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WORK GROUP CULTURE, WORKPLACE STRESS, AND HOSTILITY: CORRELATIONS WITH ABSENTEEISM AND TURNOVER IN HOSPITAL NURSES

by

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DISSERTATION

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DEDICATION

This dissertation is dedicated to my father, Louis Eugene Seago (1918-1985), who was always my friend and mentor.

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WORK GROUP CULTURE, WORKPLACE STRESS, AND HOSTILITY: CORRELATIONS WITH ABSENTEEISM AND TURNOVER IN HOSPITAL NURSES

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The purpose of this study was to describe the relationship between work group culture and nursing unit outcomes, specifically absenteeism and turnover. Secondary purposes were to describe (a) the relationship between workplace stress and these nursing unit outcomes and (b) the relationship between hostility and these nursing unit outcomes.

This study was a descriptive correlational design and was conducted at five full-service tertiary care university teaching hospitals on the West coast of the United States. The unit of analysis was the nursing unit. All adult inpatient medical/surgical and specialty nursing units were admitted to the study if 25% of the nursing staff who work 20 hours per week or more completed the questionnaires.

A total of 67 nursing units with 622 individuals were entered into the study. The typical participant was a white, female RN with an average age of 36.3 years. Participants had averages of 11.1 years experience in nursing, 6.8 years in the hospital, 4.9 years in the nursing unit, and 7.1 years in the nursing specialty. Participants worked an average of 11.0 hours per day and 35.2 hours per week and had a BSN or AD as their basic nursing preparation with the baccalaureate as the highest degree.

Work group culture was defined as a pattern of shared values and assumptions and demonstrated by behaviors of a group that have developed over time as a way to solve problems in order that the group may survive, and measured by the Organizational Culture Inventory (OCI) (Cooke & Lafferty, 1987). Workplace stress was defined as job strain resulting from the interaction of the demands of the work situation and the range of decision making freedom or control available to the worker, and measured by the Job Content Questionnaire (Karasek, 1979). Hostility was defined as a stable individual

personality trait characterized by chronic hate, anger, and a suspicious view of the world, and measured by the Cook and Medley Hostility Scale (Cook & Medley, 1954).

There was a significant negative correlation ($r = -.268$. $p = .028$) between decision latitude, part of the job strain model, and absenteeism. There were no statistically significant correlations between work group culture or hostility and absenteeism or turnover, nor were there other significant correlations between job stress and absenteeism or turnover.

All of the nursing units displayed a constructive work group culture and all of the units had a lower than average score for hostility. The study indicated that nursing is a high decision latitude/high psychological demand occupation and not an occupation that is defined as having job strain.

A major implication of the study is that nurse managers, when making management decisions, should take into account the notion that the work group culture in the units is generally constructive and staff members are generally low in hostility. Nurse managers can keep in mind that an environment with greater decision latitude for the staff members will also be an environment with less the absenteeism. Another implication of the study is the need to refine or develop measurement instruments for job stress and organizational culture that detect more subtle differences among nursing units.

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CHAPTER I

THE STUDY PROBLEM

Introduction to the Problem

Although organizational culture frequently has been studied in the business community, there are far fewer studies of organizational or work group culture in hospital nursing units (Coeling & Simms, 1993; Schein, 1990). The studies that have been done using nursing units have emphasized the need to understand the individual work group culture before successfully implementing innovation, change, educational programs, or hiring and orienting new employees.

Organizational culture has been defined as work group culture when studied at the small group level (Coeling, 1990). Some studies have been done investigating nursing unit culture as an element in the environment in which nursing is practiced. Coeling and Simms (1993) described culture as the "pattern of behaviors developed by groups to solve work-related problems and survive in their jobs" (p. 48). Coeling and Wilcox (1988), using an anthropologic, ethnographic method, found that understanding a work group's culture could assist the nurse manager or administrator in making decisions about hiring and orienting new people, making changes in the unit, and teaching new information.

Work group culture, for this study, can be defined as a pattern of shared values and assumptions and demonstrated by behaviors of a group that have developed over time as a way to solve problems in order that the group may survive (Cooke & Lafferty, 1987).

Using the Organizational Culture Inventory (OCI) in seven different hospitals, McDaniel and Stumpf (1993) found that the nurses generally were moderately constructive, as defined by their measurement instrument, but that there were a substantial number of nurses who had passive-defensive or aggressive-defensive scores. Constructive culture can be characterized as people-centered, participative, promoting successful interpersonal relationships, valuing members who set and accomplish goals, and encouraging both creativity and individual growth. Passive-defensive cultures promote avoidance of conflict

and conformity, have substantial bureaucratic control, use centralized decision-making, and punish mistakes, but fail to reward success. Aggressive-defensive cultures promote confrontation and negativism, reward for controlling subordinates and being responsive to superiors, reward for winning or out-performing others, and for perfectionism, persistence, and working long hours (Cooke & Lafferty, 1987) These researchers recommended using this information to redesign work units and empower nurses.

Barron, Hollender, and Smith (1992) argued that cost reductions should be made by taking into account the organizational and nursing unit culture and that problem solutions should be tailored to the individual unit culture. Curran and Miller (1990) presented the case that corporate culture has an effect on nurse retention. They maintained that "In order to take advantage of positive energy in a particular corporate culture, it is first necessary to be able to perform a cultural assessment accurately" (p. 541). Several investigators have described the organizational or work group culture as the "personality" of the organization or work group (Coeling, & Wilcox, 1988; Gillies, Franklin, & Child, 1990) and take the position that culture is an unseen but powerful force in the group (Coeling, 1990; Coeling & Simms, 1993).

In reviewing the nursing and nursing management literature, little information has been found regarding the management of a nursing unit that has a conflicted, troubled, or ineffective environment. Nursing management can be a series of very complex and intimate relationships between and among individuals. These relationships can become intensely emotional, depending on the context of the interactions. Because of the nature of their positions, nurse managers encounter numerous uncomfortable emotions, including anger and hostility. In highly charged settings, where passions are evident and emotions ragged, nurse managers may often be unskilled in recognizing and dealing with these emotions. Recognizing anger and hostility in individuals is an important first step in dealing with those emotions in a manner that is constructive for patients, employees, the nurse manager, and the organization. Recognizing and effectively managing angry and

hostile people is also necessary in order to move toward organizational goals and objectives.

The literature does include articles that give advice to nurses and nurse managers on how to deal with anger or hostility, but these articles typically do not cite research to substantiate the advice. Although not explicated, these articles use psychoanalytic theory as the basis for most of the advice, such as labeling student nurses as passive-aggressive and advising how to manage them, using up excess "angry energy," and encouraging people to "ventilate" their feelings (Davidhizar, 1983; Davidhizar & Farabaugh, 1987; Durald, 1980; Grainger, 1990). In an introduction to a series of articles on anger in the clinical setting, Buschmann (1985) commented, "Because we could not validate much of the material in this series, we came to the realization that we are venturing into essentially unexplored territory" (p. 315).

Wilkinson (1987/1988) reported anger in nurses as the result of moral distress in frustrating patient care situations. The two most common coping behaviors for nurses were "to deny responsibility for the situation... and/or to believe they were able to have some control over and effect on patient-care situations" (p. 23). Both this study and one by Morath, Casey, and Covert (1985) presented the problem of angry nurses as a nursing administrative issue, and specifically related it to staff turnover and job satisfaction. Duldt (1981) framed anger in nurses as alienating communication, especially from nursing administrators and managers as well as physicians, and proposed that this alienating communication was a variable in staff turnover.

But the study of anger in individual nurses does not entirely address the issue of the troubled nursing unit. Troubled or conflicted nursing units are not just defined by one or two angry nurses. Rather there is a combination or a number of combinations of individuals and events. Variables that may be associated with such an environment include burnout, conflict, poor morale, job dissatisfaction, stress, and Type A behavior pattern (Appelberg, Romanov, Honkasalo, & Koskenvuo, 1991; DiBattista, 1991; Duldt, 1982;

Thomas & Williams, 1991). Stress, as perceived by individual nurses, has been studied in nursing units and related to variables such as burnout, anxiety, certain coping behaviors, absenteeism and turnover (Cronin-Stubbs & Rooks, 1985; Gentry & Parkes, 1982; Maloney & Bartz, 1983; Pasternak, 1988). The idea of stress seems to be linked in the literature to the troubled or conflicted nursing unit.

The concept that seems to most completely address the idea of the troubled or conflicted work unit is organizational or workgroup culture. There is, however, little written about the cultures of nursing units associated with organizational outcomes and how best to manage those cultures. One reason for the limited research into the cultures of nursing units may be that the concept of organizational culture is abstract and difficult to define (Thomas, Ward, Chorba, & Kumiega, 1990). It also may be that the difficulty of measuring variables associated with this concept has limited research efforts. A third reason may be the reluctance of nurses and nurse managers to discuss some of the negative behaviors and emotions that are associated with the troubled nursing unit.

Nurse managers in hospitals have one of the most difficult positions in the organization (Adams, 1991). The nurse manager is put in the position of trying to meet the often conflicting needs of various customers, including patients, staff nurses, physicians, and hospital and nursing administration (Nyberg, 1991). The role has been described as pivotal (Frisch, Dembeck, & Shannon, 1991), essential to the success of the hospital (Bunsey, De Fazio, Pierce, & Jones, 1991), and increasingly complex and sophisticated every day (Kerfoot & Neumann, 1992). Areas of stress included lack of resources, workload, and powerlessness (Frisch, Dembeck, & Shannon, 1991). There is widespread agreement that the role of the head nurse or nurse manager is becoming more demanding and will require more leadership skills and education than in the past (Adams, 1991; Bunsey, DeFazio, Pierce, & Jones, 1991). Knowledge of issues related to work group culture can help the nurse manager in decisions related to instituting change, hiring, orientation of new staff, and design of practice structures.

The nurse manager has an important role in creating and defining the work group culture of the unit. Nurse managers, like leaders in other areas, are expected to have a clear vision and visibility, and be a risk-taker and a generator of enthusiasm (Shaw, 1989). Some writers have called for transformational leadership, which is defined as individual consideration, charisma, and intellectual stimulation (McDaniel & Wolf, 1992). This is a tall order for a nurse manager who may or may not have had education and training in management. But the qualities of a "transformational leader" are necessary if nurse managers are to help define the culture of their units. Knowing how to interpret the culture to determine readiness for change, how to make change, and when to make it is a skill that is becoming more essential (Everson-Bates, 1992; Shaw, 1989). A nurse manager can set the tone of a unit and help direct and set the stage for an effective nursing unit.

There is some evidence to indicate that the culture or atmosphere of a nursing unit may have an impact on organizational outcomes related to cost, such as absenteeism, turnover, and injuries (Jones, 1990a, 1990b; Ragsdale, Burns, & Houston, 1991). Stress in nursing units has been linked to these issues and stress level of a work unit helps define the culture of the unit. Revicki and May (1989) found that organizational climate, supervisor behavior, and work group relations influenced role perception in hospital nurses and that role ambiguity and organizational environment influenced job stress. Three studies by Taunton, Krampitz, and Woods (1989a, 1989b, 1989c) indicated that middle manager motivation, power, influence, and leadership style had an impact on retention of professional staff. A study by Loveridge (1988) demonstrated that retention of nurses could be linked to organizational designs, such as decentralization at the unit level, a more autonomous nursing staff, and less rigid personnel policies. Besides making the work place more or less comfortable, work group culture can also be related to organizational outcomes affecting costs, such as absenteeism and turnover.

Purpose

The purpose of this study is to describe the relationship between work group culture and nursing unit outcomes, specifically absenteeism and turnover. Secondary purposes are to describe the relationship between workplace stress and these nursing unit outcomes and the relationship between hostility and these nursing unit outcomes.

Nursing units within the same hospital can, and do, exist with different unit environments, cultures, and values (Coeling & Wilcox, 1988). All units have a work group culture that influences events and people existing and interacting in that unit. This culture can exist along continua from positive to negative and from weak to strong (Thomas, Ward, Chorba, & Kumiega, 1990). When the culture is strongly positive, the unit and those in it are able to grow and progress toward mutually defined goals. When the culture is strongly negative, there can be workplace conflict, sabotage of efforts, increased absenteeism, staff turnover and manager turnover, and staff withdrawal (DiBattista, 1991). When the culture is weakly positive or negative, there is likely to be uncertainty with unclear norms and expectations. The unit may be in turmoil, possibly with different factions struggling for control (Peters & Waterman, 1982). This study investigates variables that may serve as potential markers for nursing units with cultures that exist with both positive and negative organizational outcomes.

Significance

Several leading nursing organizations have determined research priorities in nursing. In 1981, the American Nurses' Association (ANA) included as one of its recognized research priorities "designing and developing health care systems that are cost-effective in meeting nursing needs for the population" (cited in Larson, 1984, p. 355). In 1985, the ANA listed as a research goal "to generate knowledge about the well-being and optimum functioning of human beings, the effective delivery of nursing services, excellence in nursing education and the impact of the profession on health policy" (cited in Styles, 1990, p. 206). In the ANA's statement of an agenda of health care reform a need is described to

restructure health care services "to create a better balance between the prevailing orientation toward illness and cure and a new commitment to wellness and care" (ANA, 1991, p. 8).

Poulin (1984) detailed new directions in nursing administration and called for an "understanding of the need for research not only in clinical practice but in organizational restructuring for delivery of care..." (p. 40). In 1987, one of the priorities of nursing administration research was nursing department structures and how to relate those structures to productivity (Henry, Moody, Pendergast, O'Donnell, Hutchinson, & Scully, 1987). The National Center for Nursing Research has listed a set of criteria to determine the most critical nursing research priorities. One of these criterion is "An area with potential for nursing research to make a unique contribution is the resolution of a health care or system problem or phenomenon" (cited in Bloch, 1990, p. 5). The American Association of Critical-Care Nurses (AACN) includes on their list of research priorities issues related to appropriate orientation of new nurses, methods to lessen burnout among nurses, and effective ways of reducing stress in critical care (cited in Funk, 1989).

In all these statements, there is a recognition of the need for nurse managers and administrators to implement change and innovation and to create a work environment that is satisfactory for nurses, patients, and other health care providers. In general, the most important word in management of all types is change. The rapid and ever changing environments of health care will force management to create new policies and institute new work designs (Guest, 1986, p. 63). Essential to the successful implementation of change of any kind is an understanding of the culture of the group that needs to make the change. Change is difficult in the best of cases, and implementing change without knowledge and awareness of the culture of the group can be precarious.

The problem of instituting change or changing a work group culture exists as a very real problem for nurse managers and nurse administrators. Increasing knowledge about the phenomenon of change and how to intervene successfully to initiate change would facilitate the practice of nursing administration. Knowledge of the appropriate management

techniques of nursing unit culture could assist the manager in hiring personnel, orienting newcomers, facilitating change, and promoting learning (Coeling & Wilcox, 1988).

The cost of replacing an experienced nurse has been estimated to range from $2500 to $50,000 (Droste, 1987; Jones, 1990a, 1992; Loveridge, 1988). Absenteeism and work-related injuries also add to the cost of staffing a nursing unit. Reducing turnover, hiring successfully, and effectively orienting newcomers would result in a cost savings to the institution. It also would have an impact on the effectiveness of the functioning of the unit and, eventually, on patient outcomes.

Although the development of theory in nursing administration has not been a priority for the profession in the past, it has begun to assume a more prominent position in recent years. The growth of the health care industry has placed a large burden on nursing administrators who must deal with economic and political realities that were not in evidence as recently as 10 years ago. Organizational theories and management models are necessary to the practice of nursing administration, but often they are not sufficient to explain, predict, and prescribe the practice of nursing administration. Without a nursing perspective, the nurse administrator is an administrator but nothing more (Jennings & Meleis, 1988). In the past, clinical nursing specialties have relied heavily on the medical and disease models of healthcare. Those specialties have then had to ask, "What is it that nurses contribute that is unique? What is it that nurses contribute that other disciplines do not contribute?" Relying solely on theory from management or administrative models mirrors what clinical nursing specialties have done in relationship to the medical model (Jennings & Meleis, 1988). If nursing administrators rely solely on management or administrative theory, we are forced to ask, "What is it that nurse administrators contribute that other administrators do not contribute?"

Jennings (1987) wrote that it is necessary to extend the domain concepts into the area of administration. The term domain has been defined in a number of ways. A domain can be said to "contain major problem areas of a field,...(it) delineates its units of analysis,... it

is a synthesis of a number of paradigms,...(and it contains) the norms and tools that guide the discipline" (Meleis, 1985, p. 182). It is generally accepted that the four domain concepts of nursing are person, health, nursing, and environment (Meleis, 1985).

Jennings (1987) believed that application of theory in administration was often used primarily to guide patient care. The guiding of patient care by nursing theory is obviously necessary, but the use of nursing theory in administration should not stop at that point. The practice of nursing administration can also be guided by nursing theory, and one way to begin this process is to delineate the domain concepts in the nursing administration arena.

Trandel-Korenchuk (1986) has stated that the first step of theory development in nursing research is concept development. To build theory, the relationships between concepts must be identified and studied. Concepts then can be developed as they relate to the central domain concepts in nursing for the purpose of building an administrative theory that is also a nursing theory. Work group culture can be thought of as being related to the central domain concept of environment.

One major contribution of this study to nursing research is the potential identification of variables related to work group cultures in nursing units associated with certain organizational outcomes. Another contribution lies in the identification and validation of a measurement instrument that could be administered to staff nurses and nurse managers to identify the cultures of nursing units. The media and management consultants have popularized and, at times, trivialized the idea of organizational culture and changed organizational culture into gimmick. As the CEO of one large health maintenance organization said, "Okay, if we need to change the culture, then change it!" (B. Sams, personal communication, September, 1990). However, organizational culture needs further study if managers are to more fully understand the variables that are related to organizational and work group culture in nursing units. Such understanding will aid in the

CHAPTER II

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

Introduction

This chapter presents an overview of the literature related to the milieu of the hospital environment, selected hospital nursing job characteristics, staff member characteristics, and organizational outcomes. This review and critique of the literature is specifically related to work group culture, work place stress, the emotions of hostility and anger, nurse manager time, staff absenteeism due to illness, turnover, and work-related injury. This chapter also contains the conceptual framework of the study, its specific research questions, and hypotheses.

Literature Review

Environmental Milieu Characteristics

The Hospital Environment

The concept of environment is broad and varied, and boundaries must be placed on the term for it to have meaning. The dictionary defines environment as "the surrounding conditions, influences, or forces that influence...the organism...and ultimately determine its form and survival...the aggregate of social and cultural conditions (as customs, laws, language, religion, and economic an political organization) that influence the life of an individual or community" (Webster, 1986, p. 760). When speaking of living things, one can speak of both an internal and external environment, and these categorizations can be further subdivided into numerous divisions. Human beings interact in multiple ways with their environment-from the physiological interactions related to maintaining life, to the psychological and social interactions that determine how life is experienced. Lindheim (1983) has said that "the environment is a result of the constant interaction between natural and man-made spatial forms, social processes, and relationships between individuals and groups...People are an essential part of the environment; they are as real as trees." (p. 337).

Person and environment are two of the generally accepted domains of nursing (Meleis, 1985). Meleis has written that understanding the interaction between person and environment can be useful to nurses and nurse administrators (Meleis, 1985; Meleis & Jennings, 1988). With the exception of Nightingale and Rogers, nurse theorists generally have not made environment a focus of their thought or study (Chopoorian, 1986; Topf, 1984) yet, environmental impact is very important to health, especially in vulnerable populations (Williams, 1988). Many groups are affected by the adverse environments in which they exist. These environments include factories, classrooms, offices, freeways, and hospitals (Topf, 1984). Two very significant parts of the external environment with which people interact are the home and the workplace. Since the environment can have an impact on health, it is important to consider the interactions that people have with these settings. Nurses would be advised to become more active in advocating for patients' issues concerning the environment. Perhaps nurses could then reconceptualize their own environment, the hospital, in relationship to their own health (Chopoorian, 1986).

In the United States, the traditional method of administering most organizations has been patriarchal and hierarchical, that is, run by a father figure in the position of authority and organized in the style of a family. The various members in the organization have relationships like a family and some members have more power and status than others (Ashley, 1976; Faludi, 1991; French, 1992; Gordon, 1991). Patriarchy is part of the social and cultural environment in the United States and has an impact on peoples' lives and health. Lindheim (1983) has written that in hierarchies "those lower in status have higher rates of disease at any relative level of poverty or affluence (p. 344). Historically, the traditional organization of the family in this country has been patriarchal, with wives and children taking the names of the husband and father, and the father making the majority of decisions and exercising most of the control. One type of organization that has generally been managed in a traditional hierarchical patriarchal manner is the hospital.

Ninety-seven percent of registered nurses in the United States are female and 66% of registered nurses in the United States work in hospitals (Roberts, Minnick, Ginzberg, & Curran, 1989). In most hospitals, the principal decision makers have been physicians or other older white males who maintain a paternalistic style of leadership in a hierarchical organizational structure. The facilities have been managed like families in which employees filled various family member roles. Haddon (1989) has said that, until 30 years ago, the hospital had an administrator who often was a retired elderly physician and a director of nursing who was an older woman and the two ran the organization like a family. They were the "father" and "mother," and the staff and patients were "cared for" and expected to be obedient and harmonious. This leads to the question of whether nursing settings are "matriarchal" which might be a question for future studies.

Health care organizations have become increasingly more complex, and health care is frequently referred to as a "business." The demands on the nurse administrator and nurse manager have become greater, and it has become more difficult for them to function in the financial, political, and administrative arenas demanded by the business of health care (Blair, 1976). Many nurse administrators and managers or potential nurse administrators and managers have prepared themselves in business administration, public health administration, or public administration (Moore, Biordi, Holm, & McElmurry, 1988). Some come to nursing management positions with the associate degree as the only nursing preparation in their background (Poulin, 1984). These administrators may sometimes be unprepared or uninterested in using nursing knowledge to guide decisions that are made in the practice area of nursing (Dimond & Slothower, 1978). Nurse administrators and nurse managers act to influence their work environments, but the influence that the nurse manager or administrator has on the environment may not reflect the perspective of nursing or nurses (Meleis & Jennings, 1989).

Much of the early research in nursing has been related to inquiry about nurses and their behavior. Donaldson and Crowley (1978) believed that this research cannot be considered

nursing research because it does not study patient or client issues. It may be thought of, however, as the beginning of research in nursing administration and may serve as a transition to present day research in nursing administration. Nursing administration has relied heavily on organizational theories to guide practice. The organizational theories of Lawrence and Lorsch, McGregor, Likert, and Herzberg have been used to describe, explain, and prescribe the practice of nursing administration (McClure, 1984a, 1984b). Often, these theories are adopted without adequate testing to see if they have the same usefulness in nursing organizations as they do in non-nursing organizations (Dimond & Slothower, 1978).

Culture

Culture has been variously defined and is difficult to specify because of its abstract nature. It has been likened to snow, in that it covers everything and is quiet and subtle in manner, or to a kaleidoscope, in that there can be a wide variety of cultural patterns that develop in groups that interact over time (Coeling & Simms, 1993). The study of culture traditionally has been the purview of the anthropologist and the sociologist who used methodologies such as ethnography to study other groups of people (Hall, 1973).

Although work had been done earlier on related concepts, the notion of organizational culture or corporate culture really captured the imagination of management in the United States in the early 1980s. It was at this time that managers became aware that Japanese industry was doing something very right and that the United States might learn something from them. Several popular books on management, such as In Search of Excellence (Peters & Waterman, 1982) , The Change Masters (Kanter, 1983), Corporate Cultures (Deal & Kennedy, 1982), and Theory Z (Ouchi, 1981), were published at this time and everyone was ready to embrace the concept of organizational culture. Like many good ideas that involve change, some managers thought changing culture meant changing everyone except themselves. Others thought changing culture was as easy as telling the

organizational development department to "change the culture." As a result, the idea of organization culture slipped to a short lived but clever management fad.

The notion of organizational culture change as a quick fix for management problems may have been a fad, but the study of culture and the concept of work place culture in hospital nursing units can be helpful to nurse managers trying to navigate through a progressively more uncertain environment (Kilmann, Saxton, & Serpa, 1985b).

Organizational culture has been defined by Schein (1985) as

> a pattern of basic assumptions-invented, discovered or developed by a given group as it learns to cope with its problems of external adaptation and internal integration-that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems.(p. 9)

Kilmann, Saxton, and Serpa (1985a) have defined culture as

> the shared philosophies, ideologies, values, assumptions, beliefs, expectations, attitudes and norms that knit a community together. All of these interrelated psychological qualities reveal a group's agreement, implicit or explicit, on how to approach decisions and problems...Culture is manifest in behavioral norms, hidden assumptions and human nature, each occurring at a different level of depth. (p. 5)

Van Maanen and Barley (1985) have described culture as a set of solutions (behaviors) created by a group to solve problems in their situation. Coeling and Simms (1993) maintained that culture is not just a behavior or a few behaviors, but a pattern of behaviors unique to a group. Deal and Kennedy (1982) said that culture is "the way we do things around here" (p. 4).

Writers have differentiated the term "organizational culture" from "organizational climate", although there is some overlapping in the definitions. Organizational climate refers to properties or perceptions of the work environment that seem to influence the behavior and motivation of the individuals who work in that environment (Gillies,

Franklin, & Chile, 1990). These properties or perceptions of the work environment can include autonomy, innovation, control, work pressure, task orientation, and physical comfort (Flarey, 1991; Gillies, Franklin, & Chile, 1990; Moos, 1986). The focus of organizational climate is on organizational attributes rather than individual attributes (Duxbury, Henly, & Armstrong, 1982). These attributes can, in some cases, be "stressors" or stressful stimuli. Schein (1990) has said that climate is "only a surface manifestation of culture" (p. 109). "Climate, rather than culture, reflects perceptions of organizational structures and how it *feels* to be a member of the organization. In contrast, beliefs regarding how to *behave* are aspects of culture" (Cooke & Rousseau, 1988, p. 251). Organizational climate has been investigated in terms of outcome variables, including job satisfaction, patient-to-staff ratio, and work performance (Duxbury, Henly, & Armstrong, 1982; Flarey, 1991).

The relative strength or weakness of culture in an organization is the subject of discussion and assumptions in many of the management articles and books that describe organizational culture. Schall (1983) defined a strong culture as one in which "the members share rule-based expectations, based on experience in the group, that are congruent with their shared value or ethical system" (p. 575). Schein (1984) defined the strength or amount of culture by the homogeneity and stability of the group and the length and intensity of shared experiences. Yet, he goes on to say that strength does not necessarily correlate with organizational effectiveness. Strong cultures also have been defined as thick and widely shared, cohesive and tight-knit, and coherent (Saffold, 1988). Several writers have posited that strong cultures are better, but it is not at all clear that strength improves the culture of an organization. A company may have a strong culture that is preventing the company from dealing effectively with the present day marketplace (Deal & Kennedy, 1982; Peters & Waterman, 1982; Schein, 1984).

Schein (1990) described three levels in which culture manifests itself: observable artifacts, values, and basic underlying assumptions. The artifacts of a culture are readily

observable and include the physical layout, how people dress, and statements of philosophy. Values include charters of statements of philosophy, ideologies, and norms, such as what the organization espouses and documents. Basic underlying assumptions are those that are never questioned but just *are*. These are the issues that, when people are asked "why," the reply is "that's just the way it is." People usually are unaware of such assumptions unless they are challenged or questioned by individuals outside the culture (Schein, 1990).

Subcultures in organizations are those groups within an organization that develop as a result of some degree of stability and a history of problem solving (Schein, 1985). Martin and Siehl (1989) described three types of subcultures: enhancing, orthogonal, and counter culture. An enhancing subculture is one that shows more adherence to the organizational core values than the rest of the organization. Orthogonal subcultures share the core values and have, as well, a separate and nonconflictual set of values. Counter cultural subcultures present a direct challenge to the key values of the dominant culture (Martin & Siehl, 1989). Counter cultures also are ways of thinking that are in conflict with other subcultures. If a subculture rewards its members for getting along with each other at the expense of performance, a counter culture can be said to exist (Cook & Rousseau, 1988). "Counter cultures arise due to *differentiation* and insularity...when a unit is protected from the pressures of the larger organization... by some...boundary-creating feature...(it) tends to continue as long as that boundary and the resulting sense of separateness and isolation exist" (Cooke & Rousseau, 1988, p. 249).

Hospital Nurses and Culture

Like many organizations, hospital cultures are made up of numerous subcultures. Subcultures in hospitals can be departments, nursing units, professional groups, or functional or project groups (Deal, Kennedy, & Spiegel, 1983). Unlike many organizations, hospitals have been characterized as having weak or fragmented cultures (Nystrom, 1993) and of rarely having a strong or excellent culture. The weak or

fragmented culture of the hospital may be related to the number of stable and strong subcultures within the hospital (Bice, 1984). Hospitals often are seen as a hodgepodge of subcultures, some weak and some strong, some effective and some ineffective.

Different cultures or subcultures can develop in different nursing units within the same hospital, and these subcultures can be called "work group culture" (Coeling & Simms, 1993). Nursing units in which counter cultures might be predicted include those isolated and insulated from routine hospital patients or policies because of their patient populations, manager, geography, or some other "specialness." Examples of units isolated by clothing and special entryways might be critical care units, emergency departments, or surgical suites.

Nurse managers have an influence on the cultures of their units, and some writers have maintained that a unit's culture is "largely determined by the actions, values, and management style of the nurse manager on the unit" (Curran & Miller, 1990, p. 540). Yet, there now are too many influences on a nursing unit to believe that the nurse manager still has that much control or power. Nursing managers do have a degree of influence on the cultures of their units but so do other individuals, including physicians, union officials, powerful staff members, patients and families, administrators, and personnel from various departments. Little research has been done on the cultures of nursing units, although there is a recognition in the nursing administration literature of the importance of organizational culture. In order to be a more successful nurse manager, it would be prudent to have some awareness and knowledge of the notion of organizational and workplace culture. Del Bueno and Vincent (1986) concluded that people search for meaning and order in a world that is chaotic and uncertain and that the successful manager will become organizationally acculturated.

Using an ethnographic methodology, Coeling and Wilcox (1988) studied the work group cultures of an urology-renal unit and an oncology unit and compared the units in relationship to the perceptions of working together, telling others what to do, following

established standards, use of time, psychosocial perspective, and change. The researchers concluded that neither unit culture was "better" or "worse" than the other, but only that they were different in a number of these areas. Coeling and Simms (1993) studied 33 nursing units in three hospitals, with a total of 607 participants representing a variety of nursing specialties. At least 67% of all staff on each unit participated in the study. They used the results to indicate the wide differences of cultural norms for behaviors among different nursing units in the same hospital. The study results also were used to support the notion that innovation must be planned differently for different nursing units, even in the same institution (Coeling & Simms, 1993).

The Organizational Culture Inventory (OCI) is based on interpersonal or task-related styles. The OCI is comprised of twelve distinct but interrelated styles, which are further grouped into three empirical factors: people-security or passive/defensive; task-security or aggressive/defensive; and a satisfaction or constructive culture. A more detailed discussion of the OCI will be presented in Chapter Three. Thomas, Ward, Chorba, & Kumiega (1990) used the OCI to study the culture of a metropolitan community hospital. Fifty-six of the 225 nurses at the hospital completed the survey. Although this did not provide a complete picture of the hospital culture, it did provide an assessment of the culture of the institution. The culture of the institution tended to be constructive as measured by the OCI. The cultures of individual nursing units in the hospital were not reported. McDaniel and Stumpf (1993) evaluated seven acute care hospitals using the OCI with 209 subjects. The total possible subjects was not reported. This study found that the cultures of the hospitals were moderately constructive, as defined by the OCI, but relatively weak. The investigators concluded that a study of the cultures would be helpful to nursing administrators in change involving work redesign and empowerment of nurses. Even though the total possible sample is not reported in the McDaniel and Stumpf (1993) study, it is apparent that, in both studies, the sample of subjects was less than 50% of the total

nursing staff. Therefore, the sample may not be representative of the larger population and may not give an accurate representation of the organizational culture.

Job Characteristics

Stress

People have been using the concepts of harmony and balance for many years. Claude Bernard used the term "internal milieu," and Walter Cannon defined the stability of the internal milieu as homeostasis (cited in Mason, 1975a; Selye, 1950). The word "stress" has been in common usage for many years and has been used in a number of different ways. In the biological sciences, stress sometimes has been used to mean that thing which disrupts a physiological balance as well as the response of the organism to the disruption. Terms that have been adopted to reduce the confusion between event and response include "stressor" or "stress stimulus," which can be thought of as an event that interrupts physiological balance and "stress response," which is the organism's mechanisms to reestablish the balance (Sapolsky, 1992).

Hans Selye popularized the concept of stress after a failed experiment with animals to discover a new sex hormone. During the experiment, Selye found that noxious stimulants injected into the bodies of animals produced a stress response, which he called the "general adaptation syndrome" (Selye, 1936). Selye (1950) divided this syndrome into three temporal phases, the alarm reaction, the stage of resistance, and the stage of exhaustion, and theorized that the response was a general nonspecific response by the organism to any stressful stimulus. Familiar conditions that have some relationship to the chronic stress response include fatigue, hypertension, coronary artery disease, gastric ulcers, impaired disease resistance; with profound chronic stress there even can be a disruption in the reproductive process and in the growth process (Sapolsky, 1992; Selye, 1950).

Despite Selye's general adaptation syndrome theory, there still are questions about individual differences in the response to various stressors. Originally overshadowed by Selye's work, a number of investigators have raised the issue of psychological stress and

its impact on the stress response. Lazarus and Folkman (1984) posed the processes of cognitive appraisal and coping as mediating factors in psychological stress between the person and the environment. Cognitive appraisal is the name given to the process that determines if the transaction is stressful; coping is the process used by the person to manage the demands of the transaction (Lazarus & Folkman, 1984). In this sense, coping can be thought of as the stress response.

There is support for the idea that individuals differ in their reactivity to stress, that stress is determined by the perception of the stressful situation, and that the extent of stress depends partly on the capability of the individual to cope (Mason, 1975b; Mikhail, 1981). Researchers have demonstrated that uncertainty or novelty and negative emotions appear to be pathways that channel the nonspecific physiological responses and create individual differences in the stress response (Gunnar, 1987).

In a comprehensive literature review on gender differences in cognitive coping styles to stress, Miller and Kirsch (1987) found no gender differences in adults' expectations of future success or failure, little evidence to support differences in negative views of the world, and few studies to support a difference between men and women in having irrational thoughts, cognitive distortion, or information processing. Research has suggested no consistent gender differences in causal attributions or locus of control (Miller & Kirsch, 1987). Researchers have found some gender differences in that females are more self-consoling and self-critical than males (Carver & Ganellen, 1983; Parker & Brown, 1979).

There is some evidence that men may use more problem-focused coping behaviors, while women may use more emotion-focused coping behaviors, but the results of studies are ambiguous (Billings & Moos, 1981; Folkman & Lazarus, 1980; Stone & Neale, 1984). Problem-focused coping behaviors seem to be more adaptive in controllable situations, and emotion-focused coping may be more adaptive in uncontrollable situations (Miller & Kirsch 1987). In studies of the appraisal of a stressful situation, men tended to cope with stress

by trying to alter the environment, while women coped with stress by modifying their emotional response (Miller & Kirsch 1987). In some ways these gender differences are analogous to the difference in Selye's nonspecific response to stress and Lazarus' response mediated by cognitive appraisal.

Nurses and Workplace Stress

Workplace stress can be studied from the perspective of the stress stimulus or stressor or it can be studied from the perspective of the stress response or coping activities of the individual. These two different perspectives of study can lead to different results and conclusions.

Job characteristics of various occupations or properties of the work environment considered to be stressors have been studied at some length. In a study conducted by the National Institute for Occupational Safety and Health (NIOSH), over 22,000 health records of workers in 130 occupations were evaluated (cited in Smith, Colligan, & Hurrell, 1978; Stringer, 1990). Health records were taken from death certificates, and from hospital and mental health center admissions. Each of these three sources was analyzed to determine the number of cases found in these records per occupation per data source, and compared to the population for each occupation based on the 1970 census data for Tennessee. Forty occupations were found to have a higher than expected incidence of stress-related disorders, seven of which were in the health care field, including registered nurses, licensed practical nurses, nurse aides, clinical lab technicians, health technology technician, dental assistants, and health aides. These jobs were characterized as fast paced with little chance of relief, high demands, low control, and a low level of physical exertion (Smith, Colligan, & Hurrell, 1978; Stringer, 1990).

A number of environmental issues have been identified by nurses in hospitals that are correlated with stress in their work, including workload and poor staffing (Dewe, 1988), dealing with death and dying (Dewe, 1988; Hipwell, Tyler, & Wilson, 1989), conflict with doctors (Hipwell, Tyler, & Wilson, 1989), and the strain of shift work (Estryn-Behar,

Kaminski, Peigne, Bonnet, Vaichere, Gozlan, Azoulay & Giorgi, 1990; Ivancevich & Matteson, 1982; Lyons, Hammer, Johnson & Silberman, 1987; Norbeck, 1985). Nurses may deny their psychological stress and continue to work in stress environments at the risk of physiological consequences (Bailey, Steffen, & Grout, 1980; Grout, Steffen, & Bailey, 1981)

Coffey, Skipper, and Jung (1988) found that nurses who rotated shifts reported the most job-related stress followed by those on the afternoon shift, the day shift, and finally the night shift. A study of 12 hour shifts compared to 8 hour shifts in a surgical intensive care unit found that, although staff perception was positive overall for 12 hour shifts, there was an increase in reported fatigue and a statistically significant increase in errors as indicated by a paper and pencil test (Mills, Arnold, & Wood, 1983). McGrath, Reid, and Boore (1989) found that nurses in the United Kingdom reported that their work life was a source of substantially more stress then their personal life and that the highest stressors were the lack of adequate compensation, lack of autonomy, and too little time in which to do their work. This result seems to be in opposition to the findings of Barnett and Baruch, (1985) who reported that the role of mother and meeting the constant needs of the family were the greatest source of working women's stress. This may indicate that these nurses had a higher job stress level than other working women.

The question of whether one nursing unit has more stress than another was posed in a study by Dewe (1988) of 2500 New Zealand nurses. Results indicated that intensive care nurses experienced more difficulties involved in nursing the critically ill and dealing with difficult or helplessly ill patients, while nurses in the medical ward, orthopedic ward, and continuing care ward nurses experienced a greater variety of stressors more frequently. These different stressors included work overload, difficulties relating to other staff, and concerns over the treatment of patients.

A study by Lyons, Hammer, Johnson, and Siberman (1987) supported the notion that variation in occupational stress can be accounted for by the unit on which the individual

worked. Tyler, Carroll, and Cunningham (1991) found that both public and private sector nurses in England reported high levels of stress, primarily from high workloads and the experience of dealing with death and dying.

The Karasek job strain model has been used to describe numerous occupations in the United states and in other countries. There is an indication that those occupations that arouse stress hormones are those that have low decision-making latitude or control and have high psychologically demanding tasks, such as those with time pressure. These two factors interact to form what is called job strain and have been described by the Karasek job strain model (Karasek, Schwartz, Theorell, Pieper, Russel, & Michela, 1982; Karasek & Theorell, 1990). Although nurses have been studied using the Karasek job strain model (Karasek & Theorell, 1990), no studies have been done using this model to describe work of nurses in different work units.

The Karasek demand-control model of job strain suggests that psychological strain leading to physiological illness results from the interaction of two types of job characteristics, the demands of the work situation and the environmental moderators of stress, particularly the range of decision-making freedom or control available to the worker, rather than the additive effects of multiple stressors (Karasek, Baker, Marxer, Ahlbom, & Theorell, 1981). Job demands or stressors place the individual in a motivated state of stress. Karesek et al. (1981) said, "If no action can be taken, or if other desires of the individual must be foregone because of low decision latitude, the unreleased stress may have reverse psychological and physiological consequences" (p. 695).

This thinking seems to be similar to Lorentz's idea (1966) of emotional overload and that emotion must be "released" at intervals so that it does not "spill over". The Karasek model projects that, when demands are high and decision latitude is low, that there will be an increase in mental strain, such as depression, sleep problems, exhaustion, use of medication, and dissatisfaction, and certain illnesses, such as cardiovascular disease, high blood pressure, and elevated heart rates. Some of Karasek's work initially was done using

Swedish men as subjects (Karasek, 1979; Karasek, Baker, Marxer, Ahlbom, & Theorell, 1981), but the theory has been used by others to study women in different countries (Brandt & Nielsen, 1992; Homer, James, & Siegel, 1990; Vinet, Vezina, Brisson, & Bernard, 1989).

Staff Member Characteristics

Hostility and Anger

Various emotions and responses have been associated with stressful stimuli. Several of these responses, such as depression and anxiety, have been widely studied Less frequently considered, but just as important, are the emotions of anger and hostility.

Anger has been cited as one of the primary emotions of human beings and has been identified with recognizable facial expressions across cultures (Thomas, 1990). Seminal work on anger was described in work done in the 1890s by G. Stanley Hall (1898/1899). This work related to the controversial theory of emotions originally proposed by William James (1884) and Carl Lange (1922) which held that "the bodily changes follow directly the **perception** of the exciting fact, and that our feeling of the same changes as they occur **is** the emotion" and that "the mental perception of some fact excites the mental affection called the emotion and that this... [mental affection] gives rise to the bodily expression" (James, 1884, p. 189-190). Cannon (1927), on the other hand, argued that visceral patterns could not be the basis for emotional feeling. This dualism of emotions between the "mind" and the "body" continues today in the literature of psychobiology (Dewsbury, 1991; Ekman, 1992; Levenson, Ekman, & Friesen, 1990; McEnany, 1991; Schwartz, 1986).

Literature on anger, hostility, and aggression often has proposed ambiguous theoretical and operational definitions of these concepts (McDougall, Venables, & Roger, 1991; Rothenberg, 1971; Spielberger, Johnson, Russell, Crane, Jacobs, & Worden, 1985; Spielberger, Jacobs, Russell, & Crane, 1983). The terms frequently are used interchangeably, and many studies do not make a clear distinction among the concepts.

Anger has been studied most notably in relationship to its maladaptive effects, such as depression, schizophrenia, hypertension, and cardiovascular disease. Aggression and hostility also have been used as variables in studies seeking to discover their relationships with these diseases (Biaggio, Supplee, & Curtis, 1981). Spielberger et al. (1983) had made these distinctions:

> Anger is generally considered to be a simpler concept than hostility or aggression. The concept of anger usually refers to an emotional state that consists of feelings that vary in intensity, from mild irritation or annoyance to fury and rage. Although hostility usually involves angry feelings, this concept has the connotation of a complex set of attitudes that motivate aggressive behaviors directed toward destroying objects or injuring other people.
>
> While anger and hostility refer to feelings and attitudes, the concept of aggression generally implies destructive or punitive behavior directed towards other persons or objects. (p. 163)

The effects of anger-provoking situations on physiological measures and observations of behavior also have been studied. Anger and hostility have been linked to the Type A behavior pattern (TABP) in men, and as part of a pattern of time urgency, chronic activation, and competitive drive, all of which has been found to be related to coronary artery disease (Spielberger et al., 1985; Wright, 1988).

One common instrument used to measure hostility is the Cook and Medley (1954) Hostility (Ho) Scale. This scale was derived from the Minnesota Multiphasic Personality Inventory (MMPI) for the purpose of determining a person's ability to get along well with others. Further discussion of this instrument is found in Chapter 3.

An instrument used to measure anger is the Spielberger State-Trait Anger Inventory (STAI) (Spielberger et al., 1983) was developed using the Buss-Durkee Hostility Inventory (BDHI) (Buss & Durkee, 1957). The developers of the STAI were trying to identify an underlying anger factor in the BDHI, but factor analysis revealed no underlying

anger factor. Spielberger et al. (1983) conceptualized state anger as an "emotional state or condition that consists of subjective feelings of tension, annoyance, irritation, fury, and rage, with concomitant activation or arousal of the autonomic nervous system" (pp. 168-169). State anger is a transient emotional state and can vary in intensity and change over time. Trait anger was defined as "individual differences in the frequency that state anger was experienced over time" (Spielberger et al., 1983, p. 169). It was assumed that people with trait anger would perceive a wide range of situations as anger provoking. Spielberger et al. (1983) report that after the unsuccessful attempt to discover an underlying anger factor in the BDHI, the developers created items that were consistent with the working definitions of anger as both an emotional state and a personality trait.

Findings have indicated that the BDHI, the Cook and Medley Hostility (Ho) Scale, and the Trait Anger (T-Anger) Scale of the STAI measure hostility, which is a more stable personality trait (De Leon, 1992; Johnson, Spielberger, Worden, & Jacobs, 1987; Kopper & Epperson, 1991; McDougall, Venables, & Roger, 1991).

State anger, a more transient and situational emotion, has been measured by the State Anger (S-Anger) Scale of the STAI. A significant correlation, for both males and females, has been found between the State Anger (S-Anger) Scale of the STAI and the State Anxiety Subscale of the Spielberger State-Trait Personality Inventory (STPI) (De Leon, 1992; Johnson et al., 1987; Kopper & Epperson, 1991; McDougall, Venables, & Roger, 1991).

Hostility and Anger in Nurses

Hostility can be a powerful emotion and can influence both individuals who are hostile and those who must relate to them. Hostile individuals may influence the environment in which they work and the environment, in selected people, may influence individual hostility. Dealing constructively with hostile individuals can be a challenging and frustrating experience for a nurse manager. Several articles have suggested the presence of anger or hostility in nurses, but there are few empirical studies that link anger or hostility

and nurses. Although there is little literature to support the presence of anger or hostility in nurses, nurses have reason to feel angry because of their work environment.

A number of writers have presented evidence of nurses as an oppressed group (Chinn & Wheeler, 1985; Reverby, 1987; Roberts, 1983). Nurses recognize undesirable traits about nursing, such as divisiveness and lack of effective leadership, but feel helpless to do anything about these issues. Often, nurses view nursing from the perspective of the dominant group, as they have been taught, and continue to devalue themselves and their work. This helplessness and frustration can be a source of anger toward other nurses and anger toward oneself for being in this group which has so little apparent worth in the eyes of society (Chinn & Wheeler, 1985). Another trait of an oppressed group is a lack of awareness, particularly of the group's own history and culture. The dominant group devalues this culture using hostile humor and refusing to recognize the contributions made by the oppressed group's heroes (Chinn & Wheeler, 1985; Roberts, 1983). "Blaming the victim" is a common strategy in maintaining the members of the oppressed group members in their place. Just as an abused woman in a violent relationship suffers the myth that she has no worth and no resources outside of her partner, nurses may believe that they are inherently inferior and see themselves as second class citizens (King & Ryan, 1989; Roberts, 1983). This may be seen in nurses who try to determine what they did wrong after being verbally abused by a physician or other powerful individual. They may make excuses for the abuser by arguing that the person was just tired or under a lot of pressure, and maintain that as long as the person is good at his job they can tolerate the behavior. Low self-esteem and a feeling of helplessness and hopelessness often are characteristic of nurses (King & Ryan, 1989; Roberts, 1983).

Ashley (1980) presented the argument that a patriarchal power structure serves to keep women in their role as glorified servants of men. The misogyny, or hatred and denigration of women, that exists is formally and informally taught to all people in the United States society, including women and nurses. Nurses work in a profession where 97% of nurses

are female and 83.6% of doctors are male and these two groups work closely together in hospitals (Pokalo, 1991). These hospitals have historically been patriarical and hierarchical environments and have been defined as the norm (Ashley, 1980; Reverby, 1987). Therefore, it seems possible that interactions between nurses and doctors are influenced by issues of gender and control.

Organizational Outcomes

Turnover, Absenteeism, and Other Outcomes

At a time of cost and quality consciousness in health care, organizational outcomes have taken on new importance. In the past, health care facilities tended to be evaluated on their system processes rather than overall outcomes. Outcomes now are increasingly being used to measure the care that is provided by any given facility. Such outcomes can be measured by many different factors, such as patient outcomes, employee outcomes, and organizational outcomes (Holzemer, 1992, 1994). Patient outcomes may include morbidity and mortality, length of stay, patient satisfaction, or those outcomes related to patient falls or nosocomial infections (Bame, 1993). Employee outcomes may include job satisfaction, morale, burnout, physical illness, or injuries (Jones, 1990a, 1990b; Landstrom, Biordi & Gillies, 1989; Taunton, Krampitz, & Woods, 1989a; Triolo, 1989a, 1989b; Williamson, Turner, Brown, Newman, Sirles, & Selleck, 1988). Organizational outcomes can include absenteeism, reduction in work, turnover, or work related physical or mental injuries (Wise, 1993).

The organizational behavior literature on occupational stress has tended to center on concerns related to how occupational factors affect the institution. Revicki and May (1989) found that organizational climate, supervisor behavior, and work group relations influenced role perception in hospital nurses and that role ambiguity and organizational environment influenced job stress. Several studies by Taunton, Krampitz, and Woods (1989a, 1989b, 1989c) indicated that middle manager motivation, power, influence, and leadership style have an impact on retention of professional staff. A study by Loveridge (1988)

demonstrated that retention of nurses could be linked to organizational designs, such as decentralization at the unit level, a more autonomous nursing staff, and less rigid personnel policies.

Negative organizational outcomes can increase costs to the organization and make it difficult for the organization to meet its objectives and goals. Turnover of nurses, absenteeism, and work related injury rates have been correlated with both job dissatisfaction and personal and occupational factors (Landstrom, Biordi, & Gillies, 1989). Excessive turnover can be seen as a negative outcome from an organization's point of view. Absenteeism is, in some ways, more disruptive than turnover. It is unexpected and unpredictable, and negatively impacts morale, costs, and quality of care (Taunton et al., 1989a). Work related injury is another negative organizational outcome and is costly to the organization because of potential time lost from work by the workers and replacement costs of those workers.

The nursing and occupational health literature discuss responses of nurses in hospitals to occupational stressors. Short -term behavioral responses may include quick temper, and loss of concern for people (Duldt, 1981; Lawrence & Lawrence, 1987/1988; Tan, 1991; Triolo, 1989a, 1989b; Velianoff, 1991; Williamson et al., 1988; Zoloth & Stellman, 1987), yelling, crying, leaving the unit, leaving the hospital, or physically remaining but being emotionally distanced from patients, families, colleagues, friends, and coworkers (Cronin-Stubbs & Rooks, 1985; Gentry & Parkes, 1982; Lewis & Robinson, 1986, 1992). Other responses may include anxiety (Lawrence & Lawrence, 1987/1988), anger (Duldt, 1981), irritability, musculoskeletal injuries (Triolo, 1989a, 1989b), and infectious illness due to exposure to disease at work (Tan, 1991; Velianoff, 1991; Williamson et al., 1988; Zoloth & Stellman, 1987). Revicki and May (1989) found that occupational stress influenced depressive symptoms in nurses.

Long-term coping activities include smoking, leaving the job, leaving nursing, having increased absenteeism, and work-related injuries or disabilities (Norbeck, 1985; Spoth &

Konewko, 1987). The Lewis and Robinson (1992) study is significant because it demonstrates that the work of registered nurses in hospital intensive care units continues to be stressful and that strategies to manage the stress have been only partially successful

The nursing administration literature discusses the cost of staff nurse turnover and the factors that lead to turnover (Curry, Wakefield, Price, Mueller, & McCloskey, 1985; Hinshaw & Atwood, 1984), as well as ways to reduce turnover (Prescott, 1986). There also are studies on burnout, errors, absenteeism, expressions of negativism, or subversive activities, and increased physical illness (Dailey, 1990; Jones, 1990a, 1990b; Landstrom et al., 1989; Taunton et al., 1989a; Triolo, 1989a, 1989b; Williamson, et al., 1988).

Factors associated with nurse turnover included role ambiguity and conflict, job stress, workload, job satisfaction, and intent to leave (Curry et al., 1985; Dailey, 1990; Hinshaw & Atwood, 1984; Prescott, 1986). In a study by Hinshaw, Smeltzer, and Atwood (1987) job stress was found to be buffered by job satisfaction, which led to less turnover. Lyons et al. (1987) supported the notion that variation in occupational stress was accounted for by the unit on which the individual worked. Another study in England found nurses in a National Health Service hospital ICU to be highly stressed and that the unit experienced a turnover rate of over 80% (Watkinson, 1991).

Generally, strategies for managing nursing units have focused on changing the individual nurse. In studies of ICU nurse coping measures, investigators found that the nurses used strategies such as meditation, self-hypnosis, exercise, hobbies, the discussion of problems with coworkers, overeating, the consideration of job change, caffeine, and problem solving (Lewis & Robinson, 1986, 1992). Strategies suggested for managers included enhancing communication, trying to resolve conflicts, improving communication flow, using agency communication channels, providing assertiveness programs, provide performance feedback, stress management training programs, and recognizing achievements (Lewis & Robinson, 1986, 1992; Murphy, 1984; Sauter, Murphy, & Hurrell, 1990). One recommended strategy for venting internalized emotions is called

critical incident stress debriefing (Jimmerson, 1988). This process allows staff members to discuss emotions in a safe and healthy environment in order to diffuse some of the stress associated with the critical incident. The debriefing sessions may include all members of the team involved in the incident and is ideally held within 24 to 72 hours of the incident.

Changing the individual may be based on Lazarus and Folkman's model that the stress event can be mediated in the individual by cognitive appraisal. Administrators and managers may be overwhelmed by the thought of changing the organization and focus their efforts on changing the individual. Strategies to change the individual certainly are necessary and helpful but there seems to be little written that encourages changing the work environment. This imbalance in the literature reflects a gap in knowledge of coping strategies for stress by nurses working in hospitals. This gap relates to how the environment can be changed to reduce the risks associated with occupational stress.

Summary

Organizational culture in business and industry has been studied extensively in the last decade. There has been less research in the hospital setting and even less on the cultures of hospital nursing units. Yet, workplace stress has a relationship to work group culture (Conway & Carmona, 1989; Posner, Kouzes, & Schmidt, 1985) and the hostility and anger of nursing staff may be related to work group culture and workplace stress. It is possible that absenteeism and turnover also can be related to work group culture, nurse staff hostility and workplace stress, but none of these relationships have been investigated.

Assumptions

The following assumptions underlie this study.

1. All nursing units have work group cultures.
2. Nursing units in the same hospital may have cultures that differ from each other.
3. Work group cultures can be assessed, evaluated, and changed.
4. Most nurses are unaware of their own work group culture.
5. Hospital nursing is stressful.
6. Nurses have some degree of hostility.

Conceptual Framework

Organizational culture theory is used as the framework for this study, since culture is the glue that holds an organization or workplace together. Culture is the set of assumptions and shared philosophies to which seasoned employees adhere and to which new employees adapt. Work group culture can influence and be influenced by individuals and groups of individuals. Workplace stress can influence and be influenced by work group culture. Emotions, such as depression, anxiety, and hostility, also can influence and be influenced by individuals. Work group culture has been linked, in some studies, with the amount of absenteeism and turnover in the organization. Workplace stress can influence and be influenced by absenteeism and turnover, and hostility of individuals can influence and be influenced by absenteeism and turnover.

The circular and reciprocal nature of the dependent and independent variables of this study make it difficult to clearly predict directional relationships. However, predominant effects are likely to be as follows:

1. Work group culture may positively or negatively influence absenteeism and turnover.
2. The job characteristic of workplace stress may increase absenteeism and turnover.
3. The member characteristic of hostility may increase absenteeism and may increase or decrease turnover.
4. Work group culture may increase or decrease hostility and workplace stress.
5. Workplace stress may negatively influence hostility and work group culture.
6. Hostility may negatively influence workplace stress and work group culture.

The process of substruction is used to clarify the conceptual framework of the study. Substruction is a process whereby the major variables of a study and the propositions or relationships among these variables are identified and these relationships presented in a pictorial form (Dulock & Holzemer, 1991; Hinshaw, 1979). Figure 1 illustrates the study domains, the constructs of the study, the concepts and subconcepts of the study, and its empirical indicators. The term construct is defined as "a highly abstract notion that can partially be defined" (Dulock & Holzemer, 1991, p. 84). Concepts are defined as "a word[s] which expresses a mental image of some phenomenon". Sub concepts further define and express the mental image of the phenomenon (Dulock & Holzemer, 1991, p. 84). Empirical indicators are defined as "actual instruments or experimental conditions" (Dulock & Holzemer, 1991, p. 84). The substruction is designed to progress from most abstract at the top of the page to least abstract at the bottom of the page. The variables on the far right are the dependent variables.

For the purposes of this study, work group culture will be defined as a pattern of shared values and assumptions that are demonstrated by the behaviors of a group developed over time as a way to solve problems in order that the group may survive.

Operationally, work group culture will be measured by the Organizational Culture Inventory (Cooke & Lafferty, 1987).

Workplace stress is defined as job strain resulting from the interaction of two types of job characteristics, the demands of the work situation and the environmental moderators of stress, particularly the range of decision-making freedom or control available to the worker. Operationally, workplace stress will be measured by the Job Content Questionnaire (Karasek et al., 1981).

Hostility is defined as a stable individual personality characteristic that is highly correlated with trait anger. Hostile personalities tend to experience chronic hate and anger and tend to view the world with suspicion. Operationally, hostility will be measured by the Cook Medley Hostility Scale (Cook & Medley, 1954).

Operationally, for this study, annual turnover has been measured and calculated using the formula:

$$\text{Turnover rate} = \frac{\text{Number of Staff terminations/ year}}{\text{Average Staff workforce/ year}} \times 100$$

(Jones, 1990b).

Operationally, absenteeism has been measured and calculated by the following formula:

$$\text{Absenteeism rate} = \frac{\text{Sum of the total number of shifts lost for a 3 month period}}{\text{Total number of possible shifts for that 3 month period.}}$$

Number and type of work related injuries have been collected.

Work related injuries are defined in this study as any work related event requiring medical intervention or assessment other than first aid.

Figure 1: Substruction

	DOMAIN	ENVIRONMENT		PERSON	
THEORETICAL SYSTEMS	CONSTRUCTS:	ORG. CULTURE	STRESSORS	STRESS RESPONSE/ EMOTION	
	CONCEPTS:	MILIEU CHARACTER.	JOB CHARACTER.	MEMBER CHARACTER.	ORG. OUTCOMES
	SUB CONCEPTS:	WORK GROUP CULTURE	WORKPLACE STRESS	HOSTILITY	ABSENTEEISM/ TURNOVER
OPERATIONAL SYSTEMS	EMPIRICAL INDICATORS:	OCI	JOB CONTENT QUESTION.	COOK MEDLEY HOSTILITY SCALE	PERCENTAGES
	TOTAL SCORE	INTERVAL	INTERVAL	INTERVAL	INTERVAL

Research Questions and Hypotheses

I. Is there a relationship between nursing unit culture and the percentage of annual turnover for a nursing unit, and the number of absent shifts in a 3 month period?

There will be a significantly higher amount of annual turnover, and absent shifts in nursing units with security needs cultures versus nursing units with satisfaction needs cultures as measured by the OCI.

II. Is there a relationship between workplace stress and the percentage of annual turnover for a nursing unit, and the number of absent shifts in a 3 month period?

There will be a significantly higher amount of annual turnover, and absent shifts in nursing units with higher workplace stress than in units with lower workplace stress.

III. Is there a relationship between staff hostility and the percentage of annual turnover for a nursing unit, and the number of absent shifts in a 3 month period?

There will be a significantly higher amount of annual turnover, and absent shifts in nursing units with higher staff hostility than in units with lower staff hostility.

CHAPTER III

METHODOLOGY

Research Design

The purpose of a research design is to guide the investigation, indicate what activities the investigator and participants should perform, and the order of that performance (Woods & Catanzaro, 1988). Based on the present knowledge related to work group culture in nursing units, the workplace stress of nurses, individual staff characteristics, and organizational outcomes, a descriptive correlational design was selected for this study. This study should be considered a preliminary step in building a model encompassing these variables. There are too few data in previous studies to predict which, if any, of the independent variables will have the greatest effect on the dependent variables.

Research Setting

This study was conducted at five large tertiary care university medical center hospitals on the West coast. All five hospitals offer full service medical and nursing care, and all provide teaching capabilities for medical students, nursing students, and numerous ancillary program students. All the adult medical-surgical and specialty nursing units in each hospital were recruited for this study. Every effort was made to recruit participants into the study from each category of nursing staff (registered nurse, licensed vocational nurse, nurse assistant, technician) who worked a minimum of 20 hours per week on each nursing unit.

There were 112 units that were eligible to be admitted to the study, 22 from the first hospital, 30 from the second hospital, 16 from the third hospital, 27 from the fourth hospital, and 17 from the fifth hospital. Of these 112 potential units, 20 were intensive care units, 29 were medical-surgical units, 8 were medical units, 17 were surgical units, 5 were operating rooms, 5 were post anesthesia care units, 5 were emergency departments, 4 were labor and delivery units, 5 were post partum units (one of which was a combined

labor and delivery/post partum unit), 4 were step down or intermediate care units, 4 were burn units, and 6 were other types of units (2 life flight or critical care transportation units, a rehabilitation, 2 dialysis, and a IV therapy). Of these 112 units, 67 units were ultimately admitted to the study.

Sample

Human Subjects Assurance

The research study received approval from the University of California, San Francisco, Committee on Human Research (H2483-09784-01) on November 23, 1993. One modification that added an additional site was approved on June 8, 1994. The study was subsequently approved by the Human Subjects Committees of all five participating institutions.

Criteria for Sample Selection

Individual participants were recruited for the study if they worked in an adult nursing unit at least 20 hours per week. Individuals who typically worked in multiple units or those who worked less than 20 hours per week were excluded. Additionally, all staff from nursing units that primarily cared for children and all work units in the hospital that did not primarily deliver nursing care were excluded. Nursing units, such as ambulatory surgery units, that delivered ambulatory care were included if they were located in the hospital and delivered nursing care that was more comprehensive than a clinic visit.

Because work group culture has been defined as a pattern of shared beliefs and assumptions of a group that are demonstrated by the behaviors of that group developed over time, the number or percentage of staff members who completed an instrument was important. Although there were no specific guidelines in the literature to determine the number or percentage of staff members necessary per unit to accurately determine work group culture, every effort was made to recruit as many of the staff members as possible. In one study using the Organizational Culture Inventory (OCI) to measure hospital nursing culture, 56 of 225 (24.8%) nurses completed the inventory (Thomas et al., 1990). For this

study, a minimum of 25% of the staff assigned to the nursing unit who worked 20 or more hours per week was considered necessary to include the unit in the study. All nursing staff shifts were involved in data collection.

Nature and Size of Sample

A purposive volunteer sample of staff members working at least 20 hours per week assigned to adult nursing units at the five sites was recruited. A total of 909 staff members from a potential group of 4,206 staff members, were entered in the study These 909 participants were from 108 of the potential units eligible to be in the study. Four of the 112 units had staff members who did not complete any of the study instruments. Of the 909 staff members who did complete the study instruments, 80.9% were registered nurses (RN), and the remaining 19.1% were licensed vocational nurses (LVN), nursing assistants and orderlies (NA), clerks, and technicians assigned to the nursing units. Of the 112 potential units, 67 met the admission criteria for the study for a total of 622 individual participants.

Data Collection Methods

Environmental Milieu Characteristics

Nurse Manager Demographic Profile

Description. The Demographic Profile--Nurse Manager (see Appendix A) was used to collect data from the nurse manager that, based on current literature, might reasonably be related to the environment of the work unit. These data included basic nursing education, highest degree held, years as manager of the unit, years in management in the hospital, overall years in management, number of units managed, and preferred management styles. Age, gender, and ethnicity were collected to describe the managers as part of the work environment and to provide comparisons with national norms of nurse managers. The demographic profile took approximately five minutes to complete.

Reliability and validity. The instrument was reviewed for face validity by a panel of three researchers. No reliability assessments were done due to the nature of the data.

Work Group Culture

Description. The Organizational Culture Inventory (OCI) developed by Cooke and Lafferty (1987) is a 120-item instrument designed to measure "a specific aspect of organizational culture--the shared norms and expectations that guide the thinking and behavior of the group members" (Cook & Rousseau, 1988, p. 246). Respondents are asked to answer each item on a scale from 1 to 5 as to how the behavior helps people "fit in" and "meet expectations" in their group. The OCI is designed to be used for both intra-organizational and inter-organizational comparisons. The instrument can be used to assess the dominant organizational culture, as well as subcultures that exist within the organization.

The OCI measures 12 distinct but interrelated thinking styles of individuals in a group: humanistic-helpful, affiliative, approval, conventional, dependent, avoidance, oppositional, power, competitive, competence/perfectionistic, achievement, and self-actualization. These 12 thinking styles have been shown to relate to such outcomes as managerial effectiveness, quality of interpersonal relations, and individual well-being (Cooke & Rousseau, 1983). Based on these styles, the inventory assesses the ways in which organizational members are expected to think and behave in relation to both their tasks and to other people. Studies using the OCI and other measures suggest that "certain thinking styles may prevail in particular organizations, represent the interpersonal relationships with the system, and result from organizational norms and expectations that are perceived in consistent ways by members" (Cooke & Rousseau, 1988, p. 254). The OCI helps describe thinking styles and behaviors that are encouraged or tolerated in the organization. It requires 15-25 minutes to complete.

Reliability and validity. The OCI has been used to assess over 20,000 people in more than a hundred organizations. Cooke and Lafferty (1987) reported reliability and validity data in one study. The instrument was administered to 526 members of 18 organizations and 135 participants in an executive development program. The Cronbach alpha reliability

coefficient for the twelve scales ranged from .75 to .92. A principal components factor analysis indicated three empirical factors underlying the 12 scales. The approval, conventional, dependent, and avoidance scales were grouped together and called the passive-defensive factor. The humanistic-helpful, affiliative, achievement, and self-actualization scales were grouped together and called the constructive factor. The oppositional, power, competitive, and competence/perfectionistic scales were grouped together and called the aggressive-defensive factor. The constructive factor also was described as satisfaction-oriented, the aggressive-defensive factor was described as task-security-oriented and the passive-defensive factor was described as people-security oriented (Cooke & Lafferty, 1987; Cooke & Rousseau, 1988).

In order to provide evidence to support the construct validity of the OCI, specifically testing predictions based on known group differences, Cooke and Rousseau (1988) studied two different organizations. One of the organizations was judged to be "excellent" by Peters and Waterman (1982). Excellent companies were characterized by having a bias for action, being close to the customer, autonomy and entrepreneurship, productivity through people, hands-on, being value driven, paying close attention to the business at hand, having a simple form, lean staff, and simultaneous loose-tight properties (Peters & Waterman, 1982). Cooke and Rousseau (1988) found that the profile of the members of this organization indicated very high scores on the thinking scales that loaded on the factor of the satisfaction-orientation (constructive) culture. The members scored low on the thinking styles that loaded on both the task-security and the people-security factors (Cooke & Rousseau, 1988). In contrast, the second organization had experienced several recent reorganizations, substantial turnover, and low job satisfaction. They found the members of the second organization scored high on thinking styles that loaded on the security oriented norms, specifically the power and dependence styles. (Cooke & Rousseau, 1988).

Cooke and Rousseau (1988) go on to predict that security oriented profiles characterized organizations that emphasized reliability, that is, they rewarded employees for

avoiding mistakes, having stability, and behaving in a way that was consistent with past practices. These organizations characteristically did not reward for innovation and the risk-taking needed to maintain effectiveness.

The OCI has been used in studies of several healthcare organizations, including a metropolitan community hospital with a total of approximately 225 nursing personnel and a voluntary sample of 56 nurses (Thomas et al., 1990), and a study evaluating organizational culture in seven acute care hospitals in Pennsylvania with a random sample of 250 nurses from the seven hospitals (McDaniel & Stumpf, 1993). Reports from the latter study indicated a Cronbach alpha of .90 and acceptable construct and content validity. Validity and reliability are not reported in the former study.

Based on the reliability and validity evidence provided, the OCI is a good choice for this study. It is particularly appealing because of the variety and number of organizations, including healthcare organizations, in which it has been used. It also is appropriate because of the instrument's projected ability to distinguish dominant cultures as well as subcultures.

Job Characteristics

Nursing Unit Demographic Profile

Description. The Demographic Profile--Nursing Unit (see Appendix B) was used to collect data to describe the sample nursing units and the characteristics of the jobs in those units. Demographics of the nursing units that were used to describe job characteristics, included average daily census and hours per patient day (HPPD). Number of grievances, number of incidents, number of patient falls, and number and type of employee injuries were used to describe the sample in relationship to the independent variables of workplace stress and hostility. The number of nurse managers the unit had in the last 5 years was used as a descriptor in relationship to the independent variable of work group culture. Information related to full time equivalents (FTE), number of staff, and average daily census was obtained from management information systems or nursing administration staff.

Reliability and validity. The instrument was reviewed for face validity by a panel of three researchers. No reliability assessments were done due to the nature of the data.

Workplace Stress

Description. The Job Characteristics Scale is an instrument that has been used in numerous occupational health studies to measure workplace stress (Karasek, 1979). It is based on the Karasek job strain model. Karasek (1979) has defined workload or job demands as stress sources or stressors. Decision latitude in a job was defined as job control or discretion. Job strain was defined as a composite of job demands and decision latitude. Job strain is said to occur when job demands are high and job decision latitude is low.

The various titles of this instrument can be confusing. The Job Characteristics Scale is comprised of a number of subscales which have evolved and been extended over the life of the Scale. One subscale measures decision latitude, the score of which is measured by adding six questions measuring skill discretion and four questions on decision authority. The job demands or psychological demands subscale is measured by five questions and is designed to measure psychological not physical job demands job demands. Other subscales of the Job Characteristics Scale include job insecurity, physical exertion, hazardous exposure, and social support (Karasek & Theorell, 1990).

What is known as the "Framingham version of the Job Characteristics Scale" is composed of a nine question subscale on decision latitude, nine questions on psychological workload, five questions on physical work load, and four questions on job insecurity.

A standard 49 item scale called the "Framingham version of the Job Content Questionnaire" is composed of a nine question subscale on decision latitude, nine questions on psychological workload, five questions on physical work load, and four questions on job insecurity, plus an eleven item subscale on social support, eight additional questions on decision latitude/organizational level, two additional questions on job insecurity and one

question on skill level required (Karasek, Pieper, Schwartz, Fry, & Schrier, 1985; Karasek & Theorell, 1990). The subscales can and have been used in various combinations.

A version of the instrument called the Job Content Questionnaire measures decision latitude using six questions for skill discretion and four questions for decision authority and measures job or psychological demands using five questions (Karasek & Theorell, 1990). All the individual items in the subscales are scored on a Likert scale of 1 to 4.

Several studies have looked for correlations between the Job Content Questionnaire and its various subscales and other variables of interest, such as blood pressure, cardiovascular disease, back and neck disease, and absenteeism from work (Karasek, Baker, Marxer, Ahlbom, & Theorell, 1981; Light, Turner, & Hinderliter, 1992; Schnall et al., 1990; Theorell, Harms-Ringdahl, Ahlberg-Hulten, & Westin, 1991).

The Job Characteristics Scale has been used to determine job control, job demands, and work-related physical exertion and has been applied to most U.S. Census Code Occupational/Industry codes. These subscales also have been used to classify jobs for both males and females according to the high demand/low control characteristics of the Karasek model (Homer, James, & Siegel, 1990).

A large study in Denmark used the Karasek model to study female clerical workers and pregnancy outcomes. The variable job strain was defined as high demand versus low control, and the investigators developed with Dr. Robert Karasek, a new 16-item questionnaire, which was piloted in 12 different companies and further modified.

The job strain model plots decision latitude and job demands on two dimensional X/Y axes. Based on Karasek's work (Karasek & Theorell, 1990), the occupation title "Nurse " is plotted moderately high on decision latitude (Y axis) and slightly to the right of center on psychological demands (X axis). The occupation title "Nurse's Aid" is plotted below the X axis and to the right of the Y axis. This indicates that Nurse's Aid has job strain and that Nurse does not. The plot did not make any distinction among the various types of nurses or nursing units, however.

The measurement instrument used in this study is called the Job Content Questionnaire and consists of fifteen items. This included ten items measuring decision latitude (six skill discretion items and four decision authority items) and five psychological demand items. One of the decision authority items (in the decision latitude subscale) was included in the data collection but excluded in the data analysis because of the Karasek scoring instructions. The instrument takes approximately five minutes to complete.

Reliability and validity. Test-retest reliability for all the subscales of the Job Characteristics Scale using occupation as the unit of analysis, shows a correlation of approximately .90. Internal consistency reliability, as assessed by the Cronbach's alpha coefficient on the decision latitude subscale for men, is .80 and .77 for women. Internal consistency reliability for the psychological job demand subscale is .61 for men and .70 for women. (Karasek & Theorell, 1990).

Content validation of the decision latitude scale is derived from worker trait data in the Dictionary of Occupational Titles (DOT) (Spenner, 1980). Correlations ranged from .79 to .65 for various items. Convergent validity was demonstrated by high correlations between objective and self-report measures. These correlations ranged from .69 to .87 (Karasek & Theorell, 1990). The psychological demand scores for occupations have been found to be highly reproducible across occupations. Self-reports of psychological job demands have corresponded well with expert assessments in several studies using this subscale. Additionally, this subscale has identified occupations that are plausibly high or low in psychological workload (Karasek & Theorell, 1990).

Member Characteristics

Staff Member Demographic Profile

Description. The Demographic Profile--Staff Member (see Appendix C) was used to collect data to describe the sample nursing staff. Demographics of staff members included age, gender, ethnic background, level of basic nursing education, and highest degree held. Shift, hours, years in nursing, years in the hospital, years in the unit, and years of

experience in the specialty were used to describe the sample in relationship to the independent variable of work group culture. The Demographic Profile takes approximately 5 minutes to complete.

Reliability and validity. The instrument was reviewed for face validity by a panel of three researchers. No reliability assessments were done due to the nature of the data.

Hostility/Trait Anger

Description. The Cook and Medley (1954) Hostility (Ho) Scale is a widely used instrument employed to measure hostility. The scale is a series of 50 items presented in a true-false format; the 50 responses are then summed. This instrument was empirically derived from the Minnesota Multiphasic Personality Inventory (MMPI). The Minnesota Teacher Attitude Inventory (MTAI) is an instrument that is reported to predict teacher-pupil rapport with a degree of validity indicated by correlations with independent criteria of from .50 to .63 (Cook & Medley, 1954). The MTAI was standardized for a large sample of teachers and it was used to identify two groups of teachers with sharply differing abilities to get along with pupils. The MMPI then was administered to the two groups of teachers. Based on the scores of the two groups, a selection of items on the MMPI that obviously reflected hostility were chosen for the Ho scale. Although the MMPI was normed on psychiatric patients, the items included in the Ho scale were those that discriminated teachers with good versus poor rapport with students (Cook & Medley, 1954; Houston, & Vavak, 1991). High Ho scores have been associated with coronary atherosclerosis and coronary heart disease in men and women (Durel et al., 1989). A significant strength of the Cook and Medley Hostility (Ho) Scale is its widespread use to measure hostility. It is recognized by investigators in many areas of research, particularly in behavioral medicine and psychology.

Reliability and validity. A study by Smith and Frohm (1985) found the Cook and Medley Hostility (Ho) Scale correlated significantly higher with self-reported anger than with self-reported anxiety or depression and that it significantly correlated with reported

assaultiveness and verbal hostility (Pope, Smith, & Rhodewalt, 1990; Smith & Frohm, 1985; Smith, Saunders, & Alexander, 1990). Few studies have examined the behavioral correlates of the Ho scale, although Hardy and Smith (1988) did find that high Ho undergraduate males behaved in a more hostile manner during role play interactions (Hardy & Smith, 1988; Smith et al., 1990). In exploring the construct validity of the scale, Smith and Frohm (1985) described hostility as a mostly stable personality attribute of chronic hate and anger with a tendency to experience anger readily and view the world with suspicion. People who scored high on the Ho scale are dysphoric, mistrusting, suspicious, resentful, readily angered, and dissatisfied with their social support and relations with others (Houston & Vavak, 1991).

In a study using female subjects, one investigator noted that the Ho scale had been demonstrated to have strong positive relationships with trait anger, "anger-in," that is suppressing anger, or holding it in, when one is feeling angry, and "anger-out," that is, engaging in aggressive behavior when angry,` whether verbal or physical. The Ho scale also has demonstrated an inverse relationship with hardiness (Johnson-Saylor, 1991) and has correlated significantly with the Trait-Anger subscale of the Spielberger State-Trait Anger Scale for Black (r =.60) and White (r =.56) women (Durel et al., 1989). A study of men by Smith and Houston (1987) found a negative correlation between the Cook Medley Ho Scale and the Framingham anger-out subscale, but no correlation between the Ho Scale and the Framingham anger-in or anger-discuss subscales. A study by Jamner, Shapiro, Goldstein, and Hug (1991) reported that the Cook Medley Ho Scale described a trait attribute and has been shown to demonstrate one and four year test-retest correlations of r =.85 and r =.84, respectively.

The Cook and Medley Hostility Scale has been widely used to measure hostility for many years. In the last two decades, it has been increasingly used to measure hostility in women, and there is substantial evidence to indicate that the test measures a personality characteristic similar to trait anger. In addition to the measures of reliability and validity,

the instrument is relatively easy to administer and can be completed in a short time. For these reasons, the Cook and Medley Ho Scale is appropriate for this study.

Organizational Outcomes

Absenteeism and Turnover

Description. Turnover data were collected for the year 1993. The investigator calculated turnover rate by using the following formula: number of worker terminations divided by the number of workers at the beginning of the year minus the number of workers at the end of the year divided by two (the average number of workers in the year) multiplied by 100 (to get the percentage) (see formula on page 35).

Absenteeism data were collected for October, November, and December of 1993. The investigator calculated the percentage of absenteeism by computing the total number of shifts lost divided by the total number of possible shifts for each unit during the last three months of 1993. This gave the percent absenteeism (see formula on page 35). Data related to absenteeism and turnover were collected by gathering raw data from the nursing office or from management information services.

Data related to worker injury, grievances, patient falls, and incidence reports were collected for October, November, and December 1993. Information related to grievances was obtained from labor relations or from the bargaining unit. Information related to incident reports, patient falls, and staff injuries was obtained from risk managers, employee health staff, or human resources personnel, depending on the study site.

Reliability and validity. The instrument containing the formulae was reviewed for face validity by a panel of three researchers.

Procedure

Data collection for this study took place from December 1993 to June 1994. Initial permission for the study was obtained from the chief nursing officer or designee at each hospital. Presentations describing the study were done by the investigator to various groups at each study site, including nurse researchers and nursing research committees,

nurse administrators, nurse managers, nurse educators, nurse clinicians, and staff nurses. Prior to the beginning of data collection, information letters (see Appendix D) describing the study were sent to all nurse managers and administrators, as well as any other nurses who were accessible by hospital mail. Bargaining unit leaders were contacted by telephone or in person so that they also would have information about the study. Staff members were recruited with fliers (see Appendix E) describing the study and by talking to individuals on each shift of each unit.

Boxes of blank study questionnaires were left on each unit in an area frequented by staff members. They were asked to complete the questionnaires on their break or to take them home. Staff members were not compensated for the time to complete the questionnaires but were encouraged to complete them by being entered in a lottery at each site, with a $250 prize awarded in a drawing.

Participant confidentiality in the lottery was maintained in the following way: on a cover sheet for the questionnaire, there was a ticket with the same number on two separate sections (see Appendix F). When the participant turned in the questionnaire, one section was retained. The second section with the identical number was left attached to the questionnaire and was removed by the investigator when the questionnaire was retrieved. When all the data had been collected, one number was drawn which was posted on a bulletin board in each nursing unit The participant with the winning number presented the ticket section with the winning number to the investigator to claim the $250 prize. After the investigator removed the second section, the participant number could not be connected with the questionnaire information, and no names were used in the drawing or claiming the prize.

Staff members were asked to either leave the completed questionnaires in a box in the unit, send it to the investigator through the hospital mail at a mailbox temporarily established at each facility, or to mail it to the investigator's home.

All units and shifts were visited and all available staff members were contacted to ask for their participation. Since most staff members worked every other weekend, the investigator visited the units on all shifts for two successive weekends and several days during the week.

The project was discussed as a potential way to improve work life for nurses. An attempt was made to solicit participation when the units were not overwhelmed with work.

Numerous attempts to recruit staff at each site were made. Fliers were posted informing the staff of the number of days left to return the questionnaires (see Appendix G). When the final questionnaires were collected, a flier was left giving information about the drawing for the $250 and telling staff that late questionnaires could be mailed to the investigator until a final cutoff date (see Appendix H). Thank you letters were given to each nurse manager, along with extra questionnaires and stamped addressed envelopes (see Appendix I) . Extra questionnaires also were left in the nursing offices. During the time the questionnaires were on the units, data also were collected on absenteeism, turnover, work injuries, grievances, incident reports, patient falls, staff totals, and FTEs.

Data Analysis

Data were analyzed using the Crunch 4 statistical analysis software program. Individual scores were aggregated to form nursing unit mean scores for all variables and descriptive statistics were performed. The unit, rather than individual, means were used in all data analyses. A correlation matrix was created to seek significant correlations among variables and multiple regression analyses were performed. The regressions were done by entering all the independent variables simultaneously at step 1 and then regressing all the independent variables on each dependent variable, absenteeism and turnover. This method of analysis was chosen because little information existed about relationships among the independent variables and the dependent variables. At this stage of model development there was insufficient evidence to predict a hierarchical regression.

CHAPTER IV

RESULTS

Introduction

The first section of this chapter is the preliminary analysis and describes the control of Type I error, the power analysis, the pilots that were carried out, and the instrument reliability and validity. The second section is the analysis and includes the descriptive information of the study sample, correlations of the study variables, the regression analysis results of the study hypotheses, and the post hoc analyses.

Preliminary Analysis

Type I Error

Because this study is for the purpose of building theory and there is little information in the literature concerning the relationships of the variables, an overall alpha of .10 was divided by two (dependent variables) so that each variable was held to an alpha of .05.

Power Analysis/Type II Error

Frequently, the goal of power analysis is to determine the appropriate sample size in a study, given an acceptable level of power at a given alpha. For many psychological or behavioral science studies, an effect size can be estimated as small, medium, or large (Cohen & Cohen, 1983). The unit of analysis for this study was the nursing unit. Assuming a medium effect size of .25, an alpha of .05, an R^2 of .225, and a desired power of .80, a sample size (n) of 57 units was needed (Borenstein & Cohen, 1988).

Pilot One

Before beginning data collection, 10 colleagues were asked to complete a packet of study instruments under consideration for use in the study. They were asked to evaluate the instruments in relationship to the time necessary to answer the questions, the clarity of the instruments, confusing or difficult items on the instruments, and any other comments they wished. Six people completed the questionnaires and provided feedback.

Demographics of the six people who completed the questionnaires were a mean age of 44 years, 100% were female and 83.3% were White/Caucasian. Eighty-three percent worked full time, with an average of 16 years in nursing, an average of 9.1 years in the hospital, an average of 7.7 years in the unit, and an average of 11.7 years in their specialty. The most common basic nursing preparation was the diploma and 33.3% had their BS as the highest degree. Eighty-three point three percent were RNs; the same percentage worked the day shift. Questions also were asked related to salary, dependents, and marital status.

The packet included a cover sheet with 6 questions about the instruments, a 16-item demographic questionnaire, the 120-item Organizational Culture Inventory (OCI) (Cooke & Lafferty, 1987), the 50-item Cook and Medley Hostility Scale (Cook, & Medley, 1954), the 73-item Nurse Stress Checklist (Benoliel, McCorkle, Georgiadou, Denton, & Spitzer, 1990), the 50-item Nursing Unit Cultural Assessment Tool (NUCAT-2) (Coeling, & Simms, 1993) and the 176-item Work Characteristics/Excitement instrument (Savage, Simms, Williams, & Erbin-Roesemann, 1993).

Collegial feedback included the following: it took too long to answer the questions, from 35 minutes to 95 minutes; the Nurse Stress Checklist was confusing; the NUCAT-2 was awkward; and that the Work Excitement instrument was confusing and difficult. Respondents were not able to complete the instruments on breaks because of the length of time needed and indicated that it would have been easier if they had been able to work on the packet overnight.

After consideration of the collegial feedback, further evaluation, and lengthy discussion with three other researchers, it was decided to eliminate the Nurse Stress Checklist and the NUCAT-2. The Work Excitement instrument also was eliminated because it was designed to be used with the NUCAT-2. The Karasek Job Content Questionnaire (Karasek et al., 1985) was added to measure job strain as a job characteristic rather than using an instrument that measured perceived stress as a staff member

characteristic. The demographic questionnaire was modified to delete questions about salary, dependents, and marital status because asking these questions could not be supported by theory. The final packet included a 14-item demographic profile, the 120-item OCI, the 50-item Hostility scale, and the 15-item Job Content Questionnaire.

Pilot Two

In December 1993, after Human Subjects Committee and other approvals were obtained, a pilot nursing unit was selected, the purpose of which was to get further feedback on the use of the study instruments, determine the length of time needed to complete them, determine the most effective way to administer them, and to determine, if possible, the differences between staff members who completed the instruments and those who did not.

The unit selected for the pilot study was small (13 total staff members), and the nurse manager was interested in research. The nurse manager placed the instruments in the staff mail boxes, and the staff return the completed instruments to her. No contact was made with the staff except through the written directions on the instrument packet. The return rate of the instruments was 53.8% (7 of the 13 staff members) with a nurse manager who was interested in research and who encouraged staff members to participate. Some staff members may have been reluctant to answer the questions and return the completed forms to the nurse manager. Based on this return rate, it seemed reasonable to believe that the 25% return rate per unit required for inclusion into the study was feasible.

The nurse manager reported the demographics of the entire staff. The staff, as a whole, did not differ substantially from those who had completed the instruments. Both the entire staff and the staff who responded ranged in age from 23 to 54 with an average of 40-41 years. They tended to be female, Asian, employed 16-17 years in nursing, employed 11-12 years in the hospital, and employed 8-9 years in the unit. Three of the respondents had a diploma as their basic nursing preparation, and the nurse manager

reported that most of the RNs had associate degrees as the basic nursing preparation. Both the entire staff and the respondents were primarily RNs who worked full time.

The responding staff members demonstrated that the packet could be completed in 30-45 minutes. Although this was lengthy, the investigator believed that further reduction of the number of instruments would make it impossible to adequately study the research variables. The drawing of $250 lottery prize was a motivational device for some of the participants. After feedback from the bargaining unit leaders of the labor units representing the workers, and because of a possible perception of coercion by the staff members, and the workload of the nurse managers, a change was made in the procedure of instrument distribution. It was decided that the questionnaires would not be distributed by the nurse managers but would be placed in boxes in the individual units by the investigator who would then make frequent rounds to answer questions, ask for volunteers, and pick up completed questionnaires.

Reliability Estimates of the Instruments

In order to determine reliability assessments of the Organizational Culture Inventory, the Job Content Questionnaire, and the Cook and Medley Hostility Scale, the internal consistency of the instruments was examined using Cronbach's alpha coefficient and the results were compared with published reports.

Table 1 displays the Cronbach's alpha reliability assessments for the Organizational Culture Inventory.

Cronbach's alpha for the 120-item OCI for the current study ranged from .75 to .90, while Cooke and Rousseau (1988) reported the range as .67 to .92. Cronbach's alpha for the overall instrument was reported at .90 by McDaniel and Stumpf (1993); for the current study it was .94.

Table 1

A Comparison of Reliability Assessments (Cronbach's Alpha) of the Scales of the Organizational Culture Inventory

	Cooke & Rousseau		Current study	
	n	alpha	n	alpha
Humanistic-Encourage	650	.90	884	.89
Affiliative	659	.92	880	.90
Approval	650	.81	866	.86
Conventional	650	.87	865	.89
Dependence	651	.75	873	.82
Avoidance	652	.85	846	.84
Oppositional	641	.67	830	.75
Power	649	.80	848	.82
Competitive	641	.82	867	.88
Perfectionist	649	.77	874	.82
Achievement	656	.85	886	.83
Self-Actualization	651	.82	863	.82

Table 2 displays Cronbach's alpha reliability assessments for the Job Content Questionnaire.

Table 2

A Comparison of Reliability Assessments (Cronbach's Alpha) of Four Scales of the Job Content Questionnaire

	Karasek & Theorell		Current study	
	n	alpha	n	alpha
Decision Latitude	4503	.80	885	.77
Skill Discretion	4503	.76	891	.69
Decision Authority	4503	.72	887	.70
Psychological Demands	4503	.61	880	.72

The overall Cronbach's alpha for the four scales of the 15-item Job Content Questionnaire has been reported between .61 and .80 (Karasek & Theorell, 1990). For this study, the overall Cronbach's alpha for the four combined scales was .69, with the scales ranging from .69 to .77. The Skill Discretion and the Decision Authority scales combine to form the Decision Latitude scale.

Table 3 displays Cronbach's alpha reliability assessments for the Cook and Medley Hostility Scale.

Table 3

A Comparison of Reliability Assessments (Cronbach's Alpha) of the Cook and Medley Hostility Scale

	Cook & Medley		Current study	
	n	alpha	n	alpha
Hostility Scale	55	.86	764	.83

Cronbach's alpha for the 50-item Cook and Medley Hostility Scale has been reported between .80 and .88 (Cook & Medley, 1954; Smith & Frohm, 1985). For this study, the Cronbach's alpha was .83.

Validity Estimates of the Instruments

In order to support the validity of the Organizational Culture Inventory, the Job Content Questionnaire, and the Cook and Medley Hostility Scale, a principal components factor analysis of these instruments was executed and compared with published reports.

Table 4 shows the factor analyses for the Organizational Culture Inventory. Varimax rotation factor analysis for the 120-item OCI as reported by Cooke and Rousseau (1988) indicate that the 12 scales load on three factors. When a Varimax rotation factor analysis was done using this study sample and the three factors were explicitly retained, the loadings were similar to those reported by Cooke and Rousseau (1988) . However, when the rule for factor retention was to keep those factors with an eigenvalue greater than one (Nunnally, 1978), the 12 scales loaded on two factors. One factor included those items indicated as the Constructive Factor in previous investigations and included the same four scales as presented in the table. The other factor was composed of the remaining eight scales in the instrument and made up what Cooke and Rousseau (1988) termed the Aggressive-Defensive and the Passive-Defensive Factors.

Table 4

A Comparison of Varimax Rotated Factor Loadings for the Organizational Culture Inventory Scales for This Study and the Cooke and Rosseau (1988) Report (Three Retained Factors)

	Communality		Passive-Defensive		Constructive		Aggressive-Defensive	
	Cooke& Rosseau n = 604	Current Study n = 872	Cooke& Rosseau n = 604	Current Study n = 872	Cooke& Rosseau n=604	Current Study n = 872	Cooke& Rosseau n = 604	Current Study n = 872
Humanistic	.74	.81	-.09	-.14	.84	.86	-.15	-.22
Affiliative	.81	.83	.11	.08	.86	.87	-.24	-.01
Approval	.56	.71	.70	.78	-.05	-.01	.28	.31
Conventional	.79	.86	.79	.86	-.25	-.16	.32	.33
Dependence	.60	.78	.76	.86	.13	-.10	.15	.20
Avoidance	.67	.73	.63	.52	-.36	-.27	.39	.62
Oppositional	.40	.78	.41	.29	-.11	-.11	.46	.83
Power	.62	.75	.25	.53	.04	-.08	.74	.68
Competitive	.63	.79	.19	.36	-.06	-.12	.77	.81
Perfectionist	.53	.66	.36	.74	.07	.13	.63	.30
Achievement	.76	.78	-.22	.04	.81	.88	.24	.88
Self-Actual	.70	.81	-.15	-.16	.81	.89	.13	.89

Table 5 displays the factor analyses for the Job Content Questionnaire. The Job Content Questionnaire has been modified over time, which is the reason that two items used in the current study were not reported by the author in this factor analysis (Karasek, 1979). Additionally, Karasek's factor analysis was done using Swedish males whereas the

Table 5

A Comparison of Varimax Rotated Factor Loadings of the Job Content Questionnaire for This Study and the Karasek Report

Items	Decision Latitude Factor		Psychological Demand Factor	
	Karasek n = 950	Current Study n = 864	Karasek n = 950	Current Study n = 864
High skill level	.59	.63	.21	.21
Learn new things	.55	.51	.27	.16
Nonrepetitious	.27	-.09	.01	.22
Creative	.71	.65	.07	.08
Allows freedom	.42	.50	.19	-.32
Make one's decisions	.77	.69	.01	.00
Participate in decisions	.73	.51	.08	-.40
Have say on job	.74	.66	.03	-.27
Do different things	NR[a]	.53	NR	.08
Develop special abilities	NR	.66	NR	-.29
Work fast	.05	.29	.44	.63
Work very hard	.20	.37	.55	.70
Not enough time	.32	-.03	.46	.68
Excessive work	.04	.02	.51	.71
Conflicting demands	.13	-.17	.35	.56

Note. [a]NR = not reported

factor analysis for this study was done using Americans who were primarily female (88.4%).

Table 5 displays the results of the factor analysis for this study when two factors are explicitly retained. When the factors are retained by using the rule of keeping eigenvalues greater than one, the items loaded on three factors: psychological demand, skill discretion, and decision authority. The latter two factors comprise the decision latitude factor. There was a high level of agreement between factor loadings reported by Karasek (1979) and those determined for this study, which supports the notion of construct validity for this instrument for the study sample.

Table 6 displays the factor analyses of the Cook Medley Hostility Scale.

Table 6

A Comparison of Factor Analysis of the Cook Medley Hostility Scale for This Study and the Costa et al., (1986) Study Report

	Costa et al. (1986) n = 1002	Current Study n = 764
Eigenvalues >1	14	18
% Items Loading on First Factor	68	63.9
Scree Plot Suggests	2 factors	1 factor

Varimax rotation factor analysis of the Cook and Medley Hostility (Ho) Scale was done using a sample of 764 in this study. It showed items loading on 16 factors when the number of factors was not explicated in the Crunch 4 program. There were 18 items with an eigenvalue greater than one, and 63.9% of the items loading on one factor. Costa, Zonderman, McCrae, and Williams (1986) performed a principal components analysis with

1002 subjects and found that 14 items had an eigenvalue greater than one. They also found that 68% of the items loaded on the first factor. Costa et al. (1986) used a scree test and found that it suggested two factors which, after Varimax rotation, they called "cynicism" and "paranoid alienation." Using a scree plot to evaluate the eigenvalues in this study, there appeared to be only one factor for the current study sample.

Using rational analysis of the item content, Barefoot, Dodge, Peterson, Dahlstrom, and Williams (1989) identified six subsets in the Ho scale. Smith and Frohm (1985) concluded that a number of the items converged on a factor called "cynicism" and reflect "cynical, distrusting attitudes toward others, rather than general emotional instability" (p. 505).

Analysis

Description of the Sample

Units Included in the Study

The potential number of nursing units that could have been admitted into the study was 112, and the number included in the study was 67. Table 7 details the type of units admitted and those not included due to less than 25% of unit participation. Seventeen of the possible ICU/CCU units were included in the study. Three of the medical units, 5 of the surgical units and 15 medical-surgical units were entered into the study. There were no operating rooms who met the admission criteria, but all of the post anesthesia care units were entered. Two of the 5 emergency departments, 3 of the 4 burn units, and all 4 of the step down or intermediate care units were entered into the study. Two of the labor and delivery units were entered, as were 4 of the 5 post partum units. In one of the hospitals, the labor and delivery and the post partum units were combined so that these units were counted as a post partum unit. Two of the 8 same day surgery units were admitted and 5 units listed in the other category were entered. The other category units included a dialysis units, a rehabilitation unit, 2 life flight units, and a IV therapy unit.

Table 7

A Comparison of Potential, Excluded and Included Units by Unit Type

	Potential		Excluded		Included	
	n	%	n	%	n	%
Total Units	112	100.0	45	40.2	67	59.8
Total Staff	4206	100.0	2053	48.8	2153	50.5
Total Participant	909	100.0	267	31.6	622	68.4
ICU/CCU	20	100.0	3	15.0	17	85.0
Medical	8	100.0	5	62.5	3	37.5
Surgical	10	100.0	5	50.0	5	50.0
Operating Room	5	100.0	5	100.0	0	0.0
Post Anesthesia	5	100.0	0	0.0	5	100.0
Same Day Surgery	8	100.0	6	75.0	2	25.0
Emergency	5	100.0	3	60.0	2	40.0
Labor & Delivery	4	100.0	2	50.0	2	50.0
Post Partum[a]	5	100.0	1	20.0	4	80.0
Step Down	4	100.0	0	0.0	4	100.0
Burn	4	100.0	1	25.0	3	75.0
Medical-Surgical	27	100.0	12	44.4	15	55.5
Other[b]	6	100.0	1	16.7	5	83.3

Note. [a]One hospital had a combined labor & delivery and postpartum unit. This was counted as a post partum unit. [b]This category included one dialysis unit, two life flight units, one rehabilitation unit, and one IV therapy unit.

One factor that may have contributed to a unit not meeting the admission criteria was its size. Most of the operating rooms were large units and, even though a substantial

number of staff members completed the questionnaires, none of them reached the 25% participation needed to be entered in the study. A factor in participation may have been the number of personal contacts the investigator made with individual staff members. It was more difficult to talk to individuals in the operating rooms because of the dress and other restrictions. Another factor may have been the interest or lack of interest in this project by the nurse managers.

As part of the data on unit demographics, shift percentages and position percentages were collected for the total staff, that is those who did and did not complete questionnaires in the units included in the study. There were significant differences in three categories of shift and position. Of the total staff, 76.7% were RNs; in the participants, 80.6% were RNs. There were significantly more ($p = .014$) RNs in the sample than in the population of included units. Of the total staff, 14.4% were nurse assistants, orderlies, or technicians; among the participants, 10.3% belonged to these categories There were significantly fewer ($p = .001$) nurse assistants, orderlies, or technicians in the sample than in the population of included units. Of the total staff, 7.8% were clerical; in the participants, 8.1% were clerical, a difference that was not significant. Of the total staff, 16.3% worked days, 9.1% worked evenings, and 5.3% worked nights. Among the participants, 19.0% worked days, 8.3% worked evenings, and 6.8% worked nights. None of these differences were significant. On the total staff, 35.8% worked 12-hour A.M.; 32.0% of the participants worked 12-hour A.M. shifts. There were significantly fewer ($p = .019$) 12-hour A.M. participants in the sample than in the population of the included units. In the total staff, 33.6% worked 12-hour P.M. shifts and in the participants 34.0% worked 12-hour P.M. shifts. This difference was not significant.

Tables 8 and 9 display the demographics of staff members who completed the questionnaires from units both included and excluded from the study. This table does not address staff members who did not complete the questionnaires from either included or excluded study units.

Table 8

A Comparison of Ratio Demographics of Staff Members of Potential Units, Units Excluded from the Study, and Units Included in the Study

	Potential			Excluded			Included		
	n	Mean	SD	n	Mean	SD	n	Mean	SD
Age in Years	899	36.6	7.9	285	37.1	7.5	614	36.3	8.1
Years in Nursing*	869	11.7	7.6	274	12.9	7.5	595	11.1	7.4
Years in Hospital*	903	7.2	5.9	285	8.1	6.1	618	6.8	5.7
Years in Unit*	902	5.4	4.7	284	6.5	5.0	618	4.9	4.5
Years in Specialty*	902	7.6	5.8	280	8.6	6.0	602	7.1	5.6
Hours per Day*	906	10.9	2.3	287	10.5	2.5	619	11.0	2.1
Hours per Week	907	35.6	6.6	287	36.0	6.8	620	35.1	6.5

Note. * $p < .05$

Table 9

A Comparison of Categorical Demographics of Staff Members in Potential Study Units, Excluded Units, and Included Units by Unit Type

	Potential		Excluded		Included	
	n	%	n	%	n	%
Gender	906	100.0	286	100.0	620	100.0
Females	802	88.5	247	86.4	555	89.5
Males	104	11.5	39	13.6	65	10.5
Ethnicity	875	100.0	276	31.5	599	68.5
White/Caucasian	659	75.3	206	74.6	453	75.6
Black/African	34	3.9	8	2.9	26	4.3
Asian	82	9.4	29	10.5	53	8.8
Filipino	37	4.2	13	4.7	24	4.0
Hispanic	44	5.0	11	4.0	33	5.5
Native American	13	1.5	5	1.8	8	1.3
Other	6	0.7	4	1.4	2	0.4
Basic Preparation	848	100.0	273	32.2	575	67.8
Nurse Assistant	61	7.2	17	6.2	44	7.7
LVN/LPN	29	3.4	9	3.3	20	3.5
Associate Degree	268	31.6	69	25.3	199	34.6
Baccalaureate	344	40.6	115	42.1	229	39.8
Diploma	106	12.5	49	17.9	57	9.9
Other	40	4.7	14	5.1	26	4.6

Table 9 (continued)

Highest Degree	888	100.0	279	31.4	609	68.9
Associate Degree	237	26.7	58	20.8	179	29.4
Baccalaureate	430	48.4	143	51.3	287	47.1
Master of Science	62	7.0	22	7.9	40	6.6
PhD	7	0.81	2	0.7	5	0.8
No Degree	152	17.1	54	19.4	98	16.1
Shift*	886	100.0	280	31.6	606	68.4
Day	198	22.3	83	41.9	115	58.1
Evening	91	10.3	41	45.1	50	54.9
Night	46	5.2	5	10.9	41	89.1
AM 12	205	23.1	64	31.2	141	68.8
PM 12	212	23.9	59	27.8	153	72.2
Rotate AM/PM 12	134	15.1	28	20.9	106	79.1
Position	906	100.0	287	31.7	619	68.3
RN	734	81.0	235	81.9	499	80.6
LVN/LPN	8	0.9	2	0.7	6	1.0
NA/Orderly	65	7.2	21	7.3	44	7.1
Clerical	65	7.2	21	7.3	44	7.1
Other	32	3.5	12	4.2	20	3.2

Note. *$p < .05$

Staff members from units both excluded and included in the study were typically white females with a mean age of 36.6 years. Potential participants had worked an average of 11.7 years in nursing, 7.2 years in the hospital in which they were employed, 5.4 years in the unit, and 7.6 years in their specialty. The BSN was the basic nursing preparation for 40.6% of the potential participants and was the highest degree for 48.4%. Potential participants were typically RNs who worked 10.9 hours per day and 35.6 hours per week.

Using analysis of variance (ANOVA) and Chi square, statistically significant differences were found in several areas between groups of included and excluded staff members who completed the questionnaires. There were differences at the .05 level in the number of hours worked per day, the years in nursing, years in the unit, years in the hospital, and years in the specialty. In all these areas, the excluded group had more years in each category than the included group, and the excluded group worked fewer hours per day than the included group.

There also was a statistically significant difference at the .05 level between the excluded and included groups in the category of work shift. Using Scheffe post hoc pairwise comparison after the Chi square, results indicated a staff member was significantly more likely to be admitted to the study if that person worked 8-hour night shift versus 8-hour day shift ($p = .008$), or worked rotating A.M./P.M. 12-hour shift versus 8-hour day shift ($p = .007$), or worked 8-hour night shift versus 8-hour evening shift ($p = .006$), or worked rotating A.M./P.M. 12-hour shift versus 8-hour evening shift ($p = .010$). These differences may be accounted for, in part, by the night shift and rotating shift staff having more time at work to complete the questionnaires.

Staff Member Demographics

Tables 10, 11, 12, and 13 display demographic information of the study participants who were in units admitted to the study. The units are grouped by type of unit.

Table 10

A Comparison of Ratio Demographics of Staff Members by Unit Type

	ICU/CCU			Step Down			Post Anesthesia			Emergency Dept			Burn Unit			Other		
Number of Units	17			4			5			2			3			5		
	n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD
Age in Years	203	35.1	7.2	26	38.2	6.3	23	39.6	9.7	23	36.3	9.7	21	39.9	8.3	20	38.5	2.4
Hours per Day*	203	12.0	2.2	27	11.6	1.1	32	10.1	1.7	24	11.4	1.4	20	11.8	0.9	20	10.3	1.5
Hours per Week	203	35.9	6.1	27	36.0	5.0	32	37.3	6.5	25	37.4	7.7	18	34.8	4.9	20	35.9	7.5
Years in Nursing	197	9.8	7.0	27	11.6	6.1	32	15.7	7.8	23	11.4	7.8	21	11.5	7.4	20	12.5	6.5
Years in Hospital	204	5.7	4.8	27	6.7	5.3	32	9.9	7.5	25	5.6	4.4	21	7.4	6.9	20	8.1	6.5
Years in Unit	202	4.4	4.3	27	4.5	3.3	32	6.5	4.9	25	4.8	3.5	21	6.5	6.2	20	4.7	4.7
Years in Specialty	203	7.1	5.7	27	6.1	4.3	31	9.2	5.2	25	7.4	5.6	19	7.9	6.2	20	6.3	5.2

Note. *p< .05

Table 11

A Comparison of Categorical Demographics of Staff Members by Unit Type

	ICU/CCU		Step Down		Post Anesthesia		Emergency Dept		Burn		Other	
Number of Units	17		4		5		2		3		5	
	n	%	n	%	n	%	n	%	n	%	n	%
Gender	203	100.0	27	100.0	32	100.0	24	100.0	21	100.0	20	100.0
Females	180	88.7	27	100.0	28	87.5	17	70.8	19	90.5	15	75.0
Males	23	11.3	0	0.0	4	12.5	7	29.2	2	9.5	5	35.0
Ethnicity	200	100.0	25	100.0	30	100.0	24	100.0	21	100.0	18	100.0
White/Caucasian	163	81.5	17	68.0	25	83.3	20	83.3	19	90.5	15	83.3
Black/African	6	3.0	2	8.0	1	3.3	0	0.0	1	4.8	1	5.6
Asian	12	6.0	5	20.0	2	6.7	2	8.3	0	0.0	2	11.1
Filipano	8	4.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hispanic	6	3.0	1	4.0	2	6.7	2	8.3	1	4.8	0	0.0
Native American	5	2.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Basic Preparation	189	100.0	26	100.0	30	100.0	18	100.0	18	100.0	19	100.0
Nurse Assistant	11	5.8	3	11.5	1	3.3	0	0.0	4	22.2	1	5.3
LVN/LPN	3	1.6	3	11.5	2	6.7	0	0.0	0	0.0	0	0.0
Associate Degree	67	35.4	6	23.1	11	36.7	13	72.2	9	50.0	11	57.9
Baccalaureate	80	42.3	13	50.0	10	33.3	2	11.1	5	27.8	5	26.3

Table 11 (continued)

Diploma	17	9.0	1	3.8	6	20.0	3	16.7	0	0.0	2	10.5
Other	11	5.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Highest Degree	201	100.0	27	100.0	32	100.0	24	100.0	20	100.0	20	100.0
Associate Degree	54	26.9	6	22.2	10	31.3	8	33.3	6	30.0	8	40.0
Baccalaureate	107	53.2	16	59.3	15	46.9	8	33.3	9	45.0	9	45.0
Master od Science	13	6.5	1	3.7	2	6.3	3	12.5	3	15.0	1	5.0
PhD	0	0.0	0	0.0	0	0.0	1	4.2	1	5.0	0	0.0
No Degree	27	13.4	4	14.8	5	15.7	4	16.7	1	5.0	2	10.0
Shift*	201	100.0	27	100.0	31	100.0	23	100.0	19	100.0	20	100.0
Day	19	9.0	4	14.8	9	29.0	1	4.3	2	10.5	11	55.0
Evening	4	2.0	0	0.0	8	25.8	1	4.3	0	0.0	1	5.0
Night	15	7.5	0	0.0	2	6.5	0	0.0	0	0.0	0	0.0
AM 12	52	25.9	10	37.0	4	12.9	7	30.4	7	36.8	4	20.0
PM 12	67	33.3	13	48.1	0	0.0	9	39.1	10	52.6	4	20.0
Rotate AM/PM 12	67	33.3	0	0.0	8	25.8	5	21.7	0	0.0	0	0.0
Position	203	100.0	28	100.0	32	100.0	24	100.0	21	100.0	20	100.0
RN	168	82.8	24	85.7	29	90.6	18	75.0	14	66.7	18	90.0
LVN/LPN	1	0.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
NA/Orderly	10	4.9	3	10.7	2	6.2	0	0.0	2	9.5	1	5.0
Clerical	18	8.9	1	3.6	1	3.1	2	8.3	4	19.0	0	0.0
Other	6	3.0	0	0.0	0	0.0	4	16.7	1	4.8	1	5.0

Note. *p<.05

Table 12

A Comparison of Ratio Demographics of Staff Members by Unit Type

	Medical Surgical			Medical			Surgical			Labor & Delivery			Post Partum			Same Day Surgery		
Number of Units	15			3			5			2			4			2		
	n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD
Age in Years	124	35.8	9.3	33	34.8	8.3	60	34.8	6.7	24	38.7	8.6	51	36.8	7.3	15	40.0	7.5
Hours per Day*	124	10.1	2.3	33	11.3	1.5	60	10.7	1.9	24	10.3	2.0	52	10.9	1.8	15	8.7	1.5
Hours per Week	124	35.3	6.1	32	34.9	5.2	60	34.7	5.3	24	33.4	6.8	52	31.1	7.7	15	38.7	4.2
Years in Nursing	113	11.5	8.6	32	9.5	6.6	59	10.1	7.1	23	13.0	8.5	51	11.5	6.7	15	14.1	6.4
Years in Hospital	124	6.9	6.4	33	7.3	5.2	60	6.8	5.8	23	8.2	5.8	52	7.0	5.4	15	9.9	6.5
Years in Unit	122	4.6	4.7	33	5.2	3.6	60	5.4	4.6	24	5.6	4.3	52	5.7	4.4	15	3.7	2.3
Years in Specialty	124	6.2	5.6	30	6.0	3.7	58	6.9	5.4	23	8.1	6.9	51	8.1	5.7	14	6.5	6.1

Note. * $p < .05$

Table 13

A Comparison of Categorical Demographics of Staff Members by Unit Type

	Medical-Surgical		Medical		Surgical		Labor& Delivery		Post Partum		SameDaySurgery	
Number of Units	15		3		5		2		4		2	
	n	%	n	%	n	%	n	%	n	%	n	%
Gender	124	100.0	19	100.0	59	100.0	24	100.0	52	100.0	15	100.0
Females	114	91.9	16	84.2	51	86.4	23	95.8	52	100.0	13	86.7
Males	10	8.1	3	15.8	8	13.6	1	4.2	0	0.0	2	13.3
Ethnicity	118	100.0	18	100.0	57	100.0	23	100.0	50	100.0	15	100.0
White/Caucasian	78	66.1	9	50.0	43	75.4	17	73.9	35	70.0	12	80.0
Black/African	3	2.5	3	16.7	3	5.3	2	8.7	3	6.0	1	6.7
Asian	18	15.3	2	11.1	4	7.0	1	4.3	4	8.0	1	6.7
Filipano	8	6.8	2	11.1	2	3.5	1	4.3	2	4.0	0	6.7
Hispanic	8	6.8	2	11.1	3	5.3	2	8.7	6	12.0	0	0.0
Native American	2	1.7	0	0.0	2	3.5	0	0.0	0	0.0	0	0.0
Basic Preparation	111	100.0	19	100.0	59	100.0	24	100.0	48	100.0	14	100.0
Nurse Assistant	4	7.2	4	21.1	8	13.6	1	4.2	3	6.3	0	0.0
LVN/LPN	4	3.6	1	5.3	1	1.7	0	0.0	4	8.3	2	14.3
Associate Degree	34	30.6	5	2.5	20	33.9	5	20.8	12	25.0	6	42.9
Baccalaureate	47	42.3	5	26.3	26	44.1	10	41.7	21	43.8	5	35.7

Table 13 (continued)

Diploma	13	11.7	1	5.3	3	5.1	3	12.5	7	14.6	1	7.1
Other	5	4.5	3	15.8	8	1.7	5	20.8	1	2.1	0	0.0
Highest Degree	120	100.0	19	100.0	57	100.0	24	100.0	51	100.0	14	100.0
Associate Degree	35	29.2	6	31.6	18	31.6	6	25.0	16	31.4	6	42.9
Baccalaureate	54	45.0	5	26.3	29	50.0	9	37.5	19	37.3	7	50.0
Master of Science	9	7.5	1	5.3	0	0.0	2	8.3	5	9.8	0	0.0
PhD	1	0.8	0	0.0	1	1.8	0	0.0	1	2.0	0	0.0
No Degree	21	17.5	7	36.8	9	15.8	7	29.2	10	19.6	1	7.1
Shift*	119	100.0	19	100.0	59	100.0	22	100.0	52	100.0	14	100.0
Day	27	22.7	3	15.8	11	18.6	3	13.6	12	23.1	14	100.0
Evening	21	17.6	1	5.3	8	13.6	1	4.5	5	9.6	0	0.0
Night	11	9.2	1	5.3	2	3.4	3	13.6	7	13.5	0	0.0
AM 12	29	24.4	9	47.4	8	13.6	4	18.2	7	13.5	0	0.0
PM 12	20	16.8	5	26.3	12	20.3	8	36.4	5	9.6	0	0.0
Rotate AM/PM 12	0	0.0	0	0.0	18	30.5	3	13.6	16	30.8	0	0.0
Position	122	100.0	19	100.0	60	100.0	24	100.0	52	100.0	14	100.0
RN	97	79.5	12	63.2	48	80.0	18	75.0	41	78.8	12	85.7
LVN/LPN	0	0.0	0	0.0	1	1.7	0	0.0	3	5.8	1	7.1
NA/Orderly	10	8.2	3	15.8	8	13.4	0	0.0	5	9.6	0	0.0
Clerical	10	8.2	3	15.8	2	3.3	5	20.8	3	5.8	1	7.1
Other	5	4.1	1	5.3	1	1.7	1	4.2	0	0.0	0	0.0

Note. $p<.05$

These tables are arranged by unit type and type of variable, with Tables 10 and 11 being intensive and coronary care, step down or intermediate care, post anesthesia, emergency department, burn, and the "other" category, which is made up of 2 life flight units, a dialysis unit, a rehabilitation unit, and a IV therapy unit. Tables 12 and 13 are divided into medical-surgical units, medical units, surgical units, labor and delivery, post partum, and same day or outpatient surgery units. The units in the other category and the same day surgery units were all located in acute care hospitals and were not thought of as ambulatory units or clinics.

Information on the ratio demographic tables includes the number of units in each category that are included in the study, the age in years of the staff, the number of years the individual has been in nursing, years the individual has worked in the hospital, years worked in the unit, years worked in the specialty, hours worked per day, and hours worked per week. The categorical demographic tables display the gender, ethnicity, basic nursing preparation, highest degree held, position held, and shift.

The range of the mean ages of staff members in the various unit categories who participated in the study was 34.8 to 40.0 years old and most were white females. There are larger percentages of males in emergency departments and in the other unit category, which consisted of dialysis, life flight, rehabilitation, and IV therapy. All the categories were at least 86% female, with step down and post partum being 100% female. Although all the units were staffed predominantly by white staff members (59%-91%), the step down, medical-surgical, and medical units had the largest percentages of non-white staff members, of which 20-22% of the total number were Asian.

The range of mean years in nursing of the participants was between 9.5 and 15.7 years, with post anesthesia, labor and delivery, and same day surgery having the greatest number of years of experience. The range of mean years worked in the hospital was between 5.6 and 9.9 years, with post anesthesia, labor and delivery, and same day surgery

having the greatest number of years in the hospital. The range of mean years worked in the unit was between 3.7 and 6.5 years, and between 6.0 and 9.2 years in their specialty.

Baccalaureate and associate degrees were the most common basic nursing preparation, with the bachelor of science degree the highest degree held by most of the staff members. The range of mean hours worked per week by study participants was between 31.1 and 38.7 hours. The range of mean hours worked per day by the participants in the ICU, step down, post anesthesia, emergency department, burn, and other units was 10.1-12.0 hours; and in the medical, surgical, medical-surgical, labor and delivery, post partum, 8.7-11.3 hours. Many units worked 10 or 12-hour shift or rotated shifts. Nineteen percent of the participants worked 8-hour days, 23% worked 12-hour days (7 am to 7 pm), 25% worked 12-hour nights (7 pm to 7 am), 18% rotated 12-hour shifts, 8% worked 8-hour evenings, and 7% worked 8-hour nights.

There was a statistically significant difference at the .05 level between several of the unit types and the staff demographics. The ICU/CCU staff worked significantly more hours per day than the surgical units staff, the post anesthesia care unit staff, the other unit staff, and the medical-surgical unit staff. The ED, the labor and delivery, the post partum, and the step down staff worked significantly more hours per day than the medical-surgical units staff. The post partum staff worked more hours per day than the other unit category staff.

Chi square analysis indicated a statistically significant difference in the unit types by shift. Because many of the cells had small frequencies, shifts were compared using the ICU/CCU and the medical surgical categories, the largest groups. Scheffe post hoc pairwise comparison indicated that, if the participant worked in the ICU/CCU versus the medical surgical areas, there was a better chance that the participant would be on 12-hour P.M. shift versus 8-hour day shift ($p = .003$), rotating A.M./P.M. 12-hour shifts versus 8-hour day shift ($p = .006$), 12-hour A.M. shift versus 8-hour evening shift ($p = .003$), 12-

hour P.M. shift versus 8-hour evening shift ($p < .001$), or rotating A.M./P.M. 12-hour shifts versus 8-hour evening shift ($p = .001$).

Unit Demographics

Tables 14 and 15 display demographics of the nursing units sorted by unit type. The unit types are categorized in the same way as in Tables 10 through 13. Tables 14 and 15 display total full time equivalents (FTEs) in the unit, total number of RNs and total number of all staff members working more than 20 hours per week in the units at the time of data collection. Other information includes the average daily census for the most recent fiscal year of those units in which it was measured and the number of grievances, number of incident reports, number of patient falls, and number of staff injuries in the quarter October through December, 1993. The number of nurse managers the unit had in the last 5 years also is displayed. Data about whether the unit had been without a nurse manager for greater than 3 months in the last 5 years and the number of staff members who worked in the unit for various lengths of time were not tracked by most of the institutions, and these items were not included in the analysis.

Mean total FTEs ranged from 14.2 to 41.7. Generally, units with larger FTEs did not complete enough questionnaires to be admitted into the study. RNs working more than 20 hours per week varied from 11 to 38, and total staff members working more than 20 hours per week varied from 13.4 to 48. The burn units had the lowest average daily census (5.6) and the surgical units had the highest (26.9).

There were very few grievances in these institutions. According to the labor relations departments, the issues usually were resolved before they reached the grievance stage. Numbers of grievances ranged from 0.0 to 0.1 on averages for the quarter. The number of incident reports was highly variable and ranged from 2.0 to 293.0 for the quarter. Each institution had different policies on what prompted an incident report, so these numbers are not very meaningful.

Table 14

A Comparison of Ratio Demographics of Units by Unit Type

	ICU/CCU		Step Down		Post Anesthesia		Emergency Dept		Burn Unit		Other	
Number of Units	17		4		5		2		3		5	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Total FTEs	36.5	16.2	27.0	16.4	21.0	11.8	41.1	25.7	19.0	8.6	14.2	4.1
Total Number RNs	34.2	15.9	17.3	7.1	18.6	9.8	26.0	8.5	15.0	9.5	11.0	3.1
Total Number Staff	40.1	17.7	25.0	11.8	23.4	13.5	37.5	14.8	21.0	7.8	13.4	3.8
Avg Daily Census	8.4	3.0	10.5	7.2	20.0	13.2	NA	NA	5.6	1.8	NA	NA
Number Grievences	0.06	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incident Reports	23.2	21.5	6.7	4.0	11.0	10.5	29.3	0.0	8.0	2.8	5.0	8.5
Patient Falls	0.8	0.9	0.8	0.9	0.0	0.0	3.5	2.1	0.3	0.6	3.0	6.7
Staff Injuries	1.1	0.8	0.5	1.0	1.2	0.8	1.5	0.7	1.3	1.5	0.5	0.6
Managers in 5 years	1.6	0.9	1.3	0.6	2.5	1.3	4.0	0.0	1.0	0.0	2.0	1.7

Table 15

A Comparison of Ratio Demographics of Units by Unit Type

	Medical Surgical		Medical		Surgical		Labor & Delivery		Post Partum		Same Day Surgery	
Number of Units	15		3		5		2		4		2	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Total FTEs	26.0	11.9	23.1	6.9	41.7	19.9	36.6	0.4	37.0	15.2	20.6	19.6
Total Number RNs	19.5	10.6	16.3	9.7	32.8	19.1	38.0	2.8	34.5	15.1	14.5	9.2
Total Number Staff	28.7	12.7	25.0	12.3	44.4	19.2	48.0	0.0	47.3	15.6	20.0	14.1
Avg Daily Census	15.2	7.3	19.4	5.6	26.9	8.8	NA	NA	14.7	2.4	26.0	0.0
Number Grievences	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incident Report	20.8	14.1	7.0	0.0	47.2	60.3	17.0	1.4	14.3	12.4	2.0	2.8
Patient Falls	4.4	2.9	1.7	2.9	4.6	2.6	0.5	0.7	0.3	0.5	0.0	0.0
Staff Injuries	1.7	1.2	0.0	0.0	0.8	0.8	3.0	1.4	1.0	0.8	0.0	0.0
Managers in 5 yrs	1.2	0.4	2.0	0.0	1.8	1.3	1.0	0.0	1.5	0.7	1.0	0.0

Patient falls generally were low for the quarter. The means varied from 0.0 in the medical and same day surgery units to 4.6 in the surgery units.

The mean number of staff injuries also was generally low for the quarter. Means ranged from a low of 0.0 in the same day surgery and step down units to a high of 3.0 in the labor and delivery units. Total number of injuries for all units for the quarter was 74, with 33 injuries (44.6%) back injuries and 15 (20.3%) needle sticks. Other types of injuries included 8 eye or face splashes, 10 contusions or falls, 3 cuts, 4 wrist or shoulder strains, and 1 respiratory distress. The medical-surgical areas were the largest category of units in the study and had the highest number of back injuries and the highest number of needle sticks. The medical-surgical areas also had the highest percentage of injuries at 36.5% with the ICU/CCUs next at 26.0%.

Most units had one or two nurse managers in the last 5 years but the one emergency department for which there were data had four nurse managers in the last 5 years. Unfortunately, it was not possible to discover whether the units had been without a nurse manager greater than 3 months in the last 5 years.

There were no statistically significant differences among unit types in the unit demographics except for average daily census. That is to be expected, since the units varied widely in number of beds.

Nurse Managers Demographics

Tables 16, 17, 18, and 19 and display, demographic information concerning the nurse managers of the units admitted into the study.

Table 16

A Comparison of Ratio Demographics of Nurse Managers by Unit Type

	ICU/CCU			Step Down			Post Anesthesia			Emergency Dept			Burn Unit			Other		
Number of Units	17			4			5			2			3			5		
	n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD
Age in Years	15	39.8	5.1	4	42.5	2.6	4	45.3	4.1	1	37.0	0.0	3	42.3	4.1	5	42.0	6.9
Number Units Mgd	17	1.9	0.7	4	2.5	1.3	5	1.2	0.4	2	1.0	0.0	3	2.0	0.0	5	1.2	0.4
Yrs in Management	16	10.4	4.5	4	9.3	6.9	4	7.8	5.6	1	5.0	0.0	3	8.3	6.7	5	9.5	5.7
Years in Hospital	16	11.9	6.3	4	8.6	6.1	4	15.1	9.9	1	2.0	0.0	3	8.3	6.7	5	10.0	7.7
Yrs Hospital Mgn	16	7.7	4.9	4	5.5	3.7	4	5.4	7.2	1	2.0	0.0	3	6.0	7.0	5	5.9	3.9
Years in Unit	16	10.8	6.1	4	4.8	0.9	4	9.8	9.7	1	2.0	0.0	3	8.3	7.6	5	6.5	7.1
Years in Unit Mgn	16	7.6	5.0	4	5.0	1.5	4	2.0	0.0	1	2.0	0.0	3	6.0	7.0	5	4.8	4.3

Table 17

A Comparison of Categorical Demographics of Nurse Managers by Unit Type

	ICU/CCU		Step Down		Post Anesthesia		Emergency Dept		Burn		Other	
Number of Units	17		4		5		2		3		5	
	n	%	n	%	n	%	n	%	n	%	n	%
Gender	16	100.0	4	100.0	4	100.0	2	100.0	3	100.0	5	100.0
Females	16	100.0	4	100.0	4	100.0	2	100.0	3	100.0	4	80.0
Males	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	20.0
Ethnicity	16	100.0	4	100.0	4	100.0	2	100.0	3	100.0	4	100.0
White/Caucasian	16	100.0	4	100.0	3	75.0	2	100.0	3	100.0	3	75.0
Black/African	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	25.0
Asian	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	11.1
Filipano	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hispanic	0	0.0	0	0.0	1	25.0	0	0.0	0	0.0	0	0.0
Native American	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Basic Preparation	16	100.0	4	100.0	4	100.0	1	100.0	3	100.0	5	100.0
Associate Degree	5	31.3	1	25.0	1	25.0	0	0.0	1	33.3	1	20.0
Baccalaureate	10	62.5	1	25.0	3	75.0	1	3.3	2	66.7	2	40.0

Table 17 (continued)

Master Degree	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Diploma	1	6.3	2	50.0	0	0.0	0	0.0	0	0.0	2	40.0
Highest Degree	16	100.0	4	100.0	4	100.0	1	100.0	3	100.0	5	100.0
Associate Degree	0	0.0	1	25.0	0	0.0	0	0.0	1	33.3	0	0.0
Baccalaureate	10	62.5	0	0.0	4	100.0	0	0.0	1	33.3	0	0.0
Master Degree	6	37.5	3	75.0	0	0.0	1	100.0	1	33.3	5	100.0
PhD	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
High Degree In	16	100.0	4	100.0	4	100.0	1	100.0	3	100.0	5	100.0
Nursing	8	50.0	3	75.0	4	100.0	1	100.0	2	66.7	4	80.0
Non Nursing	8	50.0	1	25.0	0	0.0	0	0.0	1	33.3	1	20.0

Table 18

A Comparison of Ratio Demographics of Nurse Managers by Unit Type

	Medical Surgical			Medical			Surgical			Labor & Delivery			Post Partum			Same Day Surgery		
Number of Units	15			3			5			2			4			2		
	n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD
Age in Years	11	43.2	5.1	1	44.0	0.0	5	49.3	4.1	1	38.8	0.0	2	35.5	4.9	0	-	-
Number Unit Mgn	15	1.4	0.7	3	2.0	1.7	5	1.6	1.3	2	1.0	0.0	4	1.3	0.5	2	2.5	0.7
Years in Mgn	11	13.2	7.6	1	9.9	0.0	5	10.2	3.3	1	6.0	0.0	2	6.5	0.7	0	-	-
Years in Hospital	11	19.3	4.9	1	18.0	0.0	5	14.2	4.4	1	6.5	0.0	2	10.5	3.5	0	-	-
Years in Hosp Mgn	11	11.5	7.6	1	9.0	0.0	5	10.0	3.4	1	6.5	0.0	2	6.0	1.4	0	-	-
Years in Unit	11	9.3	5.1	1	4.0	0.0	5	7.5	6.3	1	6.5	0.0	2	10.5	3.5	0	-	-
Years in Unit Mgn	11	8.0	4.0	1	9.0	0.0	5	7.9	5.6	1	6.5	0.0	2	6.0	1.4	0	-	-

Table 19

A Comparison of Categorical Demographics of Nurse Managers by Unit Type

	Medical-Surgical		Medical		Surgical		Labor&Delivery		Post Partum		SameDaySurgery	
Number of Units	15		3		5		2		4		2	
	n	%	n	%	n	%	n	%	n	%	n	%
Gender	11	100.0	1	100.0	5	100.0	1	100.0	2	100.0	2	100.0
Females	11	100.0	1	100.0	4	80.0	1	100.0	2	100.0	2	100.0
Males	0	0.0	0	0.0	1	20.0	0	0.0	0	0.0	0	0.0
Ethnicity	11	100.0	1	100.0	4	100.0	1	100.0	2	100.0	2	100.0
White/Caucasian	10	90.9	2	100.0	4	100.0	1	100.0	2	100.0	2	100.0
Black/African	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Asian	1	9.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Filipano	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hispanic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Native American	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Basic Preparation	11	100.0	1	100.0	5	100.0	1	100.0	2	100.0	-	-
Associate Degree	0	0.0	0	0.0	2	40.0	1	100.0	0	0.0	-	-
Baccalaureate	7	63.6	0	0.0	2	40.0	0	0.0	2	100.0	-	-

Table 19 (continued)

Master Degree	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	-	-
Diploma	4	36.4	1	100.0	1	20.0	0	0.0	0	0.0	-	-
Highest Degree	11	100.0	1	100.0	5	100.0	1	100.0	2	100.0	-	-
Associate Degree	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	-	-
Baccalaureate	3	27.3	0	0.0	1	20.0	1	100.0	2	100.0	-	-
Master Degree	7	63.6	1	100.0	4	80.0	0	0.0	0	0.0	-	-
PhD	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	-	-
High Degree In	11	100.0	1	100.0	5	100.0	1	100.0	2	100.0	-	-
Nursing	9	81.8	1	100.0	3	60.0	0	0.0	2	100.0	-	-
Non Nursing	1	9.1	0	0.0	2	40.0	1	100.0	0	0.0	-	-

Tables 16 and 18 display ratio information and tables 17 and 19 display categorical information about the nurse managers of the units in the study. Information on the ratio tables includes age, years in management, years worked in the hospital, years in the hospital as a manager, years in the unit, years in the unit as a manager, and number of units managed. Information on the categorical tables includes gender, ethnicity, basic nursing preparation, highest degree held, and whether the degree was in nursing.

Average ages of the groups of managers ranged from 38.8 years to 45.3 years. Most managers were female and virtually all were white. The managers had from 5 to 13 years of experience, worked in the hospital for 2 to 19 years, worked in the hospital as a manager for 2 to 12 years, worked in their units from 2 to 11 years, and had been managers of their units for 2 to 9 years. Basic nursing preparation primarily was at the baccalaureate level, with the highest degree a master or baccalaureate degree in nursing. Slightly less than one-half of the managers had at least two units for which they were responsible. There were no statistically significant differences among the manager demographics of the different categories of units.

Work Group Culture

Tables 20 and 21 present information related to the 3 factors and 12 subscales of the Organizational Culture Inventory. Each factor is listed followed by the four scales that make up the factor. Tables 20 and 21 display data related to the factors and scales of the Organizational Culture Inventory by nursing unit type. The three major factors of the instrument are constructive culture, aggressive-defensive culture, and passive-defensive culture. The four scales that make up constructive culture include the achievement, self-actualization, humanistic-encouraging, and the affiliative scales. The four scales that make up aggressive-defensive culture are the oppositional, power, competition, and perfectionistic scales. The four scales that make up passive-defensive culture are the

Table 20

Work Group Culture Factors and Scales by Unit Type

	ICU/CCU		Step Down		Post Anesthesia		Emergency Dept		Burn Unit		Other	
Number of Units	17		4		5		2		3		5	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Constructive[a]	141.2	10.0	141.0	7.7	142.4	5.0	137.9	0.9	145.6	23.6	158.6	12.5
Achievement	34.74	2.41	33.96	2.44	35.37	2.02	33.49	2.25	35.85	6.28	39.42	2.86
Self-Actualization	33.66	2.91	34.40	2.16	34.01	1.82	33.31	1.28	36.12	6.77	38.05	3.57
Human Encourage	35.20	2.90	34.49	2.07	34.97	0.68	33.48	0.99	35.52	4.74	38.89	3.40
Affiliative	37.66	2.42	38.19	2.49	38.10	2.02	37.35	0.59	35.16	5.98	41.52	2.69

Note. [a] Minimum: ICU/CCU = 120.5, Step Down = 131.4, Post Anesthesia = 137.1, Education = 137.2, Burn Unit = 118.6, Other = 139.3; Maximum: ICU/CCU = 155.7, Step Down = 149.7, Post Anesthesia = 150.4, Education = 138.6, Burn Unit = 162.6, Other = 169.5

Table 20 (continued)

	ICU/CCU		Step Down		Post Anesthesia		Emergency Dept		Burn Unit		Other	
Number of Units	17		4		5		2		3		5	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Aggressive/Defn[a]	97.9	8.9	109.8	6.6	104.9	10.1	88.2	3.4	98.7	5.8	92.9	13.5
Oppositional	20.85	1.98	22.16	3.73	20.62	2.47	20.26	3.07	22.82	2.76	19.03	2.53
Power	21.78	2.51	24.24	2.89	22.90	3.12	19.37	2.02	23.98	4.41	21.04	2.85
Competition	18.87	2.49	23.52	2.60	19.09	2.92	19.09	3.58	19.79	3.76	16.63	3.85
Perfection	28.76	2.40	30.99	1.53	29.54	2.08	24.69	1.57	28.88	0.6	28.53	5.41

Note. [a] Minimum: ICU/CCU = 86.2, Step Down = 102.0, Post Anesthesia = 89.6, Education = 85.8, Burn Unit = 92.1, Other = 82.6; Maximum: ICU/CCU = 120.6, Step Down = 117.9, Post Anesthesia = 115.0, Education = 90.6, Burn Unit = 103.3, Other = 113.0

Table 20 (continued)

	ICU/CCU		Step Down		Post Anesthesia		Emergency Dept		Burn Unit		Other	
Number of Units	17		4		5		2		3		5	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Passive/Defensive[a]	90.3	8.2	100.9	9.8	92.1	6.6	81.0	9.8	95.5	11.2	85.5	12.9
Approval	25.16	2.60	29.55	1.40	27.54	2.60	25.00	0.61	24.86	1.02	23.20	4.37
Conventional	26.50	2.93	28.37	2.75	27.81	2.25	23.85	3.14	26.16	0.64	25.23	4.44
Dependent	26.95	2.00	28.14	1.24	27.56	2.81	25.69	0.06	26.93	1.35	27.06	3.24
Avoidance	19.32	2.50	23.75	3.29	21.96	3.10	17.25	1.11	20.80	4.53	17.08	2.98

Note. [a] Minimum: ICU/CCU = 76.2, Step Down = 90.4, Post Anesthesia = 83.9, Education = 74.1, Burn Unit = 83.2, Other = 68.6

Maximum: ICU/CCU = 111.9, Step Down = 110.2, Post Anesthesia = 100.9, Education = 87.9, Burn Unit = 105.1, Other = 99.0

Table 21

Work Group Culture Factors and Scales by Unit Type

	Medical Surgical		Medical		Surgical		Labor & Delivery		Post Partum		Same Day Surgery	
Number of Units	15		3		5		2		4		2	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Constructive[a]	149.8	7.1	147.0	22.3	146.1	11.1	152.9	11.0	140.0	6.7	141.9	9.9
Achievement	36.15	2.22	36.98	5.35	36.01	3.31	37.08	1.77	33.79	1.09	34.42	1.89
Self-Actualization	35.25	1.97	34.85	4.41	34.69	2.93	36.39	2.88	33.67	2.04	33.53	4.84
Human Encourage	37.48	2.30	36.18	7.50	36.44	4.71	39.04	4.07	33.95	3.17	35.78	4.19
Affiliative	40.86	1.52	39.93	5.10	38.97	1.54	40.38	2.30	38.26	0.80	38.20	1.00

Note. [a] Minimum: Medical Surgical = 141.3, Medical = 123.8, Surgical = 128.0, Labor & Delivery = 145.1, Post Partum= 130.6, Same Day Surgery = 134.9; Maximum: Medical Surgical = 166.4, Medical = 167.9, Surgical = 159.3, Labor & Delivery = 160.7, Post Partum= 146.4, Same Day Surgery = 148.9

Table 21 (continued)

	Medical Surgical		Medical		Surgical		Labor & Delivery		Post Partum		Same Day Surgery	
Number of Units	15		3		5		2		4		2	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Aggressive/Defn[a]	97.9	10.1	107.2	18.3	103.6	4.1	93.4	6.2	99.5	9.0	106.7	11.2
Oppositional	19.83	2.25	20.60	1.26	21.38	2.48	19.70	1.22	21.02	1.16	21.48	1.00
Power	20.96	3.83	22.63	2.90	23.74	2.05	21.62	0.79	22.16	1.74	22.75	0.35
Competition	18.39	3.41	18.47	2.60	19.69	1.91	18.23	0.98	18.60	1.47	18.18	0.26
Perfection	29.09	3.59	33.00	6.47	31.97	2.81	26.67	1.89	27.97	2.84	29.03	1.72

Note. [a] Minimum: Medical Surgical = 84.3, Medical = 87.7, Surgical = 98.7, Labor & Delivery = 89.1, Post Partum= 87.8, Same Day Surgery = 98.8; Maximum: Medical Surgical = 114.4, Medical = 123.9, Surgical = 109.9, Labor & Delivery = 97.8, Post Partum= 107.9, Same Day Surgery = 114.6

Table 21 (continued)

	Medical Surgical		Medical		Surgical		Labor & Delivery		Post Partum		Same Day Surgery	
Number of Units	15		3		5		2		4		2	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Passive/Defensive[a]	88.4	11.9	94.7	12.3	96.8	5.1	86.2	4.9	89.1	6.1	91.4	0.12
Approval	25.73	2.80	27.11	4.61	26.71	1.08	24.21	0.18	25.67	2.78	25.63	1.95
Conventional	26.80	3.32	29.75	6.28	29.28	1.80	24.64	1.57	27.06	3.04	28.70	2.41
Dependent	26.63	3.00	30.57	5.92	27.80	1.34	25.34	2.09	27.02	3.05	28.83	6.09
Avoidance	18.79	2.51	19.75	1.93	19.81	0.93	19.23	2.68	19.77	1.39	23.5	0.71

Note. [a] Minimum: Medical Surgical = 72.4, Medical = 80.7, Surgical = 93.4, Labor & Delivery = 82.8, Post Partum= 82.7, Same Day Surgery = 91.4; Maximum: Medical Surgical = 109.2, Medical = 103.8, Surgical = 105.7, Labor & Delivery = 89.7, Post Partum= 97.2, Same Day Surgery = 91.5

approval, conventional, dependent, and the avoidance scales. Each scale contains 10 questions, with possible responses ranging from 1 to 5. Since there are four scales in each factor, each scale has a possible low score of 10 and a possible high score of 50. Each factor has a possible low score of 40 and a possible high score of 200.

The data indicated that all the units had predominantly constructive unit cultures, with mean factor scores ranging from a low of 137.9 in the emergency departments to a high of 158.6 in the other unit category (one dialysis, one rehabilitation, two life flight, and one IV therapy unit). The mean scores of the four scales ranged from 33.31 on the self-actualization scale by the emergency departments to 40.86 on the affiliative scale by the medical-surgical units.

The aggressive-defensive mean factor scores ranged from a high of 109.8 in the step down units to a low of 88.2 in the emergency departments. The mean scores of the four scales ranged from 18.23 on the competition scale by the labor and delivery units to 30.99 on the perfectionistic scale by the step down units.

The passive-defensive mean factor scores ranged from a high of 100.9 in the step down units to a low of 81.0 in the emergency departments. Mean scale scores ranged from a high of 29.75 on the approval scale in the medical units to a low of 17.25 on the avoidance scale in the emergency departments.

There were no statistically significant differences among the 12 subscales of the 3 cultures of the OCI by unit type, nor were there statistically significant differences among the three cultures identified by the OCI by unit type.

Workplace Stress

Tables 22 and 23 display data about workplace stress as measured by the two scales of the Job Content Questionnaire using the job strain model. The decision latitude scale is displayed first followed by the two scales of which it is composed, the skill discretion and the decision authority scales. The psychological demand scale is displayed last in the tables. The Job Content Questionnaire is scored in such a way that each scale has a possible high

score of 48 and a possible low score of 12. The decision latitude scale is a sum of the skill discretion and decision authority scales, so that it has a possible low score of 24 and a possible high score of 96.

The decision latitude and the psychological demand scale can be plotted on an X/Y axes; those scores in the lower right quadrant, i.e., low decision latitude and high psychological demand, are considered to have job strain. All the nursing unit scores fell into the upper right quadrant of the graph, which is to say that they were considered active jobs with both high decision latitude and high psychological demands. Based on other studies, the occupations in this category can be described as high in prestige and include nurses, physicians, public officials, bank officers, teachers, managers, teachers, farmers, and electrical engineers (Karasek & Theorell, 1990).

Decision latitude mean scores ranged from a low of 64.1 in the same day surgery units to a high of 74.9 in the other units category (a dialysis, a rehabilitation, 2 life flights, and an IV therapy unit). Within that scale, skill discretion mean scores ranged from a low of 33.73 in the medical units to a high of 37.47 in the other units category, and decision authority ranged from a low of 29.8 in the same day surgery units to a high of 37.39 in the other units. Psychological demand mean scores ranged from a low of 15.8 in the same day surgery units to a high of 24.5 in the step down units. There were no statistically significant differences among unit types in the any of the scales of the Job Content Questionnaire.

Table 22

Workplace Stress Scales by Unit Type

	ICU/CCU		Step Down		Post Anesthesia		Emergency Dept		Burn Unit		Other	
Number of Units	17		4		5		2		3		5	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Decision Latitude[a]	69.9	2.9	69.8	2.2	68.7	4.9	71.3	3.4	70.1	1.2	74.9	9.4
Skill Discretion	35.81	1.37	35.98	0.83	36.76	2.61	36.40	0.24	35.54	0.91	37.47	5.06
Decision Authority	34.15	2.03	33.79	1.83	31.89	3.08	34.92	3.14	34.51	0.30	37.39	4.66
Psycho Demand[b]	18.9	2.9	24.5	3.5	20.5	1.3	20.3	2.5	19.4	1.2	19.3	4.7

Note. [a] Minimum: ICU/CCU = 65.8, Step Down = 66.6, Post Anesthesia = 62.0, Emergency Dept = 68.9, Burn Unit = 69.1, Other = 64.0; Maximum: ICU/CCU = 74.4, Step Down = 71.6, Post Anesthesia = 76.0, Emergency Dept = 73.7, Burn Unit = 71.4, Other = 86.0. [b] Minimum: ICU/CCU = 14.8, Step Down = 20.8, Post Anesthesia = 19.0, Emergency Dept = 18.5, Burn Unit = 18.1, Other = 14.4; Maximum: ICU/CCU = 24.2, Step Down = 29.0, Post Anesthesia = 21.9, Emergency Dept = 22.0, Burn Unit = 20.6, Other = 24.4.

Table 23

Workplace Stress Scales by Unit Type

	Medical Surgical		Medical		Surgical		Labor & Delivery		Post Partum		Same Day Surgery	
Number of Units	15		3		5		2		4		2	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Decision Latitude[a]	71.3	4.8	65.7	2.9	71.4	1.3	73.7	0.1	68.2	3.9	64.1	1.8
Skill Discretion	36.29	1.84	33.73	2.47	37.24	0.89	37.38	0.53	35.47	1.46	34.5	0.71
Decision Authority	35.14	3.23	31.93	2.02	34.04	1.33	36.33	0.47	32.72	2.60	29.8	0.28
Psycho Demand[b]	20.1	3.2	19.9	2.7	22.6	2.9	20.0	4.1	19.3	2.1	15.8	5.0

Note. [a] Minimum: Medical Surgical = 60.6, Medical = 64.0, Surgical = 69.4, Labor & Delivery = 73.7, Post Partum= 62.7, Same Day Surgery = 63.2; Maximum: Medical Surgical = 80.6, Medical = 69.0, Surgical = 72.7, Labor & Delivery = 73.8, Post Partum= 71.3, Same Day Surgery = 65.0. [b] Minimum: Medical Surgical = 12.8, Medical = 16.9, Surgical = 18.3, Labor & Delivery = 17.2, Post Partum= 16.3, Same Day Surgery = 12.3; Maximum: Medical Surgical = 25.2, Medical = 22.2, Surgical = 25.6, Labor & Delivery = 22.9, Post Partum= 21.5, Same Day Surgery = 19.4

Hostility

Tables 24 and 25 display mean hostility scores for the various types of nursing units. The Cook and Medley hostility (Ho) scale was used to measure hostility in individuals in the nursing units. The lowest possible hostility score is 0 and the highest possible score is 50. Mean scores for all types of units indicate a moderately low hostility score. The highest Ho mean unit type score was 17.5 in the step down units, and the lowest Ho mean unit type score was 12.2 in the labor and delivery units. The lowest individual unit score was 10.3 in one of the other category units, and the highest individual unit score was 21.25 in one of the step down units. There was no statistically significant difference among unit types in hostility scores.

Absenteeism and Turnover

Tables 26 and 27 display information concerning absenteeism and turnover percentages for the nursing units. Tables 26 and 27 display percentages of absenteeism in the last 3 months 1993 and turnover for the year of 1993. Mean absenteeism ranged from a low of 3.6% in the other units category to a high of 12.1% in the same day surgery units. Individual scores ranged from a low of 0.0% in one post anesthesia care unit to 17% in one same day surgery unit.

Mean turnover in the nursing units ranged from a low of 0.0% in the same day surgery units to a high of 33.3% in the medical units. Individual scores ranged from a low of 0.0% in several different units to a high of 88.8% in one ICU/CCU. There was a 50% turnover in one burn unit and a 52.6% turnover in one medical unit.

There was substantial variability within the unit categories for both absenteeism and turnover. There were no statistically significant differences among unit types in either absenteeism or turnover.

Table 24

Hostility by Unit Type

	ICU/CCU		Step Down		Post Anesthesia		Emergency Dept		Burn Unit		Other	
Number of Units	17		4		5		2		3		5	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Hostility[a]	34.9	2.3	29.8	1.0	33.9	2.6	36.8	0.1	36.3	3.2	37.2	2.2

Note. [a] Minimum: ICU/CCU = 27.3, Step Down = 28.8, Post Anesthesia = 30.0, Emergency Dept = 36.7, Burn Unit = 32.9, Other = 35.7; Maximum: ICU/CCU = 38.0, Step Down = 30.8, Post Anesthesia = 37.2, Emergency Dept = 36.9, Burn Unit = 39.1, Other = 39.7

Table 25

Hostility by Unit Type

	Medical Surgical		Medical		Surgical		Labor & Delivery		Post Partum		Same Day Surgery	
Number of Units	15		3		5		2		4		2	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Hostility[a]	35.5	2.3	35.6	3.9	35.7	2.7	37.9	0.5	36.0	1.0	35.3	0.4

Note. [a] Minimum: Medical Surgical = 30.7, Medical = 31.6, Surgical = 32.8, Labor & Delivery = 37.6, Post Partum= 35.1, Same Day Surgery = 35.0; Maximum: Medical Surgical = 38.4, Medical = 39.4, Surgical = 38.3, Labor & Delivery = 38.3, Post Partum= 37.5, Same Day Surgery = 35.6

Table 26

Absenteeism and Turnover by Unit Type

	ICU/CCU		Step Down		Post Anesthesia		Emergency Dept		Burn Unit		Other	
Number of Units	17		4		5		2		3		5	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Absenteeism[a]	6.3	1.9	7.5	3.0	3.8	2.8	4.4	0.1	5.6	3.0	3.6	3.1
Turnover[b]	20.1	23.2	22.5	8.4	18.0	8.2	22.7	1.8	26.2	20.7	6.3	9.5

Note. [a] Minimum: ICU/CCU = 1.7, Step Down = 4.4, Post Anesthesia = 0.0, Emergency Dept = 4.0, Burn Unit = 5.0, Other = 0.0; Maximum: ICU/CCU = 9.6, Step Down = 11.8, Post Anesthesia = 7.8, Emergency Dept = 4.7, Burn Unit = 6.3, Other = 6.9.

[b] Minimum: ICU/CCU = 0.0, Step Down = 10.0, Post Anesthesia = 7.0, Emergency Dept = 21.4, Burn Unit = 11.7, Other = 0.0; Maximum: ICU/CCU = 88.8, Step Down = 28.6, Post Anesthesia = 27.2, Emergency Dept = 24.0, Burn Unit = 50.0, Other = 21.4

Table 27

Absenteeism and Turnover by Unit Type

	Medical Surgical		Medical		Surgical		Labor & Delivery		Post Partum		Same Day Surgery	
Number of Units	15		3		5		2		4		2	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Absenteeism[a]	6.4	3.1	4.2	1.7	5.6	1.3	5.3	0.1	9.1	3.7	12.1	6.9
Turnover[b]	10.7	8.1	33.3	25.1	11.8	12.2	21.1	17.2	16.6	11.4	0.0	0.0

Note. [a] Minimum: Medical Surgical = 0.0, Medical = 3.0, Surgical = 3.7, Labor & Delivery = 4.8, Post Partum= 6.4, Same Day Surgery = 7.2; Maximum: Medical Surgical = 12.9, Medical = 6.2, Surgical = 7.0, Labor & Delivery = 5.8, Post Partum= 14.5, Same Day Surgery = 17.0. [b] Minimum: Medical Surgical = 0.0, Medical = 5.0, Surgical = 2.8, Labor & Delivery = 8.9, Post Partum= 0.0, Same Day Surgery = 0.0; Maximum: Medical Surgical = 32.2, Medical = 52.6, Surgical = 33.3, Labor & Delivery = 33.3, Post Partum= 25.0, Same Day Surgery = 0.0

Analyses of Research Questions and Hypotheses

Table 28 displays the Pearson Correlations for the variables of the study. Independent variables included the three factors of work group culture (constructive, aggressive-defensive, and passive-defensive), the two scales of workplace stress (decision latitude and psychological demand), and hostility. Dependent variables included absenteeism and turnover.

Table 28

Pearson Correlation of Work Group Culture (3 factors), Workplace Stress (2 scales), Hostility, Absenteeism and Turnover

	Hostile	Constrt	Aggress Defense	Passive Defense	Turn-over	Absent	Dec Latitude	Psych Demand
Hostile	1.00							
	.000							
Constrt	-.104	1.00						
	.401	.000						
Aggress	.322	-.173	1.00					
Defense	.008	.162	.000					
Passive	.178	-.157	.781	1.00				
Defense	.149	.205	.000	.000				
Turn-	.087	-.159	.115	.196	1.00			
over	.484	.198	.356	.112	.000			
Absent	-.005	-.178	-.104	-.203	.044	1.00		
	.970	.149	.400	.100	.723	.000		
Dec	-.102	.396	-.274	.036	.042	-.268	1.00	
Latitude	.411	.000	.025	.775	.734	.028	.000	
Psych	.151	.016	.420	.564	.220	-.095	.264	1.00
Demand	.223	.900	.000	.000	.073	.443	.030	.000

Table 28 shows the correlation matrix, with the correlation the top number and the two-tailed p value beneath each correlation. Several correlations were significant at $p < .05$. Aggressive-defensive culture was positively correlated with hostility

(r = -.322, p = .008). Passive-defensive culture was positively correlated with the aggressive-defensive culture (r =.781, p <.001). Decision latitude was positively correlated with constructive culture (r = .396. p < .001), negatively correlated with aggressive-defensive culture (r = -.274, p = .025), and negatively correlated with absenteeism (r = -.268, p = .028). Psychological demand was positively correlated with aggressive-defensive culture (r = .420, p < .001), positively correlated with passive-defensive culture (r = .564, p < .001), and positively correlated with decision latitude (r = .264, p = .030).

Tables 29 and 30 display the results of the multiple regression of all independent variables regressed on each dependent variable.

Table 29

Multiple Regression Summary of all Independent Variables Regressed on Turnover

Step	Source	R^2	sr^2	df	F	p
1	All	.0863		6,60	.945	NS
	Hostile		.0028			
	DecLat		.0006			
	PsyDem		.0171			
	Construc		.0214			
	Aggress		.0033			
	Passive		.0063			

Table 30

Multiple Regression Summary of all Independent Variables Regressed on Absenteeism

Step	Source	R^2	sr^2	df	F	p
1	All	.1359		6,60	1.572	NS
	Hostile		.0000			
	DecLat		.0420			
	PsyDem		.0122			
	Construc		.0119			
	Aggress		.0017			
	Passive		.0145			

Because this study is for the purpose of theory building and there is little in the literature that describes the relationships of these variables, all independent variables were entered into each regression together at Step one. The tables show the step, the source or variables, the cumulative R^2, the squared semi-partials (sr^2), the degrees of freedom (df), and the F and p values. All the variables accounted for 8.6% of the variance in turnover and for 13.6% of the variance in absenteeism. Neither was significant at the .05 level. The research questions and hypotheses for this study can be answered as follows:

Research Questions and Hypotheses Answered

1. Is there a relationship between nursing unit culture and (a) the percentage of annual turnover for a nursing unit, and (b) the number of absent shifts in a 3 month period?

There was no statistically significant relationship between nursing unit culture and (a) the percentage of annual turnover for a nursing unit, or (b) the number of absent shifts in a three month period.

There will be a significantly more (a) annual turnover, and (b) absent shifts in nursing units with security needs cultures versus nursing units with satisfaction needs cultures as measured by the OCI.

This hypothesis is rejected.

2. Is there a relationship between workplace stress and (a) the percentage of annual turnover for a nursing unit, and (b) the number of absent shifts in a 3 month period?

There was no statistically significant relationship between workplace stress and the percentage of annual turnover for a nursing unit but there was a negative statistically significant relationship between workplace stress (decision latitude in the job strain model) and the number of absent shifts in a three month period.

There will be significantly more (a) annual turnover, and (b) absent shifts in nursing units with higher workplace stress than in units with lower workplace stress.

This overall hypothesis is rejected. However, as decision latitude (in the job strain model) increased, absenteeism decreased.

3. Is there a relationship between staff hostility and (a) the percentage of annual turnover for a nursing unit and (b) the number of absent shifts in a 3 month period?

There was no statistically significant relationship between staff hostility and (a) the percentage of annual turnover for a nursing unit or (b) the number of absent shifts in a 3 month period.

There will be significantly more (a) annual turnover, and (b) absent shifts in nursing units with higher staff hostility than in units with lower staff hostility.

This hypothesis is rejected.

Post Hoc Analyses

Several post hoc analyses were done, and three results were found to be of particular interest. Using ANOVA and Scheffe pairwise comparison, the 12 subscales of the OCI were evaluated to see if there were statistically significant differences in the subscale scores in unit types for individual hospitals. There was one statistically significant difference. In

one hospital, there was a significantly lower mean score in the avoidance subscale for the ICU/CCU category versus the step down category (p =.038). In all other hospitals, there were no significant differences among mean scores of OCI subscales among the categories of units.

Using ANOVA and Scheffe pairwise comparison, the mean scores of each unit category of the two subscales of the Job Content Questionnaire also were evaluated. There were no statistically significant differences in the mean scores of the subscales of this instrument by unit type.

There was a statistically significant correlation between the position of NA/Orderly/Technician (r = .2747, p = .027) and the psychological demand subscale of the Job Content Questionnaire. No statistically significant correlations were found between any other position and scales or subscales of the study instruments.

CHAPTER V

DISCUSSION

Five topics are discussed in this chapter. First, the meanings of the findings of the study are presented. Next, the significance, limitations, and implications are discussed, and the directions for future research explored.

Meaning of Findings

The meaning of the findings of the study are presented in two sections, descriptions and relationships. The description section includes the description of units and staff members of units included and excluded from the study; demographics of staff members, units, and nurse managers of units in the study; description of the work group culture, workplace stress, and hostility of units in the study; and description of absenteeism and turnover in the nursing units. The relationship section includes discussion of the relationships of the independent variables, hostility, workplace stress, and work group culture, with the dependent variables, absenteeism and turnover, and the relationships among the independent variables, hostility, workplace stress, and work group culture.

Description

Demographics of Staff Members, Units, and Nurse Managers

Staff members. Characteristics of staff members in the study support what has been found in the literature about nurses in the United States (Roberts et al., 1989). Most of the study participants were RNs, white females, and the mean age was 36.3 years. The national average for age is the early forties (Roberts et al., 1989). The largest percentage of nonwhite nurses were in the step down units, the medical-surgical units, and the medical units, which were sometimes seen as the least desirable work areas because of the heavy workload. The largest number of males were in the emergency departments and the other units category (rehabilitation, dialysis, life flight, and IV therapy) which were frequently seen as the most autonomous and most crisis oriented units (excluding the rehabilitation unit). The largest percentages of non-RN participants were in the burn and step down

units. The oldest group and the group with the most nursing experience were in the same day surgery units. This supports the literature in that nationally nurses tend to move out of the acute care settings as they age (Roberts et al., 1989). The staff members in these university teaching hospitals had 9 to 13 years of experience in nursing and were working full time. Nationally, most nurses who work in hospitals have less experience in nursing, but most of them also work full time (Curran, 1991; Roberts, et al., 1989). There were no appreciable differences in the years in the hospital, years in the unit, or years in the specialty of staff members who worked in the various categories of units in the study.

The associate degree was the most frequent basic educational preparation for staff members in the emergency departments, the burn, the other category, the medical, and the same day surgery units. The baccalaureate degree was the most frequent basic educational preparation for staff members in the ICU/CCU, the step down, the post anesthesia, the medical-surgical, the surgical, the labor and delivery, and the post partum units. The highest degree held was the baccalaureate degree in all areas except the emergency departments and the step down units. In those areas, the highest degree was the associate degree. Most staff members in this study worked 10 or 12-hour days and worked almost 40 hours per week.

Nursing units. Characteristics of the nursing units varied widely between and within categories of units. Total filled FTEs ranged from an average of 19.0 in the burn units to 41.7 in the surgical units. Percentage of RNs to total staff participants ranged from 65.2% in the medical units to 85.3% in the ICU/CCUs. Units in the other category also had a high percentage of RN participants. Average daily census ranged from 5.6 in the burn units to 26.0 in the same day surgery units. The number of nurse managers the units had in the last 5 years ranged from a low of 1.0 in the burn, the labor and delivery, and the same day surgery units to a high of 4.0 in the emergency departments. Most units had at least two nurse mangers in the last 5 years.

The number of grievances for the last 3 months of 1993 in all the units was very small. The labor relations departments and bargaining units agreed that most complaints were settled before they reached the grievance stage. The numbers of grievances ranged from 0.0 in most units to 0.1 in the medical-surgical units, with the ICU/CCUs having an average of 0.06.

The number of incident reports completed for the last 3 months of 1993 varied, depending on a number of factors, such as the policies of each institution. The range was from 2.0 to 47.2, with one unit reporting 293 (an emergency department) incidents during this time period.

The mean number of patient falls during October, November, and December of 1993 ranged from a low of 0.0 in the post anesthesia care (PACU) and the same day surgery (SDS) units to a high of 4.6 in the surgical and 4.4 in the medical-surgical units. This seemed reasonable, given that the nurses were in constant attendance in the PACU and the SDS units.

The mean number of staff injuries for the last 3 months in 1993 ranged from a low of 0.0 in the same day surgery and the step down units to a high of 3.0 in the labor and delivery units. Staff injuries were defined as those injuries that were work related and for which the individual sought and received medical intervention other than first aid. Staff injuries were categorized as back injuries, needlesticks, eye/face splash, cuts, wrist/shoulder pain/strain, contusion/fall, or respiratory distress. The highest percentage of back pain was in the medical-surgical areas, with the ICU/CCUs having second highest percentage. The highest percentage of needlesticks also was in the medical surgical areas, with labor and delivery second.

Data that were unable to be collected on the questionnaire included average patient acuity, average HPPD, whether the unit had been without a manager for more than 3 months in the last 3 years, and how many staff members in the unit had worked there greater than 10 years, 6-10 years, 2-5 years, or less than 2 years. For the most part, the

units in the study did not track patient acuity or use patient acuity information. Nor did most units track or use hour per patient day data. Neither personnel departments nor nursing departments tracked whether a unit had been without a nurse manager for greater than 3 months in the last 5 years. Likewise, the facilities did not track how many staff members had worked in the units for various numbers of years.

In comparing percentages of RNs, NA/Orderlies/Technicians, and Clerks in the total staff (population) versus the sample, there was no significant difference in clerks, but there were significantly more RNs ($p = .014$) and significantly fewer NA/Orderlies/Technicians ($p < .001$) in the sample. In comparing different shifts, there were no significant differences in days, evenings, nights, or 12-hour P.M. There were significantly fewer 12-hour A.M. ($p. = .049$) participants in the sample, however in most categories in this study, there were representative groups of participants that were similar to the total staff in the areas of position and shift. The category of shift is particularly important in the variable of work group culture, since groups on different shifts in the organization can and do develop their own cultures.

Nurse managers. Characteristics of nurse managers in the study showed little variation, despite the type of units. Most nurse managers were white females in their late thirties to early forties. The only areas where non-white managers existed were the medical-surgical areas, with 13.3%, and the other unit category, with 20% non-white managers. Areas that had male managers were the surgical units, with 20%; the same day surgery units, with 50% (one of two units); the step down units, with 25%; and the other units category, with 20% male managers. The oldest managers were in the surgical units, with a mean age of 49.3 years; the youngest managers were in the post partum areas, with a mean age of 35.3 years. Even though diversity in nursing has been a goal for a number of years, actual diversity among the ranks of managers in these institutions was found to be limited.

The managers had been in nursing management an average of 8 to 9 years, with the shortest time being for the emergency department managers with 5 years and the longest being the medical-surgical mangers with 13.2 years. Years as employees in the hospital varied from a mean of 2 years for the emergency department managers to 19.3 years in the medical-surgical units. Years as employees in the unit ranged from a mean of 2 years in the emergency departments to a mean of 10.8 years in the ICU/CCU. The average time spent by managers in their present position ranged from the longest mean of 9.0 years in the medical units to the shortest of 2 years in the emergency departments.

The basic nursing preparation for the nurse managers varied from baccalaureate to diploma to associate degree, but most had a baccalaureate or master degree as the highest degree held. Most managers had their highest degree in nursing, but all the labor and delivery area managers, 50% of the ICU/CCU managers, 25% of the step down unit managers, 33% of the burn unit managers, 20% of the other unit category managers, 18% of the medical-surgical managers, and 40% of the surgical unit managers had non-nursing degrees. Although most nurse mangers were prepared at the baccalaureate or master level, there was a trend toward getting degrees in non nursing areas.

Slightly less than one-half (43.3%) of the nurse managers had more than one unit for which they were responsible. Exceptions included the managers for the emergency departments and labor and delivery areas, who had only one unit to manage. Operating room managers, who were not included in the study, typically had only one area to manage. Managers with the most units included the step down and the same day surgery units, who had a mean of 2.5 units to manage. The trend in most areas seemed to be an increase in the number of areas for which each manager was responsible. The percentage of managers with more than one unit may have increased since these data were collected. It would be of interest to look at other hospital department managers, such as pharmacy and respiratory therapy, to see if there was an increase in the number of areas for which those department managers were responsible.

Work Group Culture

All the nursing units had a constructive culture as the primary culture of the unit as measured by the Organizational Culture Inventory (Cooke & Rosseau, 1988). The instrument also measured four subscales, which had slight variations among the units. The other unit category which had the highest mean score on the constructive factor, also scored the highest on all four of the subscale means; achievement, self-actualization, humanistic-encouraging, and affiliative. The emergency departments which scored the lowest mean on the constructive factor, also scored the lowest on all four of the subscales means. None of the differences among categories of units on subscales were statistically significant, however.

In the aggressive-dependent or task-security culture, the step down units scored the highest mean, with the medical units scoring the next highest mean. The step down units also scored the highest means for two of the four subscales that comprise this factor, power and competition. The highest mean for the opposition subscale was scored by the burn units and the highest mean for the perfectionism subscale was scored by the medical units. The category of units scoring the lowest mean on this culture factor was the emergency departments (EDs). The EDs also scored lowest on the subscales power and perfectionism. The other units category scored the lowest mean on the oppositional subscale and the same day surgery units scored the lowest mean on the competition subscale.

The units with the highest mean for the passive-dependent or people-security culture were the step down units. The step down units also scored the highest mean for two of the subscales in this factor, approval and avoidance. The medical units scored the highest means for the other two subscales of this factor, conventionality and dependence. The category of units scoring the lowest on this culture factor was EDs. The EDs also scored the lowest on the conventional style subscale. The other units category scored the lowest

on the approval and avoidance subscale; the labor and delivery units scored lowest on the dependent subscale.

The category of units scoring closest to the culture identified as ideal or excellent by Cooke and Rousseau (1988) was the other units (rehabilitation, IV therapy, two life flight, and dialysis). The labor and delivery category scores were the next most consistent with the ideal culture. None of the categories of units fit the pattern described by the authors as the security oriented or aggressive or passive norms.

The unit mean scores tended to fall lower than the ideal for the constructive factor and higher than the ideal for the aggressive-defensive factor and the passive-defensive factor. This was one piece of evidence that supported the notion that the constructive culture was weak. The EDs had the lowest mean scores for all three factors. This might indicate a weak dominant culture in those departments. Some of the literature suggested that hospital cultures are typically weak rather than strong (Bice, 1984; Deal & Kennedy, 1983; Nystrom, 1993). The absence of a strong culture also may be an attribute of change or instability (Cooke & Rousseau, 1988), and change was certainly the rule in the institutions included in the study. However, other writers have suggested that the strength of a culture is defined by its homogeneity, its stability, and the shared values and experiences (Schall, 1983; Schein, 1984). Based on the staff demographics, manager demographics, and some unit demographics, there seems to a high degree of homogeneity and stability in these institutions and in the nursing units. This lends support for the notion that the cultures of the nursing units would be strong.

In the post hoc analysis of the OCI subscales by unit types within each hospital, one of the unit types within one hospital displayed a significant difference in the avoidance subscale means, which is part of the passive-defensive factor. The ICU/CCU group was significantly lower than the step down group ($p = .038$). Although this subscale difference was not large enough to change the overall constructive culture of the step down group, it does provide some support for the OCI authors' prediction of differences in units within

organizations and lends itself to the idea of subcultures within the dominant culture of an organization (Cooke & Rousseau, 1988). There were subcultures and counter cultures within the dominant culture of the hospitals. Finding only one significant difference with this instrument, therefore, suggests that it may not satisfactorily discriminate subcultures in nursing units within hospitals.

Although this study did not attempt to measure the dominant cultures for individual hospitals, it seems reasonable, based on the study results, that the constructive culture is the dominant culture for the hospitals. Comparisons of differences across categories of employees in hospitals, such as nurse managers, department heads, or physicians, or what various groups thought were an ideal or excellent culture cannot be made, since this study did not address those issues.

Workplace Stress

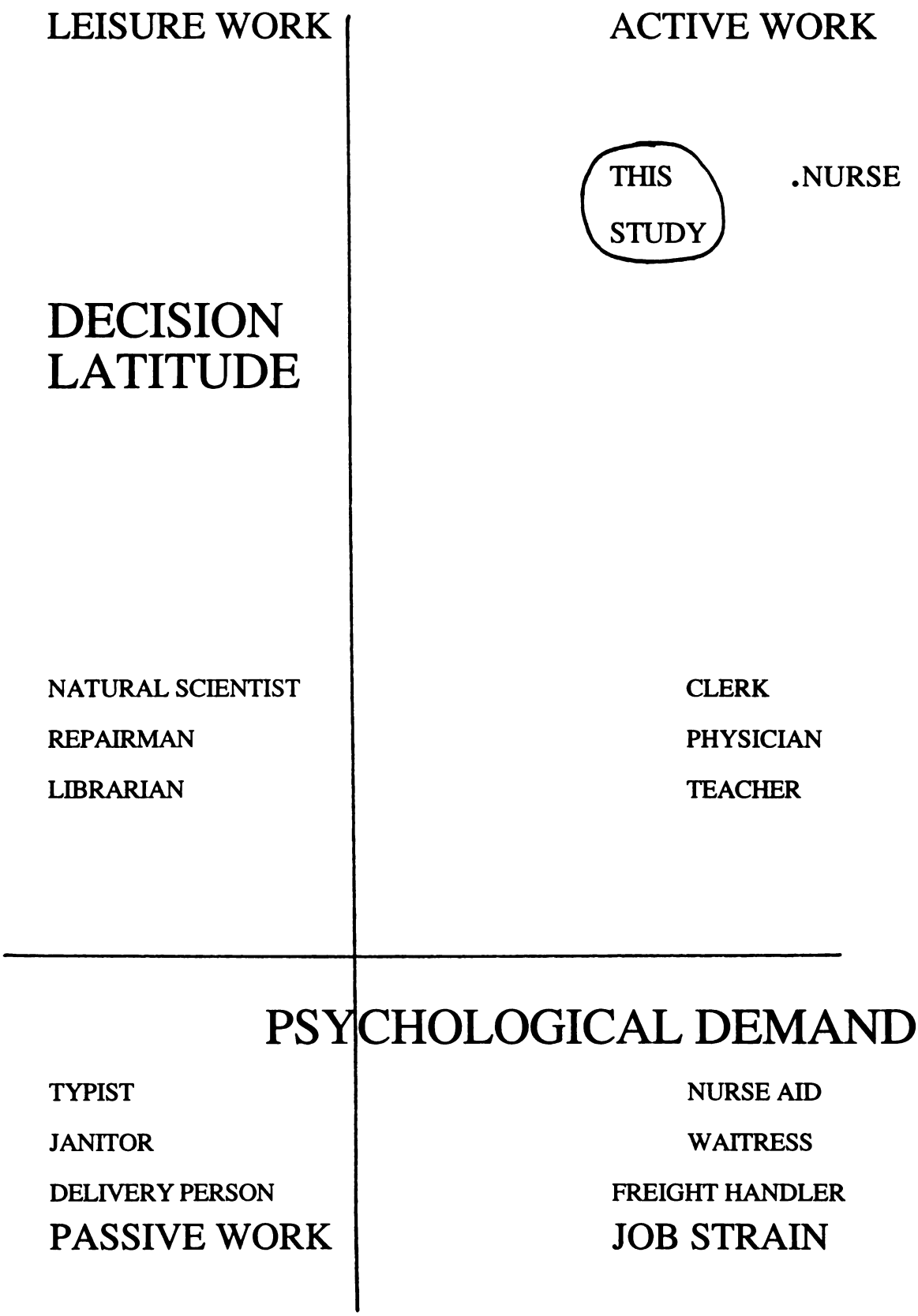
All the nursing units fell into the categories of high decision latitude and high psychological demands. These data support previous studies that have indicated that nurses are generally in the high decision latitude/high psychological demand category (Karasek & Theorell, 1990). This category of occupations was not classified as job strain, rather Karasek and Theorell (1990) called it an active occupation. Other occupations in this group that are primarily female included programmer, clerk-supervisor, and high school teacher (Karasek & Theorell, 1990). Occupations with job strain were those with low decision latitude and high psychological demand, such as nurse aid, health technician, and garment stitcher. Although the sample in this study was small (n = 64, 10.3% of sample), there was a negative, though not statistically significant, correlation between decision latitude and the position category Nursing Assistant/Orderly/Technician. The correlation between that position category and psychological demand was significant ($r = 0.2747$, $p = .027$). Examples of those jobs with high decision latitude and low psychological demand, termed leisure work by Karasek and Theorell (1990), are the natural scientist, repairman, and librarian. Examples of jobs with low decision latitude and low psychological demand,

termed passive work, included bus driver, typists, and maids (Karasek & Theorell, 1990). Figure 2 demonstrates the four quadrants of the job strain model and the location of the mean scores for participants of the current study (Karasek & Theorell, 1990).

There were no statistically significant differences in the subscales of the Job Content Questionnaire (skill discretion, decision authority, decision latitude, or psychological demand) among any category of units. The unit category with the highest mean score for decision latitude was the other units category (rehabilitation, dialysis, life flight, and IV therapy); the unit category with the lowest mean was the same day surgery unit. Decision latitude is a scale that is made up of two subscales, skill discretion and decision authority. The group of units with the highest mean score for skill discretion was the other unit category, and the group with the lowest mean score was the medical units. The group of units with the highest mean score for decision authority was the other units category, and the lowest score was the same day surgery units. Psychological demand was highest in the step down unit and next highest in the surgical unit . Psychological demand was lowest in the same day surgery unit.

In evaluating the groups on the X/Y axes used by Karasek and Theorell (1990), the same day surgery units category fell closest to the low decision latitude/low psychological demand sector (passive work), and the medical and step down units were closest to the low decision latitude/high psychological demand sector (job strain), but both remained in the high decision latitude/high psychological demand sector (active work). The other units category and the labor and delivery category were the strongest in the high decision latitude/high psychological demand sector (active work). All the remaining categories tended to group together in the mid portion of the high decision latitude/high psychological demand sector (active work).

Figure 2: Job Strain Model



Hostility

In scoring the hostility instrument, 1 was true and 0 was false so the scores could range from 0 to 50, with 0 being the least hostile and 50 being the most hostile. In this study, there was little variation in the mean scores of hostility for the different categories of units. The lowest mean Ho score for a unit category was labor and delivery at 12.2; with the EDs the next lowest at 13.2. The highest mean Ho score was in the step down units, with a score of 17.5.

One interesting thing about this result is that all the units scored fairly low on the hostility scale as compared with other published results using this same instrument with various groups. Many studies using the Cook and Medley Hostility Scale divided groups into high and low hostile and then compared them in some way. Hardy and Smith (1988) divided their groups of undergraduate men into low hostile at 17 or below and high hostile at 29 or above. Jamner et al. (1991) defined their high hostile group of male paramedics at 22 and above. Pope, Smith, and Rhodewalt (1990) defined their high hostile group of undergraduate men at 27 and above and low hostile group at 18 or below. Suarez and Williams (1990) defined their high hostile group of white males at 23 or above and the low hostile group at 14 or below. Houston and Vavak (1991) divided their groups of undergraduate men and women in high hostile at 32 or above and low hostile at 13 or below. Smith, Sanders, and Alexander (1990) defined their groups of undergraduate husbands and wives into high hostile husbands at 23.8 and high hostile wives at 23.0. So, in comparing the mean hostility scores of the participants in this study with other reports, all the scores in this study are relatively low. This data would not lend support to the feminist notion of nurses, who are primarily female, as demonstrating hostility as a characteristic of oppressed group behavior (Chin & Wheeler, 1985, Roberts, 1983).

Also of interest is that most of the studies mentioned measured hostility and sought relationships with some area of cardiovascular disease or some measure of physiological response, such as blood pressure or pulse rate. The Ho scale has been used to measure

hostility which has been linked with cardiovascular disease (Hardy & Smith, 1988; Houston & Vavak, 1991; Jamner et al., 1991; Pope, Smith, & Rhodewalt, 1990; Smith et al., 1990; Suarez & Williams, 1990).

Absenteeism and Turnover

In 1990, one study reported a mean turnover rate of 26.8% among nurses in four acute care hospitals (Jones, 1990a, 1990b). In a 1994 study, Gray and Phillips (1994) reported a turnover rate of 13.5% in their English setting. A 1991 study of OR personnel reported a 14.4% turnover rate for RNs and an absenteeism rate of 2.9%, commenting that the majority of industrial absenteeism rates was reported to vary between 2% and 3.5% (Ragsdale, Burns, & Houston, 1991). Curran (1991) reported a 20% turnover rate in the United States that she said increased in times of shortage.

The data from the current study indicated a range in mean absenteeism from highs of 12.1% in the same day surgery units and 9.1% in post partum units to lows of 3.6% in the other units category and 3.8% in the post anesthesia units. Most other groups of units clustered around 5% or 6%.

Managers and administrators generally expressed a belief that turnover rates were low because of the poor job market at the time of this study. However, mean turnover rates varied from lows of 0.0% in the same day surgery units and 6.3% in the other units category to highs of 33.3% in the medical units and 26.2% in the burn units. The other groups of units varied widely between these high and low numbers.

In summary, the step down units demonstrated high numbers of non-white and non-RN participants who had the associate degree as their highest level of preparation. Although not statistically significant, the step down units had high aggressive-defensive scores, high passive-defensive scores, high psychological demands, and the highest hostility scores. Although not statistically significant, medical units showed poor participation, high non-white participants, high aggressive-defensive and passive-defensive scores, and high turnover scores. And, although not statistically significant , same day

surgery units had poor participation, the oldest staff, the staff with the most years in nursing, and high absenteeism.

Relationships

Because of the circular and reciprocal nature of the dependent and independent variables in this study, a review and summary of the correlations between the independent variables of workgroup culture, workplace stress and hostility, and the dependent variables of absenteeism and turnover as they relate to the study hypotheses, are listed below.

Between Independent and Dependent Variables

There was one statistically significant correlation.

Null Hypothesis I: There is no relationship between staff hostility and (a) the percentage of annual turnover for a nursing unit or (b) the number of absent shifts in a 3 month period.

The null hypothesis is accepted. There were no statistically significant correlations between staff hostility and the dependent variables.

Null Hypothesis II. There is no relationship between workplace stress and (a) the percentage of annual turnover for a nursing unit, or (b) the number of absent shifts in a 3 month period.

The null hypothesis was rejected. There is a statistically significant negative correlation between decision latitude in the job strain model and absenteeism.

Null Hypothesis III. There is no relationship between nursing unit culture and (a) the percentage of annual turnover for a nursing unit, or (a) the number of absent shifts in a 3 month period.

The null hypothesis is accepted. There were no statistically significant correlations between nursing unit culture and the dependent variables.

To review and summarize the regression analyses, all the variables together accounted for 8.6% of the variance in turnover and all the variables together accounted for 13.6% of the variance in absenteeism. Neither was significant at the .05 level. Therefore, there was

not significantly more absenteeism or turnover in units with higher staff hostility, or in units with higher workplace stress, or in units with security needs (aggressive-defensive or passive-defensive) cultures.

Among Independent Variables

There were five statistically significant correlations found among the mean scores of all the instruments, and two statistically significant correlations found between subscale scores of each of two instruments.

There was a positive correlation between hostility and the aggressive-defensive culture and a negative correlation between the decision latitude subscale and the aggressive-defensive culture. These results were not surprising since the aggressive-defensive culture is characterized by confrontation, negativism, an avoidance of all mistakes, a "win-lose" framework, and relationships based on control.

There was a positive correlation between the decision latitude subscale and the constructive culture. There were positive correlations between the psychological demand subscale and both the aggressive-defensive and the passive-defensive cultures. As decision latitude increases, culture scores indicate an increase in the group's attempt to meet satisfaction needs, as evidenced by the higher scores on the achievement, self-actualization, humanistic-helpful, and affiliative subscales. As psychological demand increases, there is an increase in the scores that indicate the group is seeking to meet security needs shown in the higher scores of the approval, conventional, dependent, avoidance, oppositional, power, competitive, and perfectionistic subscales.

The aggressive-defensive culture scale and the passive-defensive culture scale of the OCI were positively correlated. The decision latitude subscale and the psychological demand subscale of the job strain model were positively correlated. This demonstrates the collinearity of the subscales of these two instruments.

Significance

The significant contributions of this study are in three specific areas: increasing understanding of the phenomena of workgroup culture, workplace stress, and hostility in a large group of employed females; support for the validity and reliability of the instruments used to measure culture, stress, and hostility; and adding to the knowledge of factors that are not correlated with the outcomes of absenteeism and turnover in nurses in hospitals. Each is discussed separately.

Understanding the Phenomena

Work Group Culture

In the area of workgroup culture, the study has demonstrated that all the nursing units in the study have what the OCI identifies as a constructive culture. In evaluating nursing units in comparison with other work groups, the notion that the nursing units tend to have a constructive culture is a very positive factor. Nurse managers and nurse administrators can take this information into account when they implement change in their work areas. It also is important to note that the instrument measured a statistically significant difference in only the avoidance subscale, between two groups of units (ICU/CCU and step down) in one hospital. This may mean that there were no other significant differences or that the instrument does not detect differences that do exist. It might be prudent to seek a more sensitive measurement instrument to consider differences among nursing units or among different types of nursing units.

Workplace Stress

In the area of workplace stress, this study provided support for an inverse relationship between decision latitude (the positive factor in the job strain model) and absenteeism in the nursing units ($p = .028$). This finding tends to support previous studies on lack of control, decision making, and autonomy as they relate to job stress, absenteeism, and turnover among nurses who work in hospitals (Barhyte, Counte, & Christman, 1987; Taunton, Krampitz, & Woods, 1989c; Williamson et al., 1988). These studies tended to measure

the staff nurses' perception of their own stress rather that a perception of the strain of the job, itself. There also was a significant positive correlation between decision latitude and a constructive culture ($p < .001$), and a negative correlation between decision latitude and the aggressive-defensive culture ($p = .025$).

This study did not show significant correlations between psychological demand (the negative factor in the job strain model) and absenteeism or turnover. There were, however, positive correlations between psychological demand and both aggressive-defensive ($p = .001$) and passive-defensive ($p = .001$) cultures. This supports the idea that, with increasing psychological demand on staff members, there is an increasing likelihood of security oriented cultures developing. Cooke and Rosseau (1988) found that with recent reorganizations, turnover, and low job satisfaction, staff members scored high on security oriented norms. They predicted that groups which emphasize stability and avoiding mistakes will adopt a more security oriented profile (Cooke & Rosseau, 1988).

Hostility

In the area of hostility, this study did not show correlations with the dependent variables, of absenteeism and turnover. There was a negative, though not statistically significant, correlation between hostility scores and the constructive culture, and a significant positive correlation between hostility and the aggressive-defensive culture. As people become more hostile there is a greater tendency for the culture to be aggressive-defensive. An interesting finding of this study related to hostility was that all the nursing units had a moderately low hostility scores compared to other studies done using the same measurement instrument (Houston & Vavak, 1991; Smith et al., 1990). This is a very positive result for nurse managers to keep in mind. The angry behavior they may see in staff members is not, according to this study, a stable personality trait.

Instrument Validity and Reliability

This investigation provided support for the reliability and validity of the OCI, the Job Content Questionnaire, and the Cook-Medley Hostility Scale, for a sample of hospital nurses. Each instrument is discussed separately.

Organizational Culture Inventory

Cronbach's alpha internal consistency reliability for this study sample for each of the 12 subscales of the OCI were similar (see Table 1) to those reported by Cooke and Rousseau (1988). Cronbach's alpha for the total instrument was .94 for the current study and .90 as reported by Cooke and Rousseau (1988). Support for the validity of the OCI was demonstrated by the similarity between the Varimax rotated factor analysis done for this study sample and that done by Cooke and Rousseau (1988). Further support for the validity of the OCI was demonstrated by the similarity of the findings of a constructive culture in the nursing units compared with two other studies using this instrument with hospital nurses (McDaniel & Stumpf, 1993; Thomas et al., 1990).

Job Content Questionnaire

Cronbach's alpha for internal consistency reliability for all subscales of the Job Content Questionnaire used for this study sample was similar to those reported by Karasek and Theorell (1990). Overall Cronbach's alpha for the combined scales used in this study was .69; Karasek and Theorell (1990) reported Cronbach's alpha range from .59 to .77. Support for validity of this instrument is demonstrated by the similarity in the factor analysis done with this study sample and that reported by Karasek and Theorell (1990). Further support for the validity of the instrument is demonstrated by the results of the study showing the sample to have a high decision latitude/high psychological demand occupation which is consistent with results published for the occupation "nurse" (Karasek & Theorell, 1990).

Cook Medley Hostility Scale

Cronbach's alpha for internal consistency reliability for the Ho scale for this study sample was .83, as compared to .86 reported by Cook and Medley (1954). Support for the validity of the scale is demonstrated by the similarities in the factor analysis done for this study sample and one reported for a sample of 1002 (Costa, Zonderman, McCrae, & Williams, 1986).

Correlates of Absenteeism and Turnover

The final area of significance of this study is that it increases knowledge of factors that are and are not correlated with absenteeism and turnover. These findings must be viewed in terms of the study's limitations. According to study results, there were no correlations between workgroup culture or hostility and absenteeism and turnover in hospital nurses. There was a negative correlation between decision latitude and absenteeism.

Work Group Culture

The type of workgroup culture, as measured by the OCI, does not correlate with absenteeism and turnover levels, and, different unit cultures should, therefore, not have an effect on absenteeism and turnover. There are, however, differences in the environments of different nursing units, as experienced by managers and administrators. This instrument may not have been sensitive enough to measure the differences among nursing unit cultures.

Workplace Stress

The units were not statistically different from each other in regard to decision latitude and psychological demand. There were, however, differences in the mean scores of the different categories of units. There may be mediating factors that could be measured by other subscales of the Job Characteristic Scale, such as the social support or physical workload subscales, that influence the decision latitude and psychological demand subscale scores. This study result does provide support for the notion that providing a mechanism for increasing decision latitude by the staff, even with high psychological demand, may

lead to less absenteeism. There is also support for the idea that the position of Nursing Assistant/Orderly/Technician is linked to high psychological demand and low decision latitude. Nurse managers should note this relationship because, as hospitals change the nursing skill mix, they will be managing a greater number of unlicensed staff.

Hostility

In a nursing workgroup, levels of hostility will most likely not be related to absenteeism and turnover. There were behaviors that some staff members displayed that appeared aggressive or angry, yet, this was not measured by the study instrument. This behavior may have been more of a situational or state anger. Further study should be done to determine how to characterize the behavior that was observed. This other behavior may or may not be correlated with absenteeism and/or turnover.

Limitations

Limitations of this study are reviewed using the framework of threats to design validity suggested by Cook and Campbell (1979), who subdivided them into four categories: statistical conclusion validity, internal validity, construct validity of putative cause and effect, and external validity.

Statistical Conclusion Validity

Statistical conclusion validity refers to the ability to conclude that the independent and dependent variables covary. Threats to statistical conclusion validity include a violation of assumptions of statistical tests, such as a lack of subject independence, Type I error (rejecting the null hypothesis when it is true, or falsely concluding that covariation exists when it does not) or "fishing" (with increased multiple comparisons of mean differences, there is a certain proportion of the comparisons that will be significantly different simply by chance), unreliable measures, incorrect application of the treatment, random irrelevancies in the setting, random heterogeneity of respondents, not reporting power using confidence intervals, and increasing the chance of a Type II error (not rejecting the null hypothesis

when it is false or making an incorrect no-difference conclusion) by using small sample size and setting a low alpha (Cook & Campbell, 1979).

Three threats to the statistical conclusion of this study are the possibility of Type I error, the possibility of Type II error, and reliability of measures.

Type I Error (alpha)

An overall alpha of .10 was chosen because this study was done as a descriptive correlational design with the purpose of theory building. The alpha was divided by two (dependent variables) so that each variable was held to an alpha of .05. The purpose of the larger alpha was to discover correlations that might exist in the data, since there was little previous theory by which to make a prediction. However, the higher alpha may have led to a type I error when the second null hypothesis was rejected and covariation was found between several of the independent variables.

Type II Error (beta)

The unit of analysis for this study is the nursing unit. For this study, a medium effect size of .25 was assumed, an alpha of .05 was selected, an R^2 of .225 was predicted, and a desired power of .80 was selected. A sample size (n) of 57 units was needed to have adequate statistical power (Borenstein & Cohen, 1988). However, the sample size still may have been too small to pick up differences in the variables in the various nursing units because the effect size was smaller than predicted. The first and third null hypotheses were accepted; differences may have been found with a larger sample size.

Reliability of Measures

Reliability of the instruments, as measured by Cronbach's alpha, was acceptable for the OCI, the Job Content Questionnaire, and the Ho Scale. The Ho Scale is designed to be used with individuals and individual scores. In this study, mean scores for units and groups of units were calculated, which may have distorted the individual scores.

Internal Validity

Internal validity refers to the validity with which statements can be made about whether there is a causal relationship between one variable and another in the form in which the variables were manipulated or measured. Threats to internal validity include history, attrition, selection bias, maturation, instrumentation, statistical regression (scores regress to mean), testing sensitization, rivalry, and resentful demoralization (Cook & Campbell, 1979). Two threats to internal validity may have occurred in this study: selection bias and testing sensitization.

Selection Bias

The sample selection for this study was a purposive voluntary sample. The design attempted to control for selection bias by trying to assure percentages in the sample that were similar to the entire group of staff and then evaluating staff characteristics in pilot two. As described earlier, the percentages of staff by position and by shift tended to be consistent with the total staff in all the nursing units, with the exceptions mentioned. However, in a voluntary sample, there may be differences in people who volunteer to enter the study and those people who do not volunteer. People who volunteered may be more or less hostile and may have responded differently to questions about culture and job strain. There was evidence that those nurses who had more experience in nursing tended not to participate in the study; there was a higher percentage of RNs, and fewer NA/Orderlies/Technicians represented in the sample than in the population; and there were fewer 12-hour A.M. staff in the sample than in the population.

The purpose of examining characteristics of staff members in units included and excluded from the study was to try to determine if there were significant differences in the units that were included and excluded from the study. Units were included if 25% of their members who worked 20 hours per week or more completed the questionnaires. Since the nursing unit was the unit of analysis, this requirement seemed reasonable based on previous literature on organizational culture. The percentage also seemed reasonable when

attempting to evaluate the nursing workplace stress and hostility scores. Results may have been different with a larger percentage of participation by staff members in each unit.

Percentages of staff members completing the questionnaires in the units included in the study ranged from 25% to 67.2%, and percentages of staff members completing the questionnaires in the units excluded from the study ranged from 0% to 23.0%. There were four units that completed no questionnaires, one rehabilitation unit, one operating room, and two same day surgery units. The only category of unit that had no representative in the study was the operating room. Seventy-five percent of the same day surgery units, 60% of the emergency departments, and 62.5% of the medical units were not included in the study. One reason for the lack of operating room inclusion in the study may have been the large number of people who worked in these units. This cannot be the only factor, however, the operating room that had zero participants was the same size as the average ICU/CCU. Another possible reason for the limited participation may have been the geographic isolation of the ORs, the EDs, and the same day surgery units, which made contact with the staff and managers in these units more difficult. Another reason for the limited number of participants may be that staff members in these units tend not to complete questionnaires as readily as staff members in other units.

The limited participation of the medical units cannot be explained by these factors. They were more similar to the surgical and medical-surgical units geographically, in size, and the more open nature of the unit. Staff in the medical units were accessible and were encouraged to participate in the study. Still, the study had limited or no representation of operating rooms, emergency departments, medical units, and same day surgery units.

Staff members completing questionnaires in included and excluded units were similar in age, gender, ethnicity, position, hours worked per week, basic nursing preparation, and highest degree held. Staff members who completed the questionnaires but who were in excluded units were significantly different from staff in included units in that they worked fewer hour per day, and had worked longer in nursing, longer in the hospital, longer in the

unit and longer in their specialty. Staff members who had worked in an area longer may be less inclined to complete questionnaires or participate in data collection, and this study may not represent them.

Testing Sensitization

In this study, the total packet of instruments was lengthy, and testing sensitization may have been a problem. Yet, making the packet shorter would have compromised the measurement of the variables, and the decision was made to keep the instruments. Random ordering of the measurement instruments might have helped control for this issue.

Construct Validity

Construct validity of putative cause and effect refers to the approximate validity with which generalizations can be made about higher-order constructs from research operations. Threats to construct validity of putative cause and effect include poor operationalization of constructs, mono operation and mono method bias, hypothesis guessing (Hawthorne effect), evaluation apprehension, experimenter expectancy, confounding constructs and levels of constructs (e.g., the researcher only delivers some levels of the treatment), interaction of treatments, and serendipitous results (Cook & Campbell, 1979). Threats to construct validity that are relevant to this study include poor operationalization of constructs and mono-method bias.

Poor Operationalization of Constructs

In order to try and minimize this threat to construct validity, every effort was made to define the variables and show how the investigator moved from abstract concepts to their operationalization. Substruction was one of the strategies used to attempt to make this clear. However, the concepts of culture, stress, and hostility have numerous definitions in the literature and are difficult to operationalize.

The OCI picked up only one statistically significant difference in the nursing unit cultures. This is fewer than would be expected by reading the literature and fewer than predicted informally by nurse managers and nurse administrators. It may be that there are

elements of workgroup culture in nursing units that the OCI does not discriminate. The other problem with the OCI is that there is no published recommended percentage of staff members needed to complete the instrument in order for it to be considered a good representation of the workgroup culture. The investigator selected 25% because that was the percentage used by Thomas et al. (1990). However, differences in culture may have been noted with a larger percentage of staff member participants from each unit.

The Job Content Questionnaire scales did not pick up significant differences in job strain in the different types of nursing units. All the unit scores for both psychological demand and decision latitude clustered in the same general area. The literature predicted that there were differences in job stress in different types of nursing units. Using other subscales from the Job Characteristics Scale, such as the social support or physical workload subscales, might have given an indication of mediating factors in similarities or differences among units.

Mono-method Bias

All data for this study were collected using questionnaires and paper and pencil. Although it would have been desirable to use other methods, the large number of participants needed for the study made the paper and pencil questionnaire method the most reasonable way to collect data.

External Validity

External validity refers to the approximate validity with which conclusions are drawn about the generalizability across populations. Threats to external validity include a poor sampling plan, interaction of setting and treatment, interaction of selection and treatment, and interaction of history and treatment (Cook & Campbell, 1979). One possible threat to external validity in this study is generalizability across populations.

Generalizability Across Populations

The sample in this study was a purposive voluntary sample. The sample is large and the case can be made that the size of the sample of individuals and units makes it a good

representation of the population of nurses who work in tertiary care university teaching hospitals on the West coast. Although, every attempt was made to ensure that the sample mirrored the population, the sample was not random and the results of this study cannot be generalized within populations not can it be generalized across population. That is, the results of this study can not be applied to populations of nurses working in other types of hospitals or healthcare settings.

Implications for Theory, Research, and Nursing Practice

Theory

This study has provided support for some aspects of organizational culture theory in that it produced results similar to other studies about the constructive culture in nursing units. This study did not show explicit evidence of counter cultures, which theory predicted should be evident. However, there were several categories in which the standard deviations are quite large, indicating wide variability among units within the category. For example, in the constructive factor, the three burn units have a mean of 145.6 but a standard deviation of 23.6. The other units category has a mean of 92.0 and a standard deviation of 13.5 in the aggressive-defensive factor and a mean of 85.5 and a standard deviation of 12.9 in the passive-defensive factor. Further study could be done in evaluating the reason for these differences within the category and also in comparing units within hospitals.

There was some indication that nursing unit cultures were weaker than the ideal proposed by the literature, especially the EDs, but most were not as weak as hospital cultures are generally described. Perhaps because of the homogeneity and stability of the sample, differences in culture were not demonstrated. The cultures of organizational hierarchies such as managers and administrators were not measured in this study.

The lower-than-average hostility scores and the high percentage of women in the study provided some support against aspects of the feminist paradigm related to the structure of hospitals and the environment in which most nurses work. The low hostility scores were

not consistent with ideas developed in the theory of oppressed group behavior (Ashley, 1976; Ashley, 1980; Hedin, 1986; Roberts, 1983). Other oppressed group behaviors, such as horizontal violence, were not investigated in this study.

The findings in this study were consistent with other work done using the Karasek job strain model, so the results provided further support for that model. Either there are no differences, this model is not sensitive to differences among nursing units, or the homogeneity of the sample and the jobs made finding differences difficult. The study also provided evidence to support the idea that job stress is related to absenteeism in hospital nurses. The findings did not support the idea that job stress had a relationship with turnover, nor did it find evidence that hostility or culture were related to absenteeism or turnover.

Research

The major implication of this study for organizational culture and job stress research was methodological. Measurement instruments need to be refined or developed to detect more subtle differences among nursing units. Larger percentages of staff members within individual units need to be examined in order to provide more information about culture and job stress. A major implication of this study relating to hostility was the need for continued study of anger and angry behavior, both state and trait anger, and hostility and women. Further work should be done in assessing how these emotions and behaviors affect or do not affect health and work performance in both women workers and women managers. An implication of the study related to absenteeism and turnover was that additional studies are needed to further explicate the factors affecting them. It would also be of interest to investigate whether or not there has been an increase in the number of units for which hospital department managers other than nurse managers are responsible.

Nursing Practice

The implication for nursing practice was in knowledge in nursing administration.. Nurse managers and nurse administrators can use information from this study to help

evaluate the workgroup cultures of nursing units in their areas of responsibility. This study did not show wide variation among the nursing units in the unit culture variable. This may mean there is no variation among the units or that the measurement instrument was not sensitive to unit culture differences. There is the possibility that differences in unit cultures would be found within hospitals when comparing units, in different types of hospitals, such as community hospitals, for-profit hospitals, or health maintenance hospitals, or in other healthcare settings, such as home health agencies or ambulatory care settings.

Nurse managers and nurse administrators can use the information that the work of staff nurses is high in decision latitude and high in psychological demand and that the high decision latitude is inversely related to absenteeism. The managers may be able to capitalize on that information to find ways to increase decision latitude for the staff. Even though the managers may not be able to reduce psychological demand, they may be able to find ways to offer staff support in the situations that create a high psychological demand.

Future Research

Directions for future research are in four specific areas: further investigation of anger and hostility in groups of women and any effect that anger or hostility level has on their health and work performance, the development or refinement of measurement instruments to capture the differences in job strain and culture among homogeneous nursing units, and the exploration of different outcome variables as they relate to job stress and workgroup culture, and the exploration of different concepts as they relate to the outcome variables of absenteeism and turnover.

Women and Anger

More studies of women and anger and hostility are needed to provide evidence in support for or against the results of this study. Comparisons of groups of nurses working in other settings such as community health agencies, community hospitals, or health maintenance organizations also would be of interest. Longitudinally assessing nurses as entering students, new graduates, and at various phases in their careers would be valuable.

Comparisons of groups of working women from other occupations and comparing traditionally male and female occupational groups would also be of interest.

Instruments

The development or refinement of existing instruments that measure job strain and culture would be valuable for managers of other occupational groups. Nursing may be unique in the percentage and homogeneity of women who work in this profession. If an instrument is sensitive to different nursing work groups, it would have a greater probability of being able to detect subtle differences in groups of women who work in other occupations. Further defining the characteristics of the "troubled" or conflicted work unit would be helpful to managers practicing in hospitals.

Work Group Culture and Job Stress

Other dependent variables that could be evaluated for relationships to the independent variables of this study include additional organizational outcomes such as cost, patient outcomes such as functional status or health status, and other employee outcomes such as employee injuries and job satisfaction. This group of nurses also could be compared with nurses in military hospitals, community hospitals, or other settings employing groups of nurses and with other occupations employing large groups of women, such as flight attendants, school teachers, and social workers. Additional job content subscales might provide more information about the lack of difference among the unit categories in the job strain model. Measuring individual stress perception in addition to job strain might provide further comparison.

Studies could be done comparing relatively stable hospital environments (if they can be found) with those hospitals undergoing massive change or redesign. Today, there are few, if any, hospitals in this geographic area with "relatively stable" environments. It might be possible to compare other geographic areas of the US where redesign has not yet become as pervasive Studies might also be done comparing the effect of various practice models in

nursing, such as primary care, patient focused care, team care, or case management on various organizational, patient or provider outcomes.

Turnover and Absenteeism

Before beginning data collection in several data collection sites in this study, nurse managers and administrators predicted that there would be little turnover because of the turmoil and diminished number of jobs in health care. In some units turnover was very small but variation in turnover rates was substantial. In some units there may have been "hidden" or "suppressed" turnover because of fewer jobs available in health care, specifically hospitals. Both absenteeism and turnover continue to be significant issues for nurse managers and nurse administrators and they should be investigated to determine if they are related to patient outcomes.

With health care reform threatened, but not enacted, by the Federal government, different groups are trying to change away from what they have, but to something of which they are not sure. The only constant is change and, for some of us, "Change is death" (Allen, 1992). Culture has been called the human side of an organization, but in some health care organizations, the human side of the organization is being forgotten. In the organizational imperative to survive, a factor that should be the first element of business may have been lost--the health of people in the organization.

Change is the order of the day and nurse managers and nurse administrators must have tools to help them survive in such an environment. Research into the culture and stress of those environments and into the characteristics of staff members will provide them with the tools to do so.

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Appendix A

Demographic Profile--Nurse Manager

Please complete the following information:

Name of Unit(s)_____

Your age in years at last birthday_____

Your gender 1)Female_____2)Male_____

Your ethnic background_____

Years in nursing management_____

Years in this hospital_____

Years in this hospital as a manager_____

Years in this unit_____

Years in this unit as a manager_____

Basic nursing preparation 1)AD_____

2)BS____3)MS___4)Diploma____

Highest degree held_____

Highest degree is in_____

Your preferred management style_____

Appendix B

Demographic Profile--Nursing Unit

Please complete the following information.

*Name of Unit_____

*Type of patients

Intensive Care_____(Please specify type)_____

Medical_____(Please specify type)_____

Surgical_____(Please specify type)_____

Other_____(Please specify type)_____

Total FTE's (full time equivalents)_____

Number of RN staff working ≥ 20° per week_____

Number of LVN staff working ≥ 20° per week_____

Number of NA/Orderly working ≥ 20° per week_____

Number of Secretaries working ≥ 20° per week_____

Number of all staff working ≥ 20° per week on Days_____

Number of all staff working ≥ 20° per week on Eves_____

Number of all staff working ≥ 20° per week on Nocs_____

Number of all staff working ≥ 20° per week AM 12's_____

Number of all staff working ≥ 20° per week PM 12's_____

*Total number of all staff working ≥ 20° per week_____

Average Daily Census for 1993____

Average Patient acuity for 1993_____

Scale from_____(least acute)to_____(most acute)

Average HPPD (hours per patient day) for 1993_____

Number of grievances in Oct, Nov, Dec of 1993_____

Number of incident reports in Oct, Nov, Dec of 1993_____

Number of patient falls in Oct, Nov, Dec of 1993_____

Number and type of staff injuries in Oct, Nov, Dec of 1993_____

*Number of nurses managers for this unit in the last 5 years_____

*Has the unit been without a nurse manager >3 months in the last 5 years?

1) Yes_____2) No____

*Number of staff members who have worked in the unit

1) > 10 years_____2) 6-10 years_____3) 2-5 years_____

4) <2 years_____

*Please answer these questions, even if you leave the others blank

Appendix C

Demographic Profile--Staff Member

Please complete the following information.

Your Unit Name_____
Type of Patients_____

Your age in years at last birthday_____
Your gender 1) Female_____ 2) Male_____
Your ethnic background_____
Years employed in nursing_____
Years employed in this hospital_____
Years employed in this unit_____
Years employed in this specialty_____
Basic nursing preparation 1) CNA____2) LPN/LVN_____
3) AD_____4)BSN____5)MS____6)Diploma_____
Highest Degree held 1)AD____2)BS_____3)MS____4)PhD____
In what area is the degree?_____
Current position: 1)RN; ___2)LVN/LPN____ 3)Orderly_____
4)Nurse Assistant____5)Clerical_____6)Other_____(Please specify)
Shift 1)Day____2)Eves____3)Nocs_____4) AM 12_____5) PM 12_____
Number of hours typically worked per day_____
Number of hours typically worked per week_____
Work status
1)full time_____2)part time_____

Appendix D

Information Letter

Date

To: Nurse Managers, Assistant Directors, House Supervisors, Nurse Educators, and Clinical Nurse Specialists at XXX Hospital

From: Jean Ann Seago, Doctoral Candidate, UCSF, School of Nursing

I am a nurse researcher from the UCSF School of Nursing doing a project on work environment and nursing unit outcomes in your institution. I have been approved by Nursing Administration and the Human Subjects Committee at XXX to begin data collection and I will be meeting with some of you at your XXX Meetings on XXX. At that time I will be explaining details of the project and answering any questions you may have.

I would like to ask your permission to collect data on the units from staff members assigned to the unit at least 20 hours per week. I would also like to collect demographic information from the nurse managers about themselves and their units. The demographic surveys are attached to the nurse managers' memorandum. If you do not have the information asked for on the unit demographic instrument, please leave it blank. Please complete the surveys by XXX, and return them to me using the stamped envelope that is attached. Unless you disagree, I will place the questionnaires in small boxes in each nurse lounge on each adult inpatient nursing unit, excluding psychiatry.

I have also attached a copy of the flier that I will post in the nurses' lounges to let them know about the project. I hope to place the questionnaires in the lounges after I attend the XXX Meetings. If you have any questions, please call me at

Jean Ann Seago

XXX-XXX-XXXX

or leave a message with XXX. I look forward to working with you. Thank you for your consideration.

Appendix E

Initial Fliers

INCREASE KNOWLEDGE AND EXPAND THE FUTURE FOR NURSES

IN EXCHANGE FOR 30 MINUTES OF YOUR TIME

YOU CAN SUPPORT A STUDY
THAT MAY IMPROVE THE FUTURE WORK ENVIRONMENT FOR HOSPITAL NURSES
AND
YOU WILL BE ELIGIBLE TO WIN
$250.000
ALL YOU HAVE TO DO IS COMPLETE
THREE SHORT QUESTIONNAIRES

RESEARCHER, JEAN ANN SEAGO, WILL BE

CONTACTING YOU SOON!!!

The Nursing Staff of all hospital adult nursing units will soon have an opportunity to participate in a research study of work group culture, workplace stress, and feelings, being done by doctoral student, Jean Ann Seago, from UCSF School of Nursing. Ms. Seago will be exploring whether work group culture is related to various organizational outcomes. The study participants will complete three questionnaires, taking 30 to 45 minutes, and will then be eligible to enter a drawing for $250.00. Ms. Seago believes that the results of the study can be used to build a program of research that will ultimately help benefit nurses by showing ways to improve the work environment of hospitals. All nursing staff from adult nursing units are invited to participate.

ATTENTION!!!

ALL STAFF WHO ARE ASSIGNEDTO THIS UNIT AT LEAST 20 HOURS PER WEEK

COMPLETE THIS QUESTIONNAIRE AND YOU MAY WIN $250.00!!!

JUST PICK UP A QUESTIONNAIRE AND FOLLOW THE DIRECTIONS.

For questions or more questionnaires, call

JEAN ANN SEAGO AT

XXX-XXX-XXXX

Appendix F

Countdown Fliers

ALL STAFF WORKING 1/2 TIME OR MORE ON ANY NURSING UNIT I NEED YOUR HELP!!!!

I ONLY NEED_____MORE PARTICIPANTS FROM THIS UNIT TO BE ABLE TO ENTER THIS UNIT INTO MY STUDY.

PLEASE TAKE TIME TO COMPLETE THE QUESTIONNAIRE. (TAKE IT HOME IF NECESSARY) I WILL PICK UP THE QUESTIONNAIRES ON XXXX.

LEAVE IT IN THE BOX IN THE UNIT OR SEND IT TO MY MAILBOX IN XXXXXX

THE RESPONSES ARE ABSOLUTELY CONFIDENTIAL. THANKS! JEAN ANN SEAGO

ALL STAFF MEMBERS IN ALL NURSING UNITS AT XXXXX HOSPITAL

THANK YOU FOR YOUR COOPERATION IN MY RECENT RESEARCH PROJECT AT YOUR MEDICAL CENTER

THE DRAWING FOR THE WINNING NUMBER FOR THE $250.00 WILL BE HELD ON XXXXXXX
IF YOU WOULD LIKE TO ENTER THE DRAWING, SEE YOUR NURSE MANAGER FOR A QUESTIONNAIRE AND A STAMPED ENVELOPE.

THE WINNING NUMBER WILL BE POSTED IN ALL NURSING UNITS, SO BE ON THE LOOKOUT

THANKS, AGAIN!!!

JEAN ANN SEAGO

Appendix G

Lottery Ticket

DEAR STUDY VOLUNTEER,

Please make sure you have read the Information Letter on the preceding page. The Information Letter is yours to keep. If you decide to be a study participant, please take the following steps:

1) Read and follow the directions at the beginning of each part of the questionnaire.

2) When you have finished the entire questionnaire, tear off Section One of the number sections at the bottom of this page. You must have the Section One number to claim the prize if you win. Leave Section Two attached to the page and to the questionnaire.

3) Place the completed questionnaire, with this page attached, in my mail box (code 8690) or in the marked box in your unit.

4) If you decide not to participate, please leave this questionnaire i your mailbox and I will remove it.

Thank you for your participation.

Jean Ann Seago

SECTION TWO	SECTION ONE
#_____	#_____
LEAVE THIS SECTION ATTACHED	KEEP THIS SECTION

Appendix H

Final Fliers

PLEASE POST THIS FLIER ON EACH NURSING UNIT

ATTENTION!!!

THANKS TO ALL STAFF MEMBERS WHO PARTICIPATED IN THE RESEARCH PROJECT ON WORK GROUP CULTURE AND WORKPLACE STRESS. THE WINNING NUMBER FOR THE DRAWING FOR $250.00 IS

XXX

IF YOU ARE THE LUCKY WINNER, TAKE YOUR TICKET TO XXX TO CLAIM YOUR PRIZE. THANKS AGAIN

JEAN ANN SEAGO

PLEASE POST THIS FLIER ON EACH NURSING UNIT

ATTENTION!!!

ALL STAFF MEMBERS WHO PARTICIPATED IN THE RESEARCH PROJECT ON WORK GROUP CULTURE AND WORKPLACE STRESS.

BECAUSE NO ONE HAS COME FORWARD WITH THE FIRST NUMBER, A SECOND NUMBER HAS BEEN DRAWN. THE NEW WINNING NUMBER IS

XXX

IF YOU ARE THE LUCKY WINNER, TAKE YOUR TICKET TO XXX TO CLAIM YOUR PRIZE.

THANKS AGAIN

JEAN ANN SEAGO

Appendix I

Thank You Letter

Date

Dear

Thank you and your staff for your support of my recent research project at XXX Medical Center. Those of you who are nurse managers, please find attached questionnaires and self addressed stamped envelopes for the number of participants I still need from your units in order to enter the units into my study. If you could encourage your staff to complete the questionnaires, I would appreciate it very much. For those of you who are not nurse managers or those nurse managers whose units have reached the minimum number needed, I left no envelopes or questionnaires. If you are a nurse manager and have not yet completed the unit and manager demographic sheets, I would be grateful if you would complete those sheets and mail them to me.

The drawing for the $250.00 will be held on XXX. I will send fliers with the winning number to each nurse manager. Please post the fliers with the winning number in your units. There will be directions on the flyer telling the winner how to collect the prize.

I will return in 6-8 months to present the study results. All the staff members at the Medical Center have been very helpful during this study and I could not have completed the data collection without you. Thank you again.

Jean Ann Seago