout Inventory for this sample of 74 pediatric nurses (Table 24). Significant correlations were found between the following subscales: (1) Professionalism and Emotional Exhaustion; (2) Emotional Avoidance and Emotional Exhaustion; (3) Fantasized Action and Personal Accomplishment; and (4) Emotional Response and Emotional Exhaustion.

Table 24

Pearson Product-Moment Correlation Coefficients for Blake Coping Scale and Maslach Burnout Inventory

Blake Coping Scale Subscales	Maslach Burnout Inventory Subscales					
	Emotional Exhaustion		Depersonalization		Personal Accomplishment	
	r	*p*	*r*	*p*	*r*	*p*
Professionalism	-.301	.009**	-.128	.274	.378	.001***
Emotional Avoidance	-.291	.012*	.173	.140	.076	.519
Rational Action	-.027	.818	.097	.411	.210	.071
Fantasized Action	-.084	.473	.173	.140	.311	.007**
Emotional Response	.386	.001***	.115	.329	.042	.719

*$p \leq .05$

**$p \leq .01$

***$p \leq .001$

Coping scores were correlated with burnout scores for the 6 intensive care nurses and 10 nonintensive care nurses who were categorized as having a low degree of burnout (Table 25). Significant correlations were found between Personal Accomplishment on the MBI and Fantasized Action and Emotional Response subscales on the Blake Coping Scale. The correlations were positive. Rational Action was the

strategy used by 14 (87.5%) nurses in the total sample of nurses with scores indicative of a low degree of burnout. The most highly used ineffective coping strategy was fantasized action used by 7 (43.7%) nurses in the total sample of nurses with scores that indicated a low degree of burnout. The coping strategies which were associated significantly with a low degree of burnout in this sample were fantasized action and emotional response.

Table 25

Pearson Product-Moment Correlation Coefficients for Blake Coping Scale and Maslach Burnout Inventory Burnout Scores for the 6 Intensive Care and 10 Nonintensive Care Nurses with Low Degrees of Burnout

Blake Coping Scale Subscales	Maslach Burnout Inventory Subscales					
	Emotional Exhaustion		Depersonalization		Personal Accomplishment	
	r	p	r	p	r	p
Professionalism	-.177	.511	.057	.830	-.291	.273
Emotional Avoidance	.106	.696	.003	.990	.291	.273
Rational Action	-.210	.434	-.036	.890	-.097	.710
Fantasized Action	.096	.740	.119	.660	.690	.003**
Emotional Response	.420	.100	.090	.730	.590	.016*

*$p \leq .05$

**$p \leq .01$

Research Question 4

Are age, education, and experience predictive of burnout?

Multiple regression analysis was performed, as recommended by Maslach and Jackson (1986), to determine if age, education, and experience are predictive of burnout. Multiple regression analysis indicated that the best predictor of burnout level in the study population was amount of time the nurses had been employed on their present unit. The order in which the variables entered the equation for all three burnout subscales was: (1) time on unit, (2) basic degree, (3) highest degree earned, (4) age, and (5) length of licensure.

The demographic variables of age, education, and experience did not contribute significantly to the prediction of burnout scores (Table 25). Age, education, and experience accounted for 25.9% of the total variance in the Emotional Exhaustion subscale scores, 10.2% of the variance in the Depersonalization subscale scores, and 32.9% of the variance in the Personal Accomplishment subscale scores. The variable which contributed the most to the regression equation for all three subscales was time of employment for the subjects on the present unit. These findings indicated that the strongest relationship was between feelings of

personal accomplishment and the amount of time subjects had worked on their unit.

Table 26

Multiple Regression Analysis of Age, Education, and Experience and Maslach Burnout Inventory Subscale Scores for 41 Intensive Care Nurses and 33 Nonintensive Care Nurses

Variable	*r*	r^2	Standard Error	*F*	*p*
Emotional Exhaustion	.2593	.0672	10.44	.981	.435
Depersonalization	.1020	.0100	4.30	.143	.981
Personal Accomplishment	.3295	.1080	7.79	1.650	.157

Multiple regression analysis was performed to determine if the variables of age, education, and experience were predictive of burnout in the 16 nurses with a low degree of burnout. The order in which the variables entered the equation for all three burnout subscales was: (1) time on unit; (2) age; (3) highest degree; (4) basic degree; and (5) length of licensure.

Age, education, and experience did not contribute significantly to the prediction of burnout scores. However, time of employment of the subjects on the present unit was more strongly related to the burnout subscales for the low

burnout group of 6 intensive care nurses and 10 nonintensive care nurses than for the overall sample. Age, education, and experience accounted for 50.4% of the variance on the Emotional Exhaustion subscale, 61.1% of the variance on the Depersonalization subscale, and 52.5% of the variance on the Personal Accomplishment subscale (Table 27). Time of employment of the subjects on the present unit contributed the most to the regression equation for all three subscales. The findings indicated that in the nurses in this sample with a low degree of burnout, the strongest relationship was between impersonal feelings and time of employment on the subjects' present units.

Table 27

Multiple Regression Analysis of Age, Education, and Experience and Maslach Burnout Inventory Subscale Scores of 6 Intensive Care and 10 Nonintensive Care Nurses with Low Degree of Burnout

Variable	*r*	r^2	Standard Error	*F*	*p*
Emotional Exhaustion	.504	.254	7.50	.682	.647
Depersonalization	.611	.374	3.47	1.196	.377
Personal Accomplishment	.525	.276	7.27	.764	.595

Summary

The data collected on the 74 pediatric nurses in this sample were described and reported by use of descriptive and inferential statistics. No significant ($p \leq .05$) difference was found in coping strategies and burnout levels for intensive care pediatric nurses compared to nonintensive care pediatric nurses. A significant correlation was found between basic nursing educational level and the coping subscales of Emotional Avoidance and Emotional Response.

Of the sample of 74 intensive care and nonintensive care nurses, 16 nurses (6 intensive care and 10 nonintensive care nurses) met the criteria for a low degree of burnout as defined by Maslach and Jackson (1986). Of the 16 nurses, 14 used rational action most frequently as their coping strategy. The overall sample used professionalism most often as their coping strategy.

None of the 74 nurses had a pattern of behavior choices which clearly indicated the use of either effective or ineffective coping strategies. The ineffective coping strategy most frequently used was fantasized action. The most frequent effective coping strategy used was professionalism. Time of employment of the nurses on their present unit was found to be the demographic variable which best predicted burnout levels in this study.

CHAPTER 5

SUMMARY OF STUDY

This study was focused on coping behaviors and burnout levels of intensive care pediatric nurses compared to those of nonintensive care pediatric nurses. Specific coping behaviors which enabled pediatric intensive care and nonintensive care nurses to cope effectively with environmental and situational stressors, as evidenced by a reduced degree of burnout, were identified. Four research questions were also investigated:

1. Do the coping strategies used by pediatric nurses in intensive care units differ from those used by pediatric nurses in nonintensive care units?
2. What is the level of burnout in pediatric nurses who work in intensive care units compared to pediatric nurses who work in nonintensive care units?
3. What coping strategies utilized by pediatric nurses in intensive care and nonintensive care pediatric units are associated with low burnout levels?
4. Are age, education, and experience predictive of burnout?

In this chapter an overview of the study methodology is presented. The findings are then discussed, and conclusions

and implications of those findings are explored. Recommendations for further study are also offered.

Summary

This study was conducted by use of a nonexperimental, cross-sectional explanatory survey design. The independent variables of the study included coping strategies used by pediatric nurses and type of pediatric unit on which the nurses were employed. The dependent variable was level of burnout. Three instruments were used to collect data: the personal information sheet, the investigator-designed Blake Coping Scale, and the Maslach Burnout Inventory (Maslach & Jackson, 1986). A total population sampling technique was used to obtain a convenience sample of pediatric nurses in two large metropolitan hospitals. The sample consisted of 74 registered pediatric nurses who had been employed a minimum of one year on their present unit. There were 41 (55.4%) intensive care nurses and 33 (44.6%) nonintensive care nurses who participated in this study.

Data were analyzed using descriptive statistics for demographic variables to describe the sample and both parametric and nonparametric statistical procedures to answer the four research questions. There were no significant ($p \leq .05$) differences in types of coping strategies selected by the two groups of nurses. Of the 74 nurses, 16 (6 of 41

or 14.6% intensive care and 10 of 33 or 30.3% nonintensive care) nurses demonstrated a low degree of burnout. There was no significant difference in burnout levels between intensive care and nonintensive care pediatric nurses. Length of employment on the present unit was identified as the best predictor of burnout in this study's population.

Discussion of Findings

The discussion of findings of this study is focused on the types of coping strategies used by the two groups of pediatric nurses and how coping choices impacted on the degree of burnout. The nurses who participated in this study were a very homogenous group. Demographic data and scores on the two measurement instruments reflected that homogeneity. In this section, the demographic variables and the four research questions are discussed separately.

Relationship of Demographic Variables to Coping and Burnout

Significant correlations were found between several demographic variables and the coping subscales. There was a significant negative correlation (r = -.240) between the highest degree earned and the Blake Coping Scale subscale Professionalism. This finding indicated that as education level increased, professionalism decreased. Professionalism

behaviors are characterized by use of the organization structure to facilitate change and the tendency to meet role behavior expectations regardless of stressful feelings or experiences (Chiriboga, Jenkins, & Bailey, 1983). Of the 74 nurses in the sample, 43 (58.1%) had at least a baccalaureate degree. The findings indicated that education level did not contribute significantly to the use of professionalism as a coping strategy.

There were significant negative correlations in the length of licensure (r = -.231) and time on present unit (r = -.323) with the Blake Coping Scale subscale Emotional Avoidance. While the significant correlations were low, they were similar to the findings of Gribbins and Marshall (1982). These authors found that the nurses who worked on a unit for more than three years had developed the ability to use direct proactive actions to cope with stressors in the intensive care environment. Findings of the present study indicated that efforts to emotionally avoid environmental stressors decreased as nursing experience and familiarity with the work environment increased. A decline in the use of avoidance behaviors would be a positive consequence of using proactive strategies to cope with stressors.

A significant negative correlation (r = -.389) was found between length of licensure and the Blake Coping

Scale subscale Emotional Response. This finding supported those of Gribbins and Marshall (1982), Sande (1982), and Yasko (1983) who found that experience as a registered nurse resulted in a decrease in the use of emotional responses, such as anger, hostility, and withdrawal, to cope with stressful situations in the work environment. The significant correlation between length of licensure in this study and the use of emotional response as a coping strategy was not consistent with the findings in a study conducted by Jacobson (1983). Jacobson found no significant difference in coping strategies for variables such as length of time on unit, education, and experience.

There was a significant negative correlation between length of licensure and highest degree earned with the Blake Coping Scale subscale Fantasized Action. The findings indicated that the more experienced and better educated the nurses were, the less likely they were to engage in wishful thinking and to fantasize about how stressful situations could have been changed. The use of fantasized actions (Chiriboga et al., 1983) and an escape disposition (Jacobson, 1983) as adaptive coping strategies are undesirable coping choices.

Analysis of variance on the subscales for the Blake Coping Scale found a significant difference in coping scores

for emotional avoidance and emotional response among nurses whose basic educational preparation was at the baccalaureate level. The mean scores of baccalaureate prepared nurses on the Emotional Avoidance and Emotional Response subscales were significantly higher than those of diploma graduates. Chiriboga et al. (1983) and Jacobson (1983) reported no significant differences in the educational levels of nurses and type of coping strategies used in response to stressors.

The variables of age, education, and experience in the total sample were significantly correlated with the Personal Accomplishment Maslach Burnout Inventory (MBI) subscale in this study. As the basic education of the total sample increased, feelings of personal accomplishment decreased. While there was a low degree of association ($r = -.225$), it would appear that the higher education levels had a negative influence on feelings of personal accomplishment in the nursing role. According to Maslach (1982), persons experiencing burnout who have completed college generally experience less feelings of personal accomplishment than do colleagues with less education. The higher self-expectations that accompany increased educational levels often result in gaps between goals and actual achievements which may lead to decreased feelings of personal accomplishment. Therefore, it was expected that nurses with a low

degree of burnout would have increased feelings of personal accomplishment (Maslach & Jackson, 1986). However, in the group of 16 nurses in the present study who had a low degree of burnout, no significant correlation was found between the demographic variables of age, education, and experience and the MBI subscale Personal Accomplishment.

Research Question 1

There was no significant difference in coping scores for intensive care pediatric nurses compared to nonintensive care pediatric nurses in this study. The selection of behaviors indicative of professionalism by 59 (79.7%) of the 74 nurses in this study as the most frequently used coping choice did support the findings of Chiriboga et al. (1983). These authors found professionalism to be the coping behavior with the most positive coping outcome.

Rational action characterized by the use of direct action behaviors to cope with stressors was used by 55 (74.3%) of the nurses in this study. According to Chiriboga et al. (1983), nurses with favorable coping outcomes used both professionalism and cognitive rational strategies. The results of the present study are consistent with those findings. The strategies of professionalism and rational action were used but the difference in the use of these

strategies by intensive care nurses and nonintensive care nurses was not significant. The 55 (74.3%) nurses in this study who selected rational action strategies indicated a direct action approach to coping in a stressful environment or situation.

The results of the present study concurred with Gribbins and Marshall (1982) who found that nurses employed for more than three years in a neonatal intensive care unit used proactive strategies such as priority setting and confrontation to cope effectively with environmental and situational stressors. The mean length of employment for the intensive care pediatric nurses in this study was 3.2 years and they chose proactive coping behaviors more frequently than did the nonintensive care pediatric nurses.

Research Question 2

There was no significant difference in burnout levels in pediatric nurses who worked in intensive care units as compared to pediatric nurses in nonintensive care units. These findings supported those of Keane, Ducette, and Adler (1985) who found no difference in burnout between intensive care and nonintensive care nurses. However, Cronin-Stubbs and Rooks (1985) found that working in a critical care unit did not contribute significantly to burnout in their sample. There was no significant difference found in burnout levels

in intensive care and nonintensive care nurses in this study.

In the present study, the burnout scores on one MBI subscale, Emotional Exhaustion, were higher but not significant for intensive care nurses when compared to nonintensive care nurses. According to Maslach and Jackson (1986), emotional exhaustion is characterized by feelings of exhaustion and over extension in the work environment. The high stress level in intensive care units has been well documented in the literature (Edelwich, 1980; Gentry, Foster, & Froehling, 1972; Hay & Oken, 1972; Oskin, 1979).

Intensive care nurses in this study scored lower on the MBI subscale, Depersonalization, than did nonintensive care nurses, but the lack of significance indicates the differences were due to chance. Depersonalization was defined by Maslach and Jackson (1986) as "unfeeling and impersonal responses towards recipients of service, care, treatment, or instructions" (p. 2). In the present study, it was found that regardless of the level of emotional exhaustion, the intensive care nurses were still able to maintain a caring attitude towards clients as evidenced by low scores on the depersonalization subscale. Of the sample of nurses, 34 (82.9%) of the 41 intensive care nurses and 26 (78.8%) of

the 33 nonintensive care nurses had low scores on the Depersonalization subscale.

Intensive care nurses in this study scored lower on the MBI subscale Personal Accomplishment than did nonintensive care nurses. Personal accomplishment is characterized by feelings of competence and success in the job setting (Maslach & Jackson, 1986). Of the total sample, 17 (41.5%) intensive care nurses scored high on the Personal Accomplishment subscale as compared to 22 (33.4%) nonintensive care nurses. This finding indicated that the ability to function in the role of caregiver to critically ill clients did not necessarily foster feelings of competency.

As noted previously, in this study 6 intensive care nurses and 10 nonintensive care nurses had scores indicative of a low degree of burnout. There was no significant correlations between burnout scores and age, education, and experience in the low burnout group. Yasko (1983) found a significant negative correlation between age and burnout. However, the mean age of the nurses in Yasko's study was 34 years. The mean age of the low burnout group in this study was 32.8 years. The younger age of the burnout group could account for the lack of significant findings.

Research Question 3

Coping behavior which correlated significantly with a low degree of burnout in this study was fantasized action. A positive correlation (r = .690) was found between the Blake Coping Scale subscale Fantasized Action scores and the MBI subscale Personal Accomplishment scores of the 16 nurses who had a low degree of burnout. The high degree of association indicated that as the use of fantasized action as a coping behavior increased, feelings of personal accomplishment increased. The optimism which is inherent in the unrealistic expectations which accompany fantasized action may foster feelings of self-esteem and personal accomplishment in the face of strong evidence to the contrary. According to Maslach (1982), the depression which accompanies loss of self-esteem found in burnout results in reduced feelings of personal accomplishment.

A high positive correlation (r = .590) was found between emotional response and feelings of personal accomplishment. Characteristics of the low burnout group in this study were those possessed by a high burnout group in a study by Albrecht (1985). Albrecht found that the high burnout group used strategies that allowed flight both physically and emotionally from stress and stressors. The low burnout group in Albrecht's study ranked low on escape

strategies and high on activities that promoted involvement in the work environment and increased commitment to the nursing role. The low burnout group sought creative solutions to problems and were motivated to change situations related to job stress.

Four significant correlations for the entire sample between the coping and burnout scales were found in this study. A negative correlation (r = -.301) was found between the Blake Coping Scale subscale Professionalism and the MBI subscale Emotional Exhaustion. A positive correlation (r = .378) was found between Professionalism and the MBI subscale Personal Accomplishment. This finding indicated that with the use of professionalism behaviors for coping, emotional exhaustion decreased and feelings of personal accomplishment increased. This finding supported Albrecht's (1985) finding that feelings of satisfaction with nursing had a strong negative correlation with burnout.

A significant negative correlation (r = -.291) was found between the Blake Coping Scale subscale Emotional Avoidance and the MBI subscale Emotional Exhaustion. This finding supports Gribbins and Marshall's (1982) finding that nurses who cope adaptively tend to use more direct proactive strategies. Chiriboga et al. (1983) found that nurses who used emotional avoidance had less favorable coping outcomes.

In the present study, 40 (97.6%) intensive care nurses compared to 30 (90.9%) nonintensive care nurses had coping scores on the subscale Emotional Avoidance in the neutral range. This finding indicated a moderately high use of emotional avoidance by both groups as a coping strategy.

A significant positive correlation (r = .311) was found in this sample between the Blake Coping Scale subscale Fantasized Action and the MBI subscale Personal Accomplishment. The association between the two subscales is not as strong as that found in the low burnout group, but it does strengthen the link between fantasized action and personal accomplishment. There was a significant positive correlation (r = .386) between the Blake Coping Scale subscale Emotional Response and the MBI subscale Emotional Exhaustion in this sample. Maslach and Jackson (1986) indicated that the patterns of subscale scores could be the most meaningful index of burnout and the authors emphasized the need for more investigation to establish an empirical basis for combining the subscales. In this study, 54 (73%) of the nurses had inconclusive patterns on the three burnout subscales.

Research Question 4

The demographic variables of age, education, and experience did not contribute significantly in this study to the prediction of burnout. This finding supports those

of Keane et al. (1985) who found that demographic variables did not contribute significantly to variance in burnout scores in their sample. The mean age of the 6 intensive care nurses in the low burnout group in this study was 28.1 years as compared to 32.2 years for the entire group of 41 intensive care nurses. The mean age of the 10 nonintensive care nurses in the low burnout group of this study was 35.7 years as compared to 31.2 years for the entire group of 33 nonintensive care nurses. According to Yasko (1983), a higher degree of burnout was found in younger nurses. The results of the present study did not support that finding. The older mean age of nonintensive care nurses supported Yasko's finding of a negative correlation between burnout scores and age.

Yasko (1983) found the best predictors of burnout were: (1) job satisfaction; (2) stress level in the work environment; (3) feelings of apathy and withdrawal; and (4) adequacy of psychological support in the work environment. Keane et al. (1985) found that a characteristic called "hardiness" was predictive of burnout. According to Kobasa, Maddi, and Kahn (1982), "the personality disposition of hardiness are committment, control, and challenge" (p. 169). The variable which contributed the most to the prediction of

burnout scores in this study was length of employment on present unit.

The mean length of time on present unit in this study was 3.2 years for the 41 intensive care nurses and 3.1 years for the 33 nonintensive care nurses. The mean length of time on present unit for the 16 nurses with a low degree of burnout was 3.3 years. Time on the present unit was most highly associated with the MBI subscale Personal Accomplishment. However, only 32.9% of the total variance for Personal Accomplishment could be accounted for by age, experience, and education. In comparison, age, experience, and education accounted for 52.5% of the variance on the Personal Accomplishment subscale and 61.1% of the variance on the Depersonalization subscale for the low burnout group. Variance in Emotional Exhaustion attributed to age, education, and experience was 50.4% for the low burnout group as compared to 25.9% for the entire group.

The variables entered the regression equation in a different order for the group of 16 low burnout nurses as compared to the 74 nurses in the total sample. The second variable to enter the equation was age for the low burnout group as compared to basic degree for the entire sample. The mean age of the low burnout group was 32.8 years as compared to 31.8 years for the total sample in this study.

The mean age of the low burnout group of 6 intensive care nurses was 28.1 years as compared to 32.2 years for the entire 41 intensive care nurses. The mean age of the 10 low burnout nonintensive care nurses was 35.7 years as compared to 31.2 years for the 33 nonintensive care nurses. This finding indicated that low burnout was found in younger, less experienced intensive care nurses and older, more experienced nonintensive care nurses.

Conclusions and Implications

The focus of this study was on coping strategies of intensive care and nonintensive care pediatric nurses in response to situational and environmental stressors. Based on the findings of this study, the following conclusions were formulated:

1. Pediatric nurses in intensive care and nonintensive care units most often use effective coping strategies.
2. Pediatric nurses in intensive care and nonintensive care units do not experience high degrees of burnout.
3. Nurses who cope positively and have a low level of burnout use more direct proactive coping strategies.
4. The use of ineffective coping behaviors by nurses decreases with experience.
5. Level of education is not related to the use of professionalism as an effective coping behavior.

The need for pediatric intensive care and nonintensive care nurses to develop and maintain behaviors which facilitate adaptive coping to stress has implications for nursing practice, education, and research. The following implications have been formulated based on the findings of this study:

1. Programs which facilitate the development and consistent use of effective coping strategies such as professionalism and rational action should be provided to the nursing staff to increase their ability to cope with stress.
2. Positive feedback on personal accomplishments should be used to foster feelings of competence and success in the work environment.
3. The development and consistent use of positive coping behaviors by nurses should be included in nursing curriculums. In addition, the use of effective coping behavior in response to environmental and situational stressors should be taught and reinforced in the clinical setting during the educational process.

Recommendations for Further Study

The findings of this study resulted in the following recommendations for further study:

1. Replication of the study should be done with a larger sample drawn from a more heterogeneous population to maximize variability and increase generalizability of the findings.
2. Personal and behavioral characteristics of nurses with a low degree of burnout should be investigated to identify variables that can be associated with reduced burnout.
3. Problem-solving and decision-making skills should be taught to the nurses in this study and changes in their level of burnout after the teaching has been completed should be evaluated to determine if acquisition of those skills reduce burnout.
4. The Blake Coping Scale should be revised and retested on a larger more, heterogeneous sample to increase its reliability and validity as a measure of effective coping behaviors.
5. Research is needed into factors which influence feelings of competence and success in the work environment. The reason nurses who are not experiencing a high degree of burnout continue to have decreased feelings of personal accomplishment needs to be investigated.
6. A system to categorize irregular patterns of scores on the three Maslach Burnout Inventory subscales should be developed to more effectively identify burnout levels.

7. Measures of role performance other than burnout should be investigated to determine if they are more closely related to effective coping behaviors.

REFERENCES

Abdellah, F., & Levine, E. (1979). Better patient care through research. New York: MacMillian Publishing.

Albertus, G., Guildner, F., & Pollard, D. (1980). Psychological aspects of pediatric care. In N. Simon (Ed.), The psychological aspects of intensive care nursing (pp. 119-147). Bowie, MD: Robert J. Brady Co.

Albrecht, T. (1982). What job stress means for the staff nurse. Nursing Administration Quarterly, 7(1), 1-10.

American heritage dictionary of the English language. (1981). Boston: Houghton Mifflin Company.

Applebaum, S. (1981). Stress management for health care professionals. Rockville, MD: Aspen Publications.

Aquilera, D., & Messick, J. (1982). Crisis intervention. St. Louis: C. V. Mosby Co.

Bandura, A., & Adams, N. (1977). Cognitive processes mediating behavioral change. Journal of Personality and Social Psychology, 35, 125-139.

Bell, J. M. (1977). Stressful life events and coping methods in mental illness and wellness behaviors. Nursing Research, 26, 136-140.

Bieliauskas, L. (1982). Stress and its relationship to health and illness. Boulder, CO: Westview Press.

Bilodeau, C. (1973). The nurse and her reaction to critical care nursing. Heart and Lung, 2, 358-363.

Bourbohnais, F., & Baumann, A. (1985). Stress and rapid decision making in nursing: An administrative challenge. Nursing Administration Quarterly, 9(3), 85-90.

Buechler, D. (1985). Help for the burned-out nurse. Nursing Outlook, 33, 181-185.

Burgess, A., & Baldwin, B. (1981). Crisis intervention theory and practice. Englewood Cliffs, NJ: Prentice-Hall Co.

Caplan, G. (1964). Principles of preventive psychiatry. New York: Basic Books.

Cassen, N., & Hackett, T. (1972). Sources of tension for the CCU nurse. American Journal of Nursing, 72, 1426-1430.

Champion, D. (1981). Basic statistics in social research. Scranton, PA: Chandler Publishing Co.

Chiriboga, D., Jenkins, G., & Bailey, J. (1983). Stress and coping among hospice nurses: Test of an analytic model. Nursing Research, 32, 294-298.

Coelho, G. (1980). Environmental stress and adolescent coping behaviors: Key ecological factors in college student adaptation. In I. G. Sarason & C. Spielberger (Eds.), Stress and anxiety (pp. 247-261). Washington: Hemisphere Publishing Co.

Cohen, S. (1985). Cognitive processes as determinants of environmental stress. Issues in Mental Health, 7, 65-75.

Consolvo, C. (1979). Nurse turnover in the newborn intensive care unit. JOGN, 8, 208-204.

Cronin-Stubbs, D., & Rooks, C. (1985). The stress, social support, and burnout of critical care nurses: The results of research. Heart and Lung, 14, 31-38.

Dear, M., Weisman, G., Alexander, C., & Chase, G. (1982). The effect of the intensive care nursing role on job satisfaction and turnover. Critical Care Nurse, 11, 560-565.

Duxbury, M. (1981). Role of the nurse in neonatology. In G. V. Avery (Ed.), Neonatology: Pathophysiology and management of newborns (pp. 49-52). New York: Human Sciences Press.

Duxbury, M., & Thiesson, V. (1979). Staff nurse turnover in neonatal intensive care units. Journal of Advanced Nursing, 4, 591-602.

Edelwich, J. (1980). Burnout: Stages of disillusionment in the helping profession. New York: Human Sciences Press.

Eisendarth, S., & Dunkel, J. (1979). Psychological issues in intensive care unit staff. Heart and Lung, 8, 752-758.

Folkman, S., & Lazarus, R. (1979). An analysis of coping in a middle age community. Journal of Psychosomatic Medicine, 21, 219-239.

Freudenberger, H. J. (1974). Staff burnout. Journal of Social Issues, 30, 17-29.

Freudenberger, H. J. (1975). The staff burnout syndrome in alternative institutions. Psychotherapy: Theory, Research and Practice, 12, 73-82.

Gardner, D., Parzen, L., & Stewart, N. (1980). The nurse's dilemma: Mediating stress in critical care units. Heart and Lung, 9, 103-106.

Gentry, W., Foster, S., & Froehling, S. (1972). Psychological response to situational stress in intensive care and non-intensive care nursing. Heart and Lung, 1, 793-796.

Gentry, W., & Parkes, R. (1982). Psychologic stress in intensive care and non-intensive care unit nursing: A review of the past decade. Heart and Lung, 11, 43-47.

Gorney, D. (1985). Maintenance of sensory equilibrium for the critical care nurse. Topics of Clinical Nursing, 6(4), 44-50.

Gribbins, R., & Marshall, R. (1982). Stress and coping in NICU staff nurses: Practical implications for change. Critical Care Medicine, 10, 865-867.

Harris, J. (1984). Stress in critical care. Critical Care Nurse, 4, 84-95.

Hartl, D. (1979). Stress management and the nurse. Advances in Nursing Science, 1(4), 91-96.

Hay, D., & Oken, D. (1972). The psychological stress of intensive care unit nursing. Psychosomatic Medicine, 34, 109-118.

Holsti, O. (1979). Limitations of cognitive abilities in the face of crisis. In Studies in Crisis Management. Toronto: Butterework & Co.

Huckabay, L., & Jagla, B. (1979). Nurses' stress factor in the intensive care unit. Journal of Nursing Administration, 2, 21-26.

Jacobson, S. (1983). Stress and coping strategies of neonatal intensive care unit nurses. Research in Nursing and Health, 6, 33-39.

Keane, A., Ducette, J., & Adler, D. (1985). Stress in ICU and non-ICU nurses. Nursing Research, 34, 231-236.

Kobasa, S. (1979). Stressful life events, personality and health: An inquiry into hardiness. Journal of Personality and Social Psychology, 37, 1-11.

Kobasa, S., Maddi, S., & Kahn, S. (1982). Hardiness and health: A prospective study. Journal of Personality and Social Psychology, 42, 168-177.

Kramer, M., & Schmalenberg, C. (1979). Coping with reality shock: The voice of experience. Wakefield, MA: Nursing Resources.

Lavandero, R. (1981). Nurse burnout: What can we learn? Journal of Nursing Administration, 11(11-12), 17-22.

Lazarus, R. (1966). Psychological stress and the coping process. New York: McGraw-Hill.

Lazarus, R. (1974). Psychological stress and coping in adaptation and illness. International Journal of Psychiatry in Medicine, 5, 321-333.

Lazarus, R. (1985). The psychology of stress and coping. Issues in Mental Health, 7, 399-409.

Lazarus, R., Cohen, J., Folkman, S., Kanner, A., & Schaefer, C. (1980). Psychological stress and adaptation: Some unresolved issues. In H. Selye (Ed.), Selye's guide to stress research, Vol. 1 (pp. 90-113). New York: Van Nostrand Reinhold Co.

Miller, K. (1983). Neonatal and pediatric critical care nursing. New York: Churchill Livingston Inst.

Moos, R. (1976). Human adaptation: Coping with life crisis. Lexington, MA: D. C. Heath & Co.

Muldary, T. (1983). Burnout and health professions: Manifestations and management. Norwalk, CT: Appleton-Century-Croft.

Oskin, S. (1979). Identification of situational stressors and coping methods by intensive care nurses. Heart and Lung, 5, 953-960.

Patrick, P. (1981). Health care worker burnout: What it is, what to do about it. Chicago: Blue Cross Association.

Pearlin, L., & Schooler, C. (1978). The structure of coping. Journal of Health and Social Behavior, 19, 2-21.

Pender, N. (1982). Health promotion in nursing practice. Norwalk, CT: Appleton-Century-Crofts.

Polit, D., & Hungler, B. (1983). Nursing research: Principles and methods. Philadelphia: J. B. Lippincott.

Price, D., & Murphy, P. (1985). Emotional depletion in critical care staff. Journal of Neurosurgical Nursing, 17(2), 114-117.

Robischon, P. (1967). The challenge of crisis theory for nursing. Nursing Outlook, 15(7), 28-32.

Rotter, J. B. (1966). Generalized expectancies for internal versus external control or reinforcement. Psychological Monographs: General and Applied, 80(Whole No. 609).

Roy, C. (1976). Introduction to nursing: An adaptation model. Englewood Cliffs, NJ: Prentice-Hall.

Roy, C. (1984). Introduction to nursing: An adaptation model. Englewood Cliffs, NJ: Prentice-Hall.

Sande, D. (1983). Preventing burnout in intensive care nurseries. Pediatric Nursing, 9, 364-366.

Selye, H. (1974). Stress without distress. New York: J. B. Lippincott.

Selye, H. (1976). The stress of life. New York: McGraw-Hill.

Seligmen, M. (1975). Helplessness. San Francisco: W. H. Freeman & Co.

Seuntjens, A. (1982). Burnout in nursing--what it is and how to prevent it. Nursing Administration Quarterly, 7(1), 12-18.

Simon, N. (1980). The psychological aspects of intensive care nursing. Bowie, MD: Robert J. Brady Co.

Smith, J. (1983). Pediatric critical care. New York: Wiley Medical Publications.

Storlie, F. (1979). Burnout: The elaboration of a concept. American Journal of Nursing, 79, 2108-2111.

Strauss, A. (1968). The intensive care unit: Its characteristics and social relationships. Nursing Clinics of North America, 3(1), 7-15.

Sutterley, D., & Donnelly, G. (1982). Coping with stress. Rockville, MD: Aspen Publications.

Tabachnick, B., & Fidell, L. (1983). Using multivariate statistics. New York: Harper and Row.

Tache, J., & Selye, H. (1985). On stress and coping mechanisms. Issues in Mental Health, 7, 3-23.

Vestal, K. (1981). Pediatric critical care. New York: Wiley Medical Publications.

Vreeland, R., & Ellis, L. (1969). Stresses on the nurse in an intensive care unit. JAMA, 208, 332-334.

Walker, C. (1982). Neonatal intensive care and stress. Archives of Disease in Childhood, 57, 85-88.

Waltz, C., Strickland, O., & Lenz, E. (1984). Measurement in nursing research. Philadelphia: F. A. Davis Co.

Yasko, M. (1983). Variables which predict burnout experienced by oncology clinical nurse specialists. Cancer Nursing, 6(4), 109-116.

APPENDIX A

QUESTIONNAIRE PACKET

Dear Colleague:

I am a doctoral student at Texas Woman's University. I am conducting researach to examine behaviors and job related attitudes of nurses. I am asking you to participate in this study by completing two questionnaires.

All information provided on the questionnaire will remain confidential. To minimize the possible risk of embarrassment and loss of confidentiality, your name and institution of employment will not appear in any part of the reports. Do not sign your name on the questionnaires.

The potential risk from participating in this study would be anxiety from increased awareness of behaviors and attitudes concerning pediatric nursing. You may contact me at 797-0722 if you have any concerns or questions about the study.

If you agree to participate in the study, you are free to withdraw and discontinue participation at anytime without intimidation or penalty.

No medical service or compensation are provided by Texas Woman's University or the Harris County Hospital District as a result of injury from participation in this research.

COMPLETION OF THE QUESTIONNAIRES CONSTITUTES INFORMED CONSENT TO ACT AS A SUBJECT IN THIS RESEARCH.

I appreciate your participation in the study.

Sincerely

JoAnn Blake

JoAnn Blake R.N.,M.S.

PERSONAL INFORMATION SHEET

1. Your age:_____ years

2. Sex: (1)_____Male

   (2)____Female

3. Are you (check only one group):
   (1) Asian___
   (2) Black___
   (3) Caucasian___
   (4) Native American___
   (5) Hispanic___
   (6) Other (please specify)_____

4. Martial status:
   (1)single_____
   (2)married____
   (3)divorced___
   (4)widow/widower___

5. First nursing degree ?
   (1) AA/AD_____
   (2) BS_____
   (3) Diploma ____

6. Highest degree earned?

   (1)Bachelors___
   (2)Masters____
   (3)Doctorate___
   (4)Other (please specify)_____

7. How long have you been employed as a registered nurse?_____

8. How long have you worked on your present unit?_____

9. Identify the type of unit on which you are employed (Check only one).

   (1)General Pediatric Unit____

   (2)Pediatric Intensive Care Unit___

   (3)Neonatal Intensive Care Unit___

   (4)High Risk Nursery____

BLAKE COPING SCALE

READ THE FOLLOWING SITUATION:

A pediatric intensive care unit has been understaffed with a high census for six months.The nurses frequently work double shifts in order to provide adequate coverage for the unit.

A baby's condition begins to deteriorate rapidly.The physician on call has been paged.The infant's mother walks into the unit and demands a nurse stay at the bedside. Additional help is requested from the supervisor but the nurses are told no one is available.

The baby is cyanotic by the time the doctor reaches the bedside and dies shortly after the doctor arrives. The doctor tells the charge nurse that if the baby had been monitored more closely,the child might have lived.

Indicate how likely you would be to use each of the strategies listed below in response to the situation given by circling the appropriate number.

STATEMENTS	NEVER	SELDOM	SOME TIMES	OFTEN	Always
1. Talk over the stressful events with coworkers.	1	2	3	4	5
2. Accept my own limitations. and do nothing.	1	2	3	4	5
3. Seek additional information about the situation.	1	2	3	4	5
4. Draw on past nursing experiences to cope with the present situation.	1	2	3	4	5
5. Try to avoid involvement in the situation.	1	2	3	4	5
6. Become physically ill. (i.e. headache, upset stomach)	1	2	3	4	5
7. Seek emotional support from coworkers	1	2	3	4	5
8. Try not to think about the event once it is over.	1	2	3	4	5
9. Resign myself to accept the situation.	1	2	3	4	5
10. Eat more	1	2	3	4	5

	NEVER	SELDOM	SOME TIMES	OFTEN	ALWAYS
11. Seek solutions to resolve stressful situations.	1	2	3	4	5
12. View the situation as a challenge.	1	2	3	4	5
13. Attempt to set goals that would facilitate problem resolution.	1	2	3	4	5
14. Examine my professional goals.	1	2	3	4	5
15. Involve the head nurse and/or supervisor in the problem solving process.	1	2	3	4	5
16. Try not to focus on my personal feelings about the situation.	1	2	3	4	5
17. Become irritable and defensive.	1	2	3	4	5
18. Keep my feelings to myself.	1	2	3	4	5
19. Wish I could change what happened	1	2	3	4	5
20. Withdraw from the situation.	1	2	3	4	5
21. Use relaxation techniques.	1	2	3	4	5
22. Try to justify the situation to the physician.	1	2	3	4	5
23. Leave the stressful area and/ or unit for a short period to relect on the event.	1	2	3	4	5
24. Hope things get better.	1	2	3	4	5
25. Let the supervisor solve the problem.	1	2	3	4	5
26. Become angry	1	2	3	4	5
27. Seek policies that will change the work environment	1	2	3	4	5

	NEVER	SELDOM	SOME TIMES	OFTEN	ALWAYS
28.Consider transfer to a another unit.	1	2	3	4	5
29.Resign if transer to a another unit is not possible.	1	2	3	4	5
30.Blame nursing service for their inability to provide more staff for the unit.	1	2	3	4	5
31.Make another request for additional staff.	1	2	3	4	5
32.Consider part time employment .	1	2	3	4	5
33.Evaluate the events to determine what actions could have facilitated a postive change in the situation.	1	2	3	4	5
34.Focus on what nursing actions could have altered the situation.	1	2	3	4	5
35.Try to keep the situation in perspective.	1	2	3	4	5
36.Anticipate that stressful events beyond your control will occur during the work day	1	2	3	4	5
37.Ask someone you respect for advice.	1	2	3	4	5
38.Prepare emotionally for other stressful events during the day by focusing on postive aspects in the work environment.	1	2	3	4	5
39.Discuss the situation or events with the medical staff.	1	2	3	4	5
40.Tryout different ways of resolving problems.	1	2	3	4	5

MASLACH BURNOUT INVENTORY

This 22-item questionnaire, entitled Human Services Survey, was designed by Maslach and Jackson. The present form of the instrument was copyrighted in 1986, and information and copies may be purchased from the following source:

Consulting Psychologists Press, Inc.
577 College Avenue
Palo Alto, CA 94306

APPENDIX B

AGENCY APPROVAL

HARRIS COUNTY HOSPITAL DISTRICT

DISTRICT ADMINISTRATION
726 GILLETTE
HOUSTON, TEXAS 77019
652-1200

BEN TAUB GENERAL HOSPITAL
1502 TAUB LOOP
HOUSTON, TEXAS 77030
791-7000

COMMUNITY HEALTH PROGRAMS
726 GILLETTE
HOUSTON, TEXAS 77019
652-1240

JEFFERSON DAVIS HOSPITAL
1801 ALLEN PARKWAY
HOUSTON, TEXAS 77019
751-8000

P.O. BOX 66769 - HOUSTON, TEXAS 77266 (713) 751-8500

January 22, 1987

Jo Ann Blake
Prairie View A&M University
6436 Fannin
Houston, Texas 77030

RE: Coping Strategies of Intensive Care and Non-Intensive Care Pediatric Nurse in Response to Situational and Environmental Stressors

Dear Ms. Blake:

This letter is written to inform you that your research project was reviewed by the Joint Conference Committee.

You have permission to proceed with your project.

Sincerely,

Lois Jean Moore

Lois Jean Moore
Administrator
Jefferson Davis Hospital

LJM:rcb

"Caring is what we do best"