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THE RELATIONSHIP AMONG STAFF NURSES' PARTICIPATION IN DECISION MAKING, NURSE MANAGERS' LEADERSHIP COMPETENCIES, AND NURSE-PHYSICIAN COLLABORATION

By

MARISA KRAIRIKSH

Submitted in partial fulfillment of the requirements

For the degree of Doctor of Philosophy

Thesis Advisor: Dr. Mary K. Anthony

Frances Payne Bolton School of Nursing

CASE WESTERN RESERVE UNIVERSITY

May, 2000

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SCHOOL OF GRADUATE STUDIES

We hereby approve the thesis/dissertation of

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This dissertation is dedicated in memory of my loving mother,

LAMOM KRAIRIKSH,

who gave her love and support to me until the last day of her life.

She is always in my mind and heart.

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The Relationship among Staff Nurses' Participation in Decision Making, Nurse Managers' Leadership Competencies, and Nurse-Physician Collaboration

Abstract

By

MARISA KRAIRIKSH

Redesigning the structure and process of care is important in today's changing and more complicated health care system. The changes have increased nurses' responsibilities and involvement in decision making. Organizational structure and process influence nurses' decision making. Nurse manager leadership competencies and nurse-physician collaboration are organizational factors that are believed to enhance nurses' participation in decision making. The purpose of this study was to investigate the relationships among staff nurses' participation in three phases of the decision making process related to participation in caregiving and condition of work decisions, nurse manager leadership competencies, and nurse-physician collaboration. The conceptual framework for this study was based on Donabedian's approaches to assessment of quality of care and Holzemer's outcomes model for health care research. A secondary analysis of the Variations in Nursing Practice Model (VNPM) (RO1-NR04274) investigated by Anthony (1998) was conducted.

The data were derived from the questionnaire responses of 279 full-time nonsupervisory registered nurses employed as staff nurses at two urban teaching hospitals

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and one suburban community hospital in Cleveland. Staff nurses' responses to the Participation in Decision Activities Questionnaire (PDAQ), the two single items reflecting the extent of unit manager's leadership competencies for clinical and administrative issues, and the Collaborative Practice Scale (CPS) (Weiss & Davis, 1985) were drawn from the VNPM study.

The results demonstrated that nurse manager leadership competency for clinical issues had a statistically significant positive correlation with phases of caregiving decisions ($r = .14$, $p < .05$ for identification; $r = .17$, $p < .01$ for design; $r = .12$, $p < .05$ for selection) and with phases of condition of work decisions ($r = .17$ for identification, $r = .18$ for design, $r = .17$ for selection, $ps < .01$). Leadership competency for administrative issues had a statistically significant positive correlation with phases of condition of work decisions ($r = .17$ for identification, $r = .17$ for design, $r = .19$ for selection, $ps < .01$). Nurse-physician collaboration had a statistically significant positive correlation with phases of caregiving decisions ($r = .25$ for identification, $r = .23$ for design, $r = .28$ for selection, $ps < .01$) and with condition of work decisions ($r = .23$ for identification, $r = .27$ for design, $r = .27$ for selection, $ps < .01$). Among caregiving decisions, the model (leadership competencies for clinical and administrative issues and nurse-physician collaboration) explained 6.3% of the variance in identification, 6.1% for design, and 7.6% for selection. Among condition of work decisions, the model explained 6.9% of the variance in identification, 8.8% for design, and 8.8% for selection. In each test of the model, only nurse-physician collaboration positively contributed to greater participation in decision making.

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CHAPTER I

Introduction

Involvement of nurses in decision making is a nursing practice activity that enhances the effectiveness of the organization (Porter-O'Grady, 1996). Nurse participation in decision making, as a process of care, is associated with positive outcomes in patients and nurses themselves, such as decreased patient readmission (Baggs, Ryan, Phelps, Richeson, & Johnson, 1992) and nurse job satisfaction (Acorn, Ratner, & Crawford, 1997). However, the extent of nurse participation in decision making may vary with the attributes within an organization. Among those attributes, the competency of nurse managers is a factor influencing staff nurses' involvement in decision making (Aroian, Mesrvey, & Crockett, 1996; Aroian et al., 1997; Dubinicki & Sloan, 1991). Competencies of the nurse manager include functional management, staff management, patient care management, and leadership (Duffield, 1994). Leadership is a process of attempting to influence another's behavior to accomplish specific goals (Callahan, Fleenor, & Knudson, 1986). Nurse managers function within a cost-constrained environment and business orientation; thus, nurse managers need to provide leadership to inspire, challenge, and motivate staff to achieve the goals of the setting (Manfredi, 1996). Nurse managers provide leadership within two primary skill areas: managerial skills and clinical skills (Beaman, 1986; Chase, 1994; Dubinicki, & Sloan, 1991; Mark, 1994; Stahl, Querin, Rudy, & Crawford, 1983). Therefore, a nurse manager's leadership requires clinical and administrative competencies (Dunham & Fisher, 1990).

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Clinical skills are used to direct, coach, and lead staff nurses in their work (Duffield, 1992) as patient care providers. A clinically competent nurse manager serves as a resource and as a role model to mentor staff nurses. One of the nurse manager's administrative skills, particularly human skills, include being able to create a cooperative effort among health care team members while developing trust and open communication (Chase, 1994; Badzek & Cober, 1996; Duffield, 1994). Nurse managers have a role in the development of their staff that includes involving them in decisions that affect the activities of the patient care on the unit (Aroian et al., 1997). Thus, the mentoring and developing roles of a nurse manager provide opportunities for staff nurses to become involved in decision making affecting their practice. Nurses make two types of decisions related to practice: patient care decisions and condition of the work environment decisions (Anthony, 1997, 1999; Blegen, Goode, Johnson, Maas, Chen, & Moorhead, 1993).

An organizational component that also may affect staff nurses' participation in decision making, particularly in caregiving decisions, is the collaboration between nurses and physicians. Nurse-physician collaboration is important in today's changing healthcare environment due to cost containment, changes in patient status, emphasis on total quality management, and attention of professional organizations and investigators in interdisciplinary collaboration (Jones, 1994). Collaboration entails nurses sharing their knowledge, thoughts, and abilities with physicians to provide effective patient care (Kearns, 1994; Lassen, Fosbinder, Minton, & Robins, 1997).

This study provides empirical evidence demonstrating the relationships among these factors—staff nurse's participation in decision making for decisions related to

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patient care (caregiving) and to the work environment (conditions of work), nurse manager leadership competencies, and nurse-physician collaboration.

Statement of the Problem

Today's healthcare system and needs of clients are more complex than ever before because of increased patient acuity, technology advancements, and budget constraints (American Organization of Nurse Executives, 1992; Lufkin, Herrick, Newman, Hass, & Berninger, 1992). Changes in client needs, technology, and resource scarcity create uncertainty within a health care organization (Allred, Hoffman, Fox, & Michel, 1994). Redesigning the structure and process of care within the health care organization system is necessary in order for health care organizations to survive in this uncertain environment and to achieve a common goal of quality patient care (Strasen, 1991).

The nursing profession, as a component in the health care delivery system, is influenced by redesign changes (Sheer, 1996). The changes have increased nurses' workloads and need for additional skills and care as well as their need for greater collaboration with other health professionals (Mitchinson, 1996). Nurses with advanced training and education are accepting increasing responsibility (Deloughery, 1998). Nurses who are more competent and have higher education tend to have greater autonomy (Blanchfield & Biordi, 1996; Kramer & Schmalenberg, 1993). When nurses lose their autonomy in practice, they experience greater job dissatisfaction (McCloskey, 1990) which creates increased turnover (Cavanagh & Coffin, 1992).

Enhancing nurse autonomy is a strategy to overcome these negative outcomes. Facilitating a professional practice model, where there is an autonomous climate

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supporting increased involvement of nurses in decision making, contributes to increased job satisfaction (Acorn et al., 1997; Alutto & Vredenburgh, 1977; Bucknall & Thomas, 1996; Laschinger & Havens, 1996; Moss & Rowless, 1997; Schuler, 1980; Skelton-Green, 1996; Slavitt, Stamps, Piedmont, & Haase, 1978) and decreased turnover (Pierce, Hazel, & Mion, 1996). Staff nurses' involvement in decision making is a crucial factor in the professional practice model (Laschinger & Havens, 1996). Participation in decision making by staff nurses is important because it is the staff nurse who is closest to the bedside and can affect positive patient and professional outcomes (Acorn et al., 1997; Porter-O'Grady, 1996; Shoemaker & El-Ahraf, 1983).

The decision making process consists of multiple steps that begin with identifying a problem and end with evaluating choices and taking action (Bedian & Zammuto, 1991; Bernhard & Walsh, 1995; Charns & Schaefer, 1983). Phases of decision making have been described by many theorists and researchers but the conceptualization used in this current study is taken from Mintzberg, Raisinghanai, and Theoret (1976) and Simon (1977). While each theorist/researcher describes slightly different activities, decision making can be thought of as occurring in three phases: identification, design, and selection. The extent of participation of staff nurses in the three phases of decision making is affected by organizational and professional factors (Anthony, 1999; Prescott, Dennis, & Jacox, 1987). Although the participation in decision making involves multiple phases and can be influenced by many factors, only a few studies have examined the impact of organizational and nurse factors on decision making (Anthony, 1999; Prescott et al., 1987).

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Nurse manager competency is increasingly important in today's complex and continually changing health care organizations, which require high-quality care while maintaining cost-effectiveness (American Organization of Nurse Executives, 1992; Aroian et al., 1997; Mark, 1994). Nurse managers' roles have changed from managing one nursing unit in a centralized structure to managing more than one unit in a decentralized structure. The change in the function and scope of their practice increases their accountability, authority, and responsibility (Manfredi, 1996). Nurse manager leadership competency is a crucial factor that influences job satisfaction, productivity, staff turnover, and commitment to the setting in which nurse managers are working (McNeese-Smith, 1997; Sheridan & Vredenburgh, 1978). Nurse managers have a responsibility to develop their staff by involving them in the decisions that affect their unit (Aroian et al., 1997). This strategy enhances staff nurse retention by providing opportunities for them to participate in clinical and administrative decisions (Doering, 1990). Nurse manager leadership also requires administrative and clinical competencies (Dunham & Fisher, 1990; Lufkin, Herrick, Newman, Hass, & Berninger, 1992; Stahl et al., 1983). Although nurse managers fulfill primarily administrative roles, they possess the knowledge and clinical skills to help them understand patient problems, to evaluate the quality of nursing care, and to accomplish change (Byers & Klink, 1978). Staff nurses perceive that the important characteristics of their nursing leaders include having both advanced knowledge and practice experience as well as administrative competence (Meighan, 1990). Dubinicki and Sloan (1991) found that competencies of nurse managers include directing others, achievement orientation, and group management. Group management competency of the nurse manager, which includes encouraging

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participation, reducing conflict, and promoting team collaboration, would likely facilitate nurses' participation in decision making (Aroian et al., 1997; Dubinicki & Sloan, 1991).

A leader's competency has been explored by researchers who conceptualized the competencies as including three aspects: technical, human, and conceptual skills (Chase, 1994; Duffield, 1994; Katz, 1955; Vance & Wolf, 1986). The conceptualization of these skills is based on Katz's framework for an effective administrator (Katz, 1955). Technical skill involves specialized knowledge, analytical ability within that specialty, and the ability to use tools or techniques, particularly in that discipline. Human skill is concerned with the ability to work cooperatively with other people as a group. Conceptual skill involves the ability to view the organization as a whole, in which changes in one part will affect other parts, and as being influenced by the surrounding environment. In nursing, these skills imply clinical and administrative competencies.

Clinical competence refers to technical skill, which is the ability of nurse leaders to guide patient care activities based on their specialized knowledge and analytical ability (Chase, 1994; Duffield, 1994). Administrative competence refers to the human and conceptual skills which are used by nurse leaders to work with their staff as a team and to understand changes in the setting in which they are working (Chase, 1994; Duffield, 1994). An important activity of the administrative role is open communication with the staff and encouragement of the staff to communicate in the same way (Stahl et al., 1983). White (1971) found that effective nurse managers were more likely to use their staff's ideas and knowledge, were more sensitive to the staff's problems, were provisional of shared information, were trustful and confident, and could motivate staff by giving rewards and guidance. These characteristics may provide staff nurses with a sense of

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respect, and a sense of value of their knowledge and abilities. As a result, staff nurses may feel comfortable and confident to share or participate in decision making about issues that directly affect their practice and about decisions that are related to the work environment.

Collaboration among health care professionals has been emerging as an important factor in providing comprehensive care to patients and enhancing professional autonomy (Mauksch, 1981; Mclain, 1988). Collaboration is a process of working together involving trust and respect for the contributions of each other (Pike, McHugh, Canney, Miller, Reiley, & Seibert, 1993). Nurse-physician collaboration is a process of working together between nurses and physicians to provide quality patient care by joint contribution of their knowledge and skills with mutual trust (Alt-White, Charns, & Strayer, 1983; Weiss & Davis, 1985). Nurse-physician collaboration provides information that creates a greater understanding of patients, thus improving the effectiveness of care planning and implementation (Pike et al., 1993). The effectiveness of collaboration in regard to satisfaction, cost, morbidity, mortality, length of stay, and quality of care has been documented (Alpert, Goldman, Kilroy, & Pike, 1992; Baggs et al., 1992; Kearnes, 1994; Knaus, Drapper, Wagner, & Zimmerman, 1986; Koerner, Cohen, & Armstrong, 1986; Miller, 1997; Mitchell, Armstrong, & Simpson, 1989). Increasing the knowledge of their patients and the quality of their patients' care results from sharing communication and information, from problem solving and decision making, from sharing responsibility in order to achieve a common goal, and from respecting each professional's ability (Evans, 1994; Henneman, 1995; Mauksch, 1981). In this respect, collaboration serves as the underlying framework and provides greater opportunities for nurses to participate in

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patient care decisions. Participation in patient care decisions with physicians, then, can provide nurses with information useful for making decisions related to conditions of work, such as choosing new equipment and supplies for the unit and the method of delivery of care. Conversely, when nurses have greater involvement in decision making they feel comfortable and confident to collaborate with physicians (Davidhizar, 1993).

In conclusion, leadership competencies of nurse managers and collaboration between nurses and physicians enhance the involvement or participation of staff nurses in decision making regarding patient care decisions and condition of work decisions. Consequently, participation in those decisions enhances staff nurses' positive outcomes, resulting in effective patient care planning and implementation. In this way, quality of care, which is the common goal of clinical practice, can be improved.

Purpose of the Study

The purpose of this study was to investigate the relationships among staff nurses' participation in three phases of the decision making process related to participation in caregiving and condition of work decisions, nurse manager leadership competencies, and nurse-physician collaboration.

Conceptual Framework for the Study

The conceptual framework for this study was based on Donabedian's approaches to assessment of quality of care (Donabedian, 1966, 1969, 1988) and Holzemer's Outcomes Model for Health Care Research (Holzemer & Reilly, 1995).

Donabedian's (1966, 1969, 1988) model is based on system theory and includes structure, process, and outcome for the evaluation of quality of care. "Structure" refers to the assessment of the organization's attributes including material resources, human

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resources, and organizational structure, such as the adequacy of facilities and equipment, the qualification of medical staff, and the administrative structures that support and direct the provision of care (Donabedian, 1966). "Process" includes patients' and providers' activities related to health care (Donabedian, 1988). Provider's activities are those performed within and between providers such as the technical competence in the performance of diagnosis and therapeutic procedure of physicians as well as coordination among health care personnel (Donabedian, 1966). "Outcome" includes the results of care including patient health status and patients' satisfaction with care (Donabedian, 1969, 1988). These three components are influenced by one another in that structure influences process and process influences outcomes (Donabedian, 1988).

Holzemer and Reilly (1995) extended the work of Donabedian and developed the Outcomes Model for Health Care Research to provide a framework for explaining the more complex nature of outcomes in the health care arena. They conceptualized the system model components as existing on a horizontal axis and a vertical axis. The horizontal axis, based on Donabedian's framework, included context or inputs (as Donabedian's structure), processes, and outcomes. The vertical axis components were client, provider, and setting. "Client" was defined as "an individual, a family, a school, or an entire community" (p.184). "Provider" referred to traditional health care providers such as nurses or physicians, nontraditional healers, and other health workers in a community trained to provide health care. The term "setting" included both the formal and informal organizations, which delivered health care services. The dimensions of structure-process- outcome and client-provider-setting were combined into nine components: client/inputs, client/processes, client/outcomes, provider/inputs,

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provider/processes, provider/outcomes, setting/inputs, setting/processes, and setting/outcomes (Figure 1). The definition of each component was defined by Holzemer and Reilly (1995) as described in the following sections.

Client/inputs referred to personal characteristics, strengths, concerns and needs, and values and beliefs. This term also included the client's well-being, functional status, and quality of life. *Client/processes* denoted the client's health behaviors that have effects on his/her health such as weight control, smoking, and exercise. *Client/outcomes* referred to physiological aspects, such as mortality and complications, psychological aspects, such as discomfort and dissatisfaction, and the client's utilization of health care service, such as length of stay and readmission rates.

Provider/inputs referred to the attributes of the providers that affected the processes and outcomes, such as the provider's education, knowledge, attitude, ability, and experiences. *Provider/processes* were defined as all types of health care delivery systems, interventions, or treatments that were delivered by providers such as medical care practices, participation in both clinical and administrative decision making, and standardized care plans. *Provider/outcomes* included provider satisfaction, provider intent (to stay or leave), and level of ongoing education.

Setting/inputs included the characteristics of the organization such as the values, attitudes, and beliefs of the organization as well as the material resources, financial resources, information systems, patient acuity levels, and availability of health care professional resources. *Setting/processes* referred to activities of the organization used to accomplish quality patient care such as total quality improvement, communication among providers and different departments, and strategic planning. *Setting/outcomes* included

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the results in the aggregate level such as patient satisfaction, mortality and morbidity, and readmission rate.

Holzemer and Reilly (1995) focused on the relationships among clients' outcomes and client/inputs, client/processes, provider/inputs, provider/processes, setting/inputs, and setting/processes. The influences of setting/inputs on provider/processes were not primarily discussed. Holzemer and Reilly (1995) reviewed research studies and categorized them in each component of the model. Participation in both clinical and administrative decision making has been studied as a process of providers (Eisenberg, 1985). The nurse-physician communication was studied as a measure of setting/processes that influenced clients' outcomes (Knaus et al., 1986). Leadership competency was not explicitly reviewed and categorized in the model.

	Inputs/Structures	***Processes***	***Outcomes***
Client			
Provider			
Setting			

Figure 1. The Holzemer's Outcomes Model for Health Care Research (Holzemer & Reilly, 1995)

The current study focused on the level of provider/processes, setting/inputs, and setting/processes. Participation in decision making of staff nurses was conceptualized in the provider/process component as provider's process of care. Nurse manager leadership

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competency was viewed as a setting input because it was a component of the administrative structure of healthcare settings which affected staff nurses' participation in the decision making process. Nurse-physician collaboration was conceptualized in the setting/ process component as the communication among providers. The conceptual framework for this study is illustrated in Figure 2. Relationships among the study variables were represented by arrows from nurse manager leadership competency and nurse-physician collaboration to staff nurses' participation in decision making.

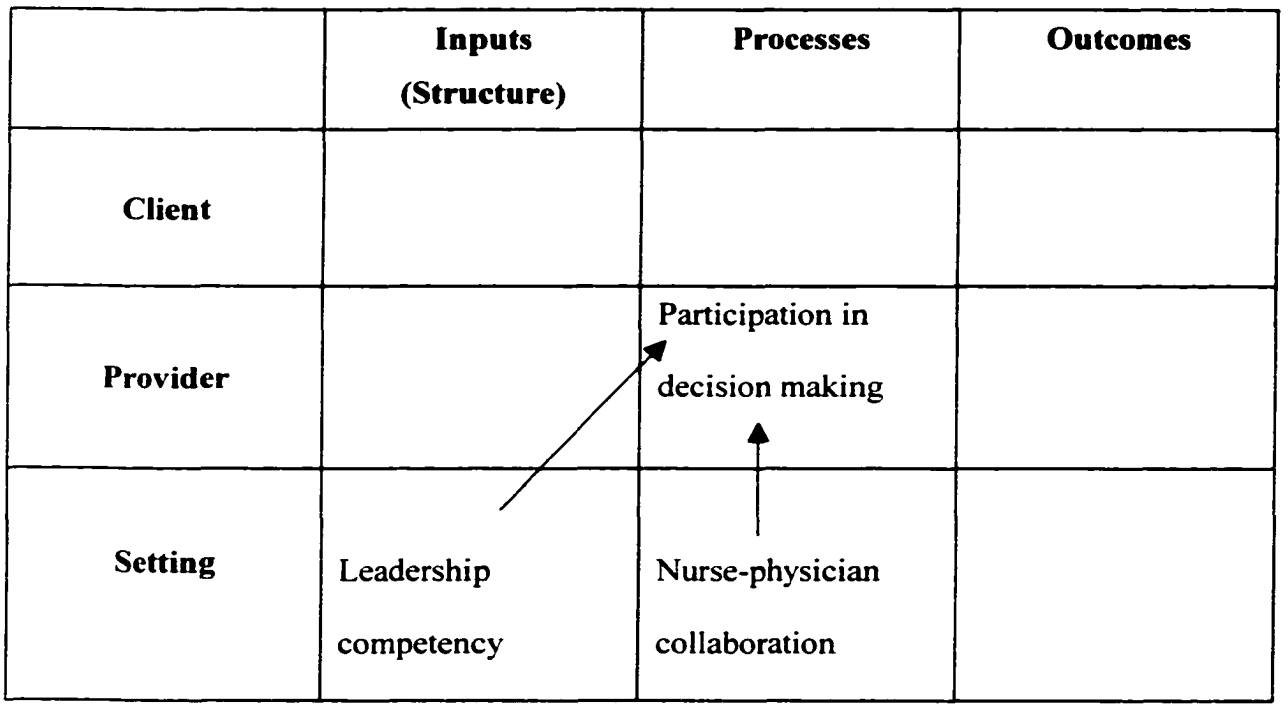

Figure 2. Conceptual Framework

The relationships proposed in this model were tested in this current study through a secondary analysis from the Variation in Nursing Practice Model (VNPM) study (Anthony, 1998). The VNPM study aimed at investigating the characteristics of the

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nursing practice model by developing and validating a mathematical index of the structural and contextual factors of professional nursing practice.

Significance to Nursing Science

Developing nursing science and nursing theories is important for nurses who are entering into a new era of developing unique knowledge in the discipline (Cody, 1999; Silva, 1999). Nursing theory development has been interested in defining the body of nursing knowledge (Walker & Avant, 1995). The knowledge in nursing administration that describes conceptual frameworks and models is not well developed (Johnson, Gardner, Kelly, Maas, & McCloskey, 1991). The significance of this study lies in its contribution to theory development for nursing science and nursing administration. For nursing science, the current study contributes to nursing practice theory development by testing a model that hypothesizes relationships among the organizational structure of nurse manager leadership competency, the organizational process of nurse-physician collaboration, and the provider process of staff nurses' participation in decision making. For nursing administration, the current study provides greater understanding about the influence of nurse manager leadership competency and the influence of nurse-physician collaboration on nurses' participation in decision making. This knowledge is necessary for nursing administrators who seek to redesign nursing practice models and shape the working environment to provide the best quality of patient care at the lowest cost (Allred, Arford, Michel, Veitch, Dring, & Carter, 1995; Duffield, 1992). Redesigning nursing practice models that includes factors supporting greater decision making and interdisciplinary collaboration on the unit will help the nursing unit to meet the goal of providing the highest quality of nursing care to patients (Przestrzelski, 1987). Staff

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nurses, as bedside nurses, provide a consistent presence with the patient and have the most opportunities to influence both patient and institutional outcomes (Lamb-Havard, 1997). Their participation in decisions on the unit will exert the most direct influences. Therefore, it is necessary for nursing administrators to facilitate staff nurse participation in decisions related to patient care and the work environment in order to accomplish quality patient care.

This study provides important information to nursing administrators related to factors influencing staff nurses' participation in decision making. By using this knowledge, nursing administrators can enhance staff nurses' participation in decision making by increasing nurse manager leadership competency and nurse-physician collaboration. Nurse managers serve as mentors and developers to increase professional growth of staff nurses (Aroian et al., 1997; Darling, 1985a, 1985b). Their leadership helps staff nurses to be involved in decisions on the unit. Nursing administrators can help staff nurses to increase their self-confidence and clinical competencies, which are necessary for establishing a collaborative relationship with physicians (Davidhizar, 1993; Makadon & Gibbons, 1985). They are responsible for developing strategies to promote and support nurse-physician collaboration to enhance nurse participation in decision making on the unit.

Definition of Variables

Participation in decision making. Theoretically, participation in decision making is conceptualized as a performance activity attempting to achieve organizational goals (Radford, 1975). In this current study, staff nurses' participation in decision making is "the extent nurses have a say in shaping two kinds of decisions that are directly

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associated with their work as patient care providers and with their work environment" (Anthony, 1995, p. 3).

The decision making phases were conceptualized based on the framework of Mintzberg et al. (1976) and Simon (1977): raising the issue and clarifying the problem (identification); generating and evaluating alternatives (design); and selecting among alternatives (selection). The definition of each phase is presented in Table 1.

Table 1

Definitions of Phases of Decision Making Process

	Phases of Decision Making	Definition
Phase 1	Raising the issue Clarifying the problem	Define, label, and recognize the problem Confirm and interpret the problem
Phase 2	Generating alternatives Evaluating alternatives	Identifying, enumerating, or suggesting different methods to deal with the problem Examine and analyze the alternatives
Phase 3	Selecting among alternatives	Choose the alternative to be used in solving the problem

Note. From "Participation in Decision Activities Questionnaire" by M. K. Anthony, 1995. Copyright 1995 by M. K. Anthony, Case Western Reserve University.

Types of decisions. Two types of nursing practice decisions appeared in the literature: caregiving and condition of work decisions (Anthony, 1997, 1999; Blegen et al., 1993; Kennard et al., 1996; Prescott et al., 1987). Caregiving decisions are defined as "decisions involving recognition, determination, and action with regard to a crisis or problem that occurs in an individual patient-nurse encounter" (Anthony, 1997, p. 16).

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Condition of work decisions are decisions made for groups of patients to manage and design the clinical practice environment affecting care delivery and include decisions about resources, personnel, standards of care, and care delivery practices (Anthony, 1997, 1999).

Leadership competency. Leadership is "an interactive process directed toward mutual goal achievement of leader and follower" (Manfredi, 1996, p. 319). For this study, leadership competency was theoretically defined as the adequate ability of leaders to influence other people to accomplish the goals of an organization (Brooten, 1984; Jaques & Clement, 1991; McCloskey & Molen, 1986; Yura, Ozimek, & Walsh, 1976). Leadership is a component of organizational structures, which is influenced by an organization's philosophy and objectives to achieve the goals of that organization (Douglass, 1977). Nursing leadership involves the processes of a nurse who influences the actions of other persons to achieve the goals of a healthcare organization (Yura et al., 1976). Nurse managers have two primary responsibilities: patient care and general management of the nursing unit (Acorn et al., 1997; Aroian et al., 1997). Their leadership competency in these two issues can be evaluated by their staff nurses because nursing staff are closest to the patient and are aware of what supports practice and what inhibits patient care effectiveness (Fisher, Brown, Hall, & Fitzgerald, 1995). Nurse managers are in a key position to influence and direct all nursing staff to provide patient care (Beaman, 1986; Sovie, 1994). Thus, staff nurses' perception is the strongest evidence for evaluating nurse manager leadership competencies. Self-evaluation of leadership competencies by nurse managers themselves may result in more favorable impression of themselves (Wright, 1996). Furthermore, Kouzes and Posner (1987) stated that "leadership is in the

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eye of the follower" (p.15) and followers are the ones who determine whether a person should be a leader and whether a leader possesses leadership qualities. Nurses work under the direction and leadership of a unit manager where relationships and expectations evolve. An assumption of this study is that nurse manager leadership competency for clinical and administrative issues is present only to the extent it is perceived by staff nurses. Perceptions are influenced by one's frame of reference derived from past and present experiences, social norms, and other cues occurring within the environment (O' Reilly, Parlett, & Bloom, 1980).

In this study, nurse manager leadership competency was operationally defined as the perception of staff nurses of a nurse manager's ability to influence them to achieve the unit goals related to clinical and administrative issues. Nurse manager leadership competency was conceptualized as a characteristic of the organization that impacts the nurse, not just as a characteristic of an individual nurse manager.

Nurse-physician collaboration. Nurse-physician collaboration is the interaction between nurses and physicians with trust, respect, and joint contributing of their knowledge, skills, and values to accomplish the goal of quality patient care (Pike et al., 1993; Sebas, 1994; Weiss & Davis, 1985). For this study, nurse-physician collaboration was the extent to which staff nurses and physicians work together to provide patient care on the unit.

Research Questions

This study was guided by the following two research questions:

1) What are the relationships among hospital staff nurses' participation in the identification, design, and selection phases of decision making related to caregiving and

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condition of work decisions, nurse manager leadership competencies for clinical and administrative issues, and nurse-physician collaboration?

2) To what extent do nurse manager leadership competencies for clinical and administrative issues and nurse-physician collaboration explain variation in levels of staff nurses' participation in the identification, design, and selection phases of caregiving and condition of work decision making?

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CHAPTER II

Review of the Literature

This study investigated the relationships among staff nurses' participation in three phases of the decision making process related to participation in caregiving and condition of work decisions, nurse manager leadership competencies, and nurse-physician collaboration. The following review of the literature focuses on these concepts. This chapter is divided into three sections. The first section reviews literature on decision making and participation in decision making and its measurement. The second section focuses on leadership and leadership competency. The third section reviews the literature on nurse-physician collaboration including its contributing factors and effects.

Provider Process: Participation in Decision Making

Decision making. Developing a theoretical perspective of decision making has been attempted by theorists in many disciplines: economists, mathematicians, philosophers, social scientists, and statisticians (Rensik, 1987). Mathematical models are used to describe how decisions should be made by weighing the alternatives and selecting the most highly valued choice (Tanner, 1986). In this current study, decision making is a process describing a performance activity (Radford, 1975) to reach a conclusion, rather than a mathematical process; the conclusion represents the best choice among available alternatives (Ellis & Harty, 1991). The process begins with the identification of a problem and ends with the evaluation of the choices and taking a course of action (Bedeian & Zammuto, 1991; Bernhard & Walsh, 1995; Charns & Schaefer, 1983).

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According to this definition, in order to reach a conclusion, a decision-maker has to be a participant in the antecedent phases of the decision making process. Many theorists have proposed specific phases of the decision making process. Mintzberg et al. (1976), for example, described the phases of decision making in terms of identification, development, and selection. The identification phase comprises recognition, assessment, and analysis of the problems or situations. The development phase involves searching the ready-made solutions and modifying those solutions or designing new solutions. The purposes of the selection phase are to screen the alternatives; to evaluate the choices by judgment, bargaining, and analysis; and to authorize or make the final choice to be approved by the next higher level.

Simon (1977) conceptualized decision making in a similar fashion but specified four phases rather than three: 1) intelligence, 2) design, 3) choice, and 4) review. The intelligence phase involves assessing the problems or conditions required for the decision. Design is the phase of developing and analyzing the available courses of action. The phase of choice is selecting an option among the courses of action designed in phase two. The fourth phase, review, is the evaluation of the past choices. The phase of intelligence, design, and choice is similar to Mintzberg et al's identification, development, and selection, respectively.

Janis and Mann (1977) proposed five sequential stages of decision making: 1) appraising the challenge, 2) surveying alternatives, 3) weighing alternatives, 4) deliberating about commitment, and 5) adhering despite negative feedback. Appraising the challenge, which is similar to Mintzberg et al.'s "identification" and Simon's "intelligence," is the stage in which a decision maker recognizes a problem by

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challenging information, which may be either an event that happened to him or herself or information gleaned from other sources. In the stage of surveying alternatives, the decision-maker focuses on one or more alternatives and asks other people for recommendations and information. This stage is similar to Mintzberg et al.'s development phase and Simon's design phase. After the alternatives are surveyed, the decision-maker narrows down the list of alternatives by deleting the alternative that does not seem to solve the problem or that is costly. Weighing alternatives is characterized by the consideration of the advantages and disadvantages of each alternative selected from stage two and the selection of the best one, which is similar to Mintzberg et al.'s selection phase and Simon's choice phase. The decision-maker, then, lets other people know of his or her choice and commits him or herself to implement this decision. His or her decision may be disapproved by others or cause negative feedback. However, the decision-maker continues to adhere to it and views it as a challenge to seek more and better alternatives. The fourth and fifth stages are concerned with the actions of decision-makers and their consequences after they select the best choice to solve the problem. The fifth stage of adhering despite negative feedback has the same characteristics of Simon's review stage. The stages of decision making proposed by Mintzberg et al. (1976), Simon (1977), and Janis and Mann (1977) are summarized and compared in Table 2.

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Table 2

Stages of Decision Making Proposed by Mintzberg, Raisinghanai, and Theoret (1976), Simon (1977), and Janis and Mann (1977)

Mintzberg, Raisinghani, and Theoret (1976)	Simon (1977)	Janis and Mann (1977)
Identification	Intelligence	Appraising the challenge
Development	Design	Surveying alternatives
Selection	Choice	Weighing alternatives
		Deliberating about commitment
	Review	Adhering despite negative feedback

The phases of decision making studied in the primary study (the VNPM study) and in this current study were conceptualized based on the work of Mintzberg et al. (1976) and Simon (1977). The phases include identification, design, and selection. The conceptualization was explained in the study of Anthony (1995) as follows: Mintzberg et al.'s identification phase was chosen over Simon's intelligence phase because identification includes recognition, assessment, and analysis which is broader than assessing in the intelligence phase; Simon's design was chosen over Mintzberg et al.'s development because it includes not only developing but also analyzing the courses of action; Simon's choice phase and Mintzberg's selection phase described consistent actions; the term "selection" was chosen because it is consistent with the term used in a

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study of participation in decision making conducted by Prescott et al. (1987). In the current study, identification was defined as raising the issue and clarifying the problem. Design was defined as generating and evaluating the alternatives. Selection was defined as choosing among alternatives. The definition of each phase was described in Chapter 1.

Decision making is a characteristic of autonomy (Ballou, 1998). If an individual does not have the opportunity and/or willingness to make a decision, he or she will not perceive his or her autonomy (Batey & Lewis, 1982). Collins and Henderson (1991) cited Mundinger's (1980) belief that autonomy allows for accountability and authority in decision making. That is, an individual who has autonomy in making decisions believes that he or she has the authority to implement the decisions and feels accountable for those decisions (Sabiston & Laschinger, 1995). Autonomy is defined as an individual's independence to perform activities and make decisions within his or her scope of practice without external control (Alexander, Weisman, & Chase, 1982; Blanchfield & Biordi, 1996; Singleton & Nail, 1984) and requires knowledge and skills underlying those activities and decisions (Ballou, 1998). Based on these notions, autonomy provides a basis for decision making.

In general, to make a decision, an individual must have the autonomy to think, to identify the problem, to search for solutions, and to select the best choice to take action for solving the problem. Similarly, to participate in the decision making process, one must have the autonomy to share his or her ideas of how to solve the problem. Therefore, an individual who has greater autonomy will have a greater extent of participation in decision making and will be more satisfied with his or her performance. The following studies demonstrated the relationship among autonomy, participation in decision making,

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and nurse outcomes. Bucknall and Thomas (1996) investigated the relationship between decision task autonomy and task satisfaction in critical care nurses. Two hundred and thirty Australian critical care nurses were asked to rate the frequency of involvement in decision making, looking at 10 decision tasks related to diagnostic, therapeutic, and procedural decisions. The frequency scale ranged from 1 to 6, from "never" to "several times daily." The 10 decisional tasks were also used to evaluate the nurses' satisfaction with their involvement in decisions. The results showed that nurses who participated more in critical care decisions were more satisfied. Acorn et al. (1997) studied the relationships among participation in decision making, perceived autonomy, job satisfaction, and organizational commitment of 200 Canadian nurse managers in acute care hospitals by using path analysis to test the relationships. The findings indicated that participation in decision making related to conditions of work decisions, as a component of decentralization, had significant positive direct effects on autonomy, job satisfaction, and organizational commitment.

The studies of Bucknall and Thomas (1996) and Acorn et al. (1997) showed a relationship between autonomy and participation in decision making. The current study did not include autonomy as a study variable. However, providing an environment with a sense of autonomy in practice is a responsibility of nurse managers to enhance nurses' involvement in decisions affecting the unit (Aroian et al., 1997).

In reviewing the literature on participation in decision making, two distinct themes emerge. The first theme, which appeared in early studies, consists of investigating the difference between the actual and the desired level of individual participation in decision making as well as the personal and organizational characteristics of subjects who

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have different levels of participation. One of the earliest of these studies was the study by Alutto and Belasco (1972) to examine decision conditions in 454 school teachers by distributing a questionnaire consisting of 12 decisional situations related to various conditions of work such as "hiring new faculty members" and "planning school budgets" (p. 119). The subjects responded to these situations by indicating if they currently participated and if they desired to participate in such situations. Then, the subjects were categorized into three groups: decisional deprivation (actual participation is less than desired; $\underline{n}$ = 260), decisional equilibrium (actual participation is equal to desired; $\underline{n}$ = 107), and decisional saturation (actual participation is greater than desired; $\underline{n}$ = 87). Comparisons of subjects in each group showed different personal and organizational characteristics. Teachers who were decisionally deprived tended to be younger males, who perceived higher levels of role conflict, whereas teachers who experienced decisional saturation were older females and perceived moderate levels of role conflict.

This study provides some beginnings in understanding participation in decision making in an organization by exploring the difference between the actual and the desired level of participation. However, the level of participation in phases of decision making is unknown.

In 1977, Alutto and Vredenburgh reinvestigated the differences of decisional conditions in 197 nurses from two urban hospitals. The nurses responded to a self-administered questionnaire consisting of 13 decisional situations related to patient care and conditions of work by stating whether they currently participated in and whether they wished to participate in such situations. Nurses characterized into the decisional deprivation, equilibrium, and saturation groups were compared regarding organizational

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commitment, career dissatisfaction, role conflict, and job tension. The results indicated that the majority of nurses wanted to be more involved in decision making than they currently were. Nurses who experienced decisional deprivation (N = 134) reported greater job tension and career dissatisfaction. Using the decisional condition framework of Alutto and Belasco (1972), Ivancevich (1979) studied project engineers (N = 154) and also found that the subjects who had decisional deprivation had less organizational commitment, moderate levels of work satisfaction, and high levels of physical stress and job tension.

The studies by Alutto and Vredenburgh (1977) and Ivancevich (1979) provide more information regarding the importance of participation in decision making to outcomes of the personnel who were working in an organization. However, the phases of decision making and other factors influencing participation in decision making have not been explored. The current study provides a clearer picture of the condition of participation in decision making by investigating the extent of actual participation in the phases of the decision making process. The levels of participation were measured ranging from no participation (0) to a great extent of participation (6), rather than merely measuring the difference of numbers of decisional situation responses indicating "actual" or "desired." In addition, factors related to the structure and process of settings, which influence decision making were explored in the current study.

In the second theme that emerges from the nursing literature, participation in decision making is conceptualized as a component of decentralization, which affects the outcomes of health care providers. Several studies have tested models using this conceptualization. Przestrzelski (1983) studied the effects of decentralization on nurses'

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job satisfaction with 343 nurses working in hospitals. Decentralization was operationalized as participation in decision-making activities related to adoption of new programs and new policies and to the promotions of professional staff. The researcher found that those nurses who had high participation in decision making were more satisfied in their work. Shoemaker and El-Ahraf (1983) examined the relationships among decentralization, personnel turnover, job enrichment, and job enlargement. Decentralization was defined as the extension of authority, responsibility, and decision making throughout the hospitals from the administrative level to the unit level. Thirty hospitals were mailed a survey-questionnaire asking about the use of decentralization in the hospitals and the consequences of its implementation. Study findings indicated that 83.3% of the hospitals had increased personnel retention. Other positive results, such as a decrease in conflict, an increase in job satisfaction, and more effective decisions, were reported. The study by Acorn et al. (1997) also conceptualized participation in decision making as a component of decentralization and found positive relationships among this concept, perceived autonomy, job satisfaction, and organizational commitment.

Mitchell et al. (1989) described a demonstration project developed to document organizational and clinical outcomes associated with the organizational structures, organizational processes, and clinical processes in critical care units. The data were derived from 42 nurses and 68 physicians who were working in two special care units in a nonprofit, community-based hospital and were derived from 192 patient observations. Decentralization is a component of organizational structures that provides staff nurses with participation in decision making at the unit level, which was reflected by staff perceptions of having authority and autonomy in making decisions, and in influencing

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their own work. The researchers found that positive organizational outcomes (perceptions of positive organizational climates and low turnover rates) and clinical outcomes (low mortality ratio, no new complications, and high patient satisfaction) existed in a unit characterized by a high perceived level of autonomy in decision making, a low level of perceived supervisory control, and a high level of perception that nurses influenced their own work.

These studies emphasized the influence of process of care (participation in decision making) on outcomes of health care providers (job satisfaction, turnover, job enrichment, and job enlargement). However, organizational factors that have an impact on phases of decision making and result in such positive outcomes are unknown. Participation in decision making activities related to patient care and work environment was measured in these studies. However, the participation in phases of decision making related to those decisions has not been investigated. The current study was an attempt to provide more information about the concept of participation in decision making by examining the relationship between factors related to organizational structure and process and the participation in phases of decision making for both patient care and condition of work decisions.

Only three studies examined the degree of participation in phases of decision making and in decision situations related to direct patient care and conditions of work. First, a qualitative study by Prescott et al. (1987) explored the involvement of 150 staff nurses from medical, surgical, intensive care, pediatric, and specialty units in the decision-making process related to patient care. The nurses were surveyed in a semistructured, tape-recorded interview. The respondents were asked questions related to

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involvement in patient care decisions. The process of decision making was analyzed based on the three stages of decision making: 1) information collection and problem identification, 2) consideration of alternative strategies, and 3) selection of a course of action. The findings indicated that staff nurses participated primarily in the first stage. They perceived they had no authority to select the final course of action.

The second study by Blegen et al. (1993) examined the desired level of staff nurses' autonomy by indicating the extent of the desired level of involvement in different areas of decision making. The researcher developed a questionnaire containing specific decisions in patient care and unit operation activities. The questionnaire included 21 patient care activities and 21 unit operation activities. Patient care activities included both traditional and nontraditional responsibilities of nurses in direct care, such as teaching patient self-care and health promotion behavior, preventing patient falls and skin breakdown, and make decisions regarding treatments. The unit operation activities included the responsibilities of nurses in indirect care or management activities, such as determining work schedules, methods of care, and standards of nursing care; planning unit budgets; and being a member of hospital committees. Each of the forty-two decisions was scored in terms of preference for participation, on a 1-5 scale. On this scale, 1 = "has no authority and accountability" and 5 = "has full independent authority and accountability."

The results showed that the desired levels of staff nurse autonomy were categorized into three groups based on the desired level in each of the decision making activities. The first category was the activities about which nurses desired independent authority. The activities included 12 patient care activities and 4 unit operation activities.

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The second category was the activities in which nurses wanted to share their decisions with others, consisting of nine unit operation activities. No patient care decisions were included in this category. The third category was the activities about which nurses either did not desire to be involved or wanted little involvement. This category consisted of nine patient care decisions and eight decisions related to unit operation activities.

Findings of this study contribute to the knowledge of nurse involvement in specific patient care and unit operation decisions. The desired level of involvement depends on the nature of the decision. However, the actual participation in phases of decision making for the two kinds of decisions and the setting factors influencing the nurses' involvement in decision making were unknown.

The third study, conducted by Anthony (1997, 1999), studied the influence of decentralization and expertise on staff nurses' participation in phases of decision making and developed an instrument to measure the actual decision making behavior of staff nurses [Participation in Decision Activities Questionnaire (PDAQ)]. Anthony characterized decision making, based on the work of Mintzberg et al. (1976) and Simon (1977), as consisting of three phases: identification, design, and selection. She used the types of practice decisions categorized by Blegen et al. (1993) to identify the types of decisions which staff nurses made. The patient care decision activities of Blegen et al. were used as caregiving decision activities; unit operation activities were used as condition of work decision activities. By using the PDAQ to measure the extent of staff nurses' participation in decision making, Anthony found that nurses had high to moderate participation in the phases of caregiving decisions, whereas nurses had less participation in condition of work decisions. Decentralization, expertise, and the interaction of

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decentralization and expertise explained 4% of the variance in participation in design and selection phase for caregiving decisions. Among condition of work decisions, the model explained 5% of the variance in identification, 6% for design, and 8% for selection.

Anthony's (1997, 1999) study was an attempt to understand the inconsistent findings regarding the effects of decision making on outcomes. This gap exists in part due to the lack of specific instruments to evaluate nurses' participation in decision making and the lack of congruence between having authority for decision making and exercising that authority.

Anthony (1997, 1999) viewed decision making as an organizational process comprising three phases and clearly measured the extent of participation in each phase of decision making as related to caregiving and conditions of work decisions. Factors related to the administrative and professional dimensions of the healthcare structure and their influences on participation in decision making were explored. The current study expands the knowledge about factors influencing participation in decision making by examining the relationships between other structural and process factors and decision making.

In summary, the literature provides various perspectives of conceptualizing participation in decision making. Little research exists that assessed actual participation in phases of decision making regarding specific types of decisions as well as its influencing organizational factors. The current study contributes to the understanding of decision making by examining the relationship between the setting structure of nurse manager leadership competency and the setting process of nurse-physician collaboration

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and the provider process of staff nurses' actual participation in phases of two types of decisions.

Setting Structure: Nurse Manager Leadership Competencies

A nurse manager is a registered nurse who is responsible for the management of personnel, operations, and patient care in one or more settings (Mark, 1994; Strader & Decker, 1995). The nurse manager has evolved from a unit-based head nurse to a manager with 24 hour responsibility for one or more patient care units (Hall & Donner, 1997). Nurse manager competencies include patient care or technical management, human management, organizational or functional management, financial management, and leadership (Chase, 1994; Duffield, 1994). Leadership is a strategy to influence people to accomplish goals of the organization (McCloskey & Molen, 1986). Thus, as a leader, a nurse manager influences people in a nursing unit to work effectively in both clinical and administrative issues to achieve the common goal of quality patient care (Schweiger, 1980). The following literature focused on the existing knowledge about leaders, leadership, and competencies of nurse managers.

Leader. A leader is a person who stimulates other people to think, analyze, and synthesize (Kramer & Schmaleberg, 1990). A leader guides and directs other people to reach positive outcomes (Marrelli, 1997). A leader does not necessarily have a formal managerial position, whereas a manager occupies a formal position in an organization and is responsible for effective use of available resources (Grohar-Murray & DiCroce, 1992). A person who is a leader may be a poor manager. However, an effective manager is better if he/she is also a good leader. Both skills may exist in one person.

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An effective leader is a person who is a risk taker, who can handle frustrations, has self-respect, can interact with other people, and enjoys working (Schweiger, 1980). For nursing leaders, Meighan (1990) found that the most important characteristics of nursing leaders (as perceived by staff nurses) were experience, advanced knowledge, expertise, clinical competence, and assertiveness. These leadership characteristics are necessary for the nurse manager to facilitate the quality of patient care because facilitating the quality of patient care demands a higher level of knowledge and technical skills and the ability to collaborate with other health care personnel (Oroviogoicoechea, 1996).

Leadership. Leadership has been defined as a process of influencing people to accomplish goals of the organization (Brooten, 1984; Jaques & Clement, 1991; McCloskey & Molen, 1986; Yura, Ozimek, & Walsh, 1976). The common components of leadership are influence, leader, and goal. This process is viewed as a component of organizational structures, which is shaped by an organization to best suit the philosophy and objectives to achieve the organization's goals (Douglass, 1977). This conceptualization provides an alternative view of the leadership process as being an organizational structure that functions as input for followers to work toward accomplishing an organization's goals. According to this understanding, leadership can be classified into the "structure" element of Donabedian's approaches for assessing quality of care as a structure to support and direct the provision of care (Donabedian, 1966). Consistent with Donabedian, the current study followed these notions and conceptualized leadership as a setting/input component in Holzemer's Outcomes Model for Health Care Research (Holzemer & Reilly, 1995).

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Leadership and management are different. Management consists of actions performed to accomplish work through others by using resources effectively and efficiently to accomplish organizational goals (Brooten, 1984; Grohar-Murray & DiCroce, 1992; Hersey & Blanchard, 1993). Management involves daily routines of work (Jaques & Clement, 1991). Management requires a formal designated position whereas leadership is an unofficial position which is achieved by the agreement of many people within an organization (Tappen, 1995). Leadership initiates change by setting direction, creating a vision, and communicating, empowering, motivating, and inspiring people, whereas management carries out functions by planning, organizing, directing, and controlling (Cherrington, 1994). However, both leadership and management imply behaviors of interacting with people.

Leadership behavior/style. Many theorists have described behaviors or styles of leadership. One of the earliest of these descriptions was proposed by Vroom and Yetton (1973). They proposed a normative model of leadership which represents decision-making methods of leaders ranging from autocratic (AI, AII), to consultive (CI, CII), to group (GII). Autocratic behavior uses the process of AI and AII. In the process AI, the leader uses information available at that time and solves the problem by him/herself. When using the process AII, the leader uses necessary information from subordinates and makes decisions. Consultive behavior demonstrates the processes of CI and CII. The leader using the CI process shares the problem and information with subordinates individually and then makes decisions. In the process CII, the leaders share the problem and information with subordinates in groups and then make decisions. GII is the process

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in which the leader and subordinates solve the problem together by reaching the decision as the consensus of the group.

According to the Vroom and Yetton model of leadership, leadership behavior influences subordinates' participation in the decision-making process. Consultive and group behavior facilitates subordinates' participation in the decision making process--particularly in the stage of identifying a problem. Autocratic leaders do not provide an opportunity for subordinates to become involved in making decisions. However, a leader may use different leadership styles in different situations; for example, a democratic leader must use an autocratic leadership style in an emergency or crisis situation. Similar to the concept of Vroom and Yetton (1973), Douglass (1977) stated that different leadership styles exist on a continuum ranging from authoritarian management (in which a designated person dominates others and limits the degree of participation in decision making by the others) to democratic leadership (which allows group involvement) to laissez-faire leadership (which has no rules and regulations).

Schweiger (1980) categorized levels of leadership into two types: formal and informal leadership. Formal leadership is the leadership with authority and formally accepted by people within an organization, whereas informal leadership utilizes no designated authority, but is informally accepted by the group.

Leadership styles are also categorized into transformational and transactional styles. Transformational leaders are concerned with the staff as individuals and develop staff abilities through intellectual stimulation, build motivation in the staff, and incorporate the staff's ideas to solve problems (Dunham-Taylor, 1995; Marrelli, 1997). They create empowerment in followers, whereas transactional leaders focus on the

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performance of staff by using reward-punishment management and focus on daily operations (Cherrington, 1994; Dunham-Taylor, 1995).

Leadership is exhibited in many ways by different people, at different times, and in various places (Douglass, 1977). Styles of leadership have been studied on different levels of nurse administrators and in differing relations to staff nurses' outcomes. Boumans and Landeweerd (1993) studied the effects of the social and instrumental leadership styles of head nurses as they related to staff nurses' job satisfaction, their experienced meaningfulness of work, their health complaints, and the frequency of their absence. Social leadership is an employee-oriented style and instrumental leadership is a task-directed style. The results showed that social leadership had a positive relationship with job satisfaction and meaningfulness and a negative relationship with health complaints. When considering the combination of effects of both leadership styles on performance levels, job satisfaction was highest if the head nurse highly performed in both styles, whereas health complaints and meaningfulness were not affected by the combinations. Furthermore, preference for autonomy was studied as a moderator of the relationship between leadership style and nurses' health complaints. Instrumental leadership resulted in higher satisfaction for nurses who did not have much need for autonomy and resulted in more health complaints for nurses with more need for autonomy. This study shows that a leader may utilize different leadership styles depending on the characteristics of followers with the result of different outcomes.

The leadership style of nurse managers is related to staff nurse retention. Taunton, Boyle, Woods, Hansen, and Bott (1997) studied the relationship among nurse manager leadership styles, the characteristics of the organization, the work itself , and nurses, and

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staff nurse retention in 95 middle nurse managers and 248 staff nurses who were working in 4 urban hospitals. Findings showed that the nurse manager leadership characteristic, which is concerned with staff nurses' working conditions and their involvement, had a statistically significant positive correlation ($r = .20$, $p < .01$) with staff nurse retention and was an important predictor of retention.

Findings from the study by Boumans and Landeweerd (1993) and Taunton et al. (1997) suggest that the setting structure of nurse manager leadership behavior results in positive provider outcomes of staff nurse retention because of their concern for the staff nurses' working conditions and their valuing of staff involvement. This leadership behavior results in staff nurses' satisfaction in their job and the enhanced desire to be in their profession, as evidenced by other studies (Cavanagh & Coffin, 1992; Pierce, Hazel, & Mion, 1996). However, the relationship between nurse manager leadership competency for clinical and administrative issues and staff involvement in decision making is not known.

Leadership competency. The term competent means " having requisite or adequate ability or qualities; having the capacity to function or develop in a particular way." (Merrian Webster's Collegiate Dictionary, 1996, p. 234). Thus, leadership competency implies the adequate ability of leaders to influence other people to accomplish the goals of an organization. The abilities are "not only knowledge and psychomotor abilities, but also attitudes and cognitive skills such as problem solving" (Schneider, 1979, p. 12).

Leadership competencies have been described by many authors. Bennis and Nanus (1986) identified four leadership competencies: attention through vision, meaning

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through communication, trust through positioning, and developing positive self-worth. Attention through vision is to create vision and encourage people to work toward the vision by bringing about their self-confidence to perform necessary acts. Meaning through communication is to communicate visions with others to make it clearly understood and accepted by others. Developing trust among personnel maintains organizational integrity, which leads to an effective organization. Leaders develop their positive self-worth by recognizing their strength and compensating for weakness, continuously developing and improving their skills, and recognizing the fit between their strengths and weakness and the organization's needs.

Kouzes and Posner (1988) described five leadership competencies common to successful leaders: challenging the process, inspiring a shared vision, enabling others to act, modeling the way, and encouraging the heart. Leaders challenge the process by taking risks, innovating, experimenting, treating every job as an adventure, approaching stress positively, and learning from their mistakes. Inspiring a shared vision is to help others to share the mission and goals of the organization and to enlist people in the vision. Leaders enable others to act by encouraging collaboration, building teams, and empowering others. These strategies make others feel strong, capable, and committed, which lead to achieving the desired results of the organization. To model the way to work, leaders set high standards, provide the example, and are an example of those values to others. Encouraging the heart is to provide active encouragement and support for others by individual recognition and group celebration of accomplishments.

Manfredi (1996) described leadership competencies as including achieving goals, coping with change, influencing staff, controlling resources with power, stimulating the

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growth and development of staff, mentoring staff, and creating a vision. A leader is responsible for motivating, facilitating, and encouraging their staff to achieve common goals. A leader is a change agent coping with change by emphasizing participation and cooperation of staff. To influence other people, a leader builds trust relationships, persuades, and communicates with others. Power is the capacity of a leader to control resources and influence others. A leader is also responsible for stimulating the growth and development of the staff by mentoring, coaching, and guiding them. Creating and communicating visions to staff provide an understanding of the future state of an organization and lead to a success of that organization.

Among these descriptions, the common element of leadership competencies that enhance personnel participation in decision making is developing trust among them. A trusting relationship between nurse managers and their staff encourages staff to talk about their ideas and concerns (Badzek & Cober, 1996). Another competency described by Manfredi (1996) which is important in enhancing staff participation in decision making is stimulating the growth and development of the staff. The mentoring and developing roles of nurse managers have been emphasized in the literature and are believed to enhance staff involvement in decisions on the unit (Aroian et al., 1996; Aroian et al., 1997; Darling, 1985a).

Other competencies of nurse managers were explored by Stahl et al.(1983). They found that the activities of head nurses, as a first-line nursing manager, included human resource management activities, operational management activities, and patient care management activities. Human resource management activities included activities such as planning observations of all staff members and approaching staff directly to solve

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problems in work. Operational management activities were such activities as meeting with nursing administrators for feedback, solving problems, and participating in budget planning. Patient care management activities were, for example, utilizing nursing process in patient care, coordinating all patient care activities, and communicating with physicians. The findings of this study provide support that nurse manager competencies include clinical competency (patient care management activities) and administrative competency (human resource management and operational management activities). Clinical competency is used for mentoring staff nurses in patient care activities, whereas the human skills help to develop their staff. Mentoring and developing are important responsibilities of a nurse manager in which nurses are guided, taught, and assisted in job performance and career development (Darling, 1985a; Darling, 1985b). These two competencies provide opportunities for staff nurses to participate in decisions related to patient care and conditions of work environment.

Dunham and Fisher (1990) explored the attributes of nursing leadership in 85 hospital nurse executives. Taped interviews in person or by phone were used to collect the data. The nurse executives reported the leadership attributes as follows: 1) having adequate educational background, business skills, and clinical expertise; 2) creating an autonomous practice environment; 3) integrating nursing as a part of the organization and working for its goals; 4) having negotiation and communication skills; and 5) being creative, as well as having a vision and motivating other people to make the vision a reality. Although these leadership characteristics are expected to belong to nurse executives, they should be also part of nurse managers who are leaders and who influence other personnel to accomplish organizational goals.

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Dubinicki and Sloan (1991) conducted a pilot study to explore the administrative competencies of nurse managers by using structured individual interviews. Four nurse managers were interviewed to identify their performance over the past two years; the nursing directors, to whom the nurse managers reported, completed a questionnaire asking respondents to rate the importance and frequency of performing 100 managerial behaviors. The nurse managers' interview resulted in competencies which were grouped into nine categories: 1) directing others; 2) self-confidence; 3) the use of influence strategies; 4) interpersonal sensitivity; 5) initiative; 6) group management; 7) achievement orientation; 8) direct persuasion; and 9) analytical thinking. The data derived from nursing directors were then analyzed, and a ranking of 20 competencies was obtained. Five of these first ten competencies were consistent with those derived from nurse managers. These competencies were in the areas of achievement orientation, interpersonal sensitivity, group management, initiative, and analytical thinking. Dubinicki and Sloan described group management as a competency of reducing conflict among members, promoting cooperation and teamwork, and treating members equally. This competency may enhance nurses' participation in decision making because it gains for them more acceptance, trust, and respect from their colleagues; nurses are, then, seen as a more vital part of the decision making process.

Based on Katz' s classification, Chase (1994) explored the managerial competencies of 211 American Organization of Nurse Executives (AONE) nurse managers by distributing a mailed questionnaire. The questionnaire consisted of 53 competency statements and demographic questions. The managerial competencies were organized into five categories: technical, human, conceptual, leadership, and financial

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management. The researcher found that the skills necessary for nurse managers were knowledge of and ability to perform effective communication and decision making, problem solving, counseling, staffing, conflict management, performance evaluation, teamwork organizing, and delegation.

These studies demonstrated the scope of competencies for nurse managers for clinical and administrative practice. Competencies in clinical issues included abilities to manage patient care activities based on clinical expertise (Stahl et al., 1983). Although nurse managers do not directly provide care to patients, they facilitate the provision of quality care such as promoting primary nursing care and managing nursing resources to be appropriate for patient care workloads and the maintenance of quality (Fullerton, 1993). Nurse managers provide clinical assistance and consultation (Marrelli, 1997). Therefore, their clinical competency is an important part of their competency as a resource person. Administrative competency includes the ability to perform human and conceptual skills such as interpersonal communication, group management, creating autonomous practice, and influencing others to achieve goals of the organization (Chase, 1994; Stahl et al., 1983). In this respect, nurse manager competency in administrative issues involves strategies that enhance staff nurses' participation in decision making.

In summary, leadership is a competency of nurse managers and serves as an input or structure of an organization that enhance staff nurses' participation in decision making. The literature provides evidence of the relationship between nurse manager leadership and outcomes of nurses and also provides evidence of the influence of nurse manager leadership competencies on staff nurses' participation in decision making. However, no studies investigate the relationship between nurse manager leadership competencies and

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staff nurses' participation in decision making. The current study demonstrates this relationship.

Setting Process: Nurse and Physician Collaboration

Collaboration, or the ability to work together towards a shared goal and to participate in mutually respectful professional relationships, has been the focus of much attention in the nursing literature. In the collaboration process, communication, cooperation, decision making, and mutual respect take place (Evans & Carlson, 1992), and individuals view themselves as team members and contribute to a common goal (Henneman, Lee, & Cohen, 1995). Hence, collaboration enhances an individual's participation in decision making in order to accomplish mutual goals. Collaboration between nurses and physicians is an interdependent relationship between two disciplines for optimal patient care. (Evans & Carlson, 1992). The relationship between nurses and physicians is an issue related to social and cultural factors, as well as to personal and organizational elements.

Power relations and the socialization of gender are among the sociocultural factors that impede collaboration between these two disciplines. Morgan and McCann (1983) discussed the traditional relationship between nurses and physicians and the differences between the two disciplines. Physicians have often viewed nursing as an extension of medicine and nurses as subservient to physicians, the majority of whom have been men. The differences in terms of gender majority, educational level, income, and role and degree of responsibility make physicians dominant in the health care arena (Morgan & McCann, 1983). Campbell-Heider and Pollock (1987) confirmed the popular image of interactions between nurses and physicians. Historically, physicians have been

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perceived as having the dominant role in health care, whereas nurses are perceived to have passive roles and rely on the physician for decision-making, despite a high degree of competence in their clinical practice.

In 1972, the American Medical Association (AMA) and the American Nurses' Association (ANA), recognizing the potential benefits of positive collaboration on provider and patient outcomes, joined together to established the National Joint Practice Committee (NJPC) in order to make recommendations for nurse-physician relationships (Morgan & McCann, 1983). Since that time, a body of work has been established which examines the components of collaboration and demonstrates the effects of collaboration on patient care and job satisfaction. The following literature is representative of the attempt to change this traditional behavior and to develop a collaborative relationship between nurses and physicians in which nurses have greater autonomy and self-confidence in their involvement in patient care and condition of work decisions.

Definition and characteristics of nurse-physician collaboration. Weiss and Davis (1985) defined nurse-physician collaboration as "interactions between nurse and physician that enable the knowledge and skills of both professionals to synergistically influence the patient care being provided" (p. 299). Trust and respect are common characteristics in the collaboration process (Coluccio & Magurie, 1983; Pike et al., 1993; Sebas, 1994; Weiss & Davis, 1985). This process provides information to increase the understanding of patients and to improve the effectiveness of care planning and implementation.

Based on a two-dimensional model of conflict behavior, collaboration has been conceptualized as the combination of the two dimensions of assertiveness and

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cooperativeness (Ruble & Thomas, 1976). Assertiveness is defined as "a party's attempt to satisfy his own concerns" (p. 144). Cooperativeness is defined as "attempts to satisfy the concerns of the person" (p. 144). Collaboration can be seen as a balance between these two dimensions and as a strategy to solve conflict problems, resulting in satisfaction for both sides (Ruble & Thomas, 1976).

The American Nurses Association (ANA)(1980) defined collaboration as a true partnership with four characteristics: 1) the power of people involved in the partnership is valued; 2) the practice spheres of both sides are respected, recognized, and accepted; 3) the mutual concerns of both sides exist; and 4) common patient goals are recognized. As being respected, recognized, and accepted, an individual feels comfortable to participate in decision making during the collaboration process to accomplish a common goal.

Mauksch (1981) described four nursing behaviors that are necessary for collaboration with physicians: risk taking, assertiveness, autonomous intervention, and accountability. Risk taking is the behavior in which nurses build a collaborative relationship with physicians that is not the traditional nurse behavior. Assertive nurses present themselves and their competence, express self-worth and professional value, and want to put forth their ideas about patient care. Autonomous intervention occurs when nurses have greater frequency to assess patient problems and design interventions based on the assessment. Nurses who have accountability are interested in the patient's needs (Mauksch, 1981). Evans (1994) described the critical elements of collaborative practice as including coordination, collegiality, communication, self-esteem, education, and empowerment. Norsen, Opladen, and Quinn (1995) also described six key elements of collaborative practice and stressed the importance of trust, which unites the elements.

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These elements include cooperation, assertiveness, responsibility, communication, autonomy, and coordination. Without trust, these elements either do not occur or become threatening. The characteristics of assertiveness and being autonomous in the collaboration process enable nurses to become involved in patient care decisions with physicians and other health personnel by sharing patient information and patient care planning based on their knowledge and clinical expertise.

In summary, nurse and physician collaboration is a process of working together between the nurse and physician in which they trust and respect the knowledge, skills, value, and contributions of each profession in order to accomplish the shared goal of quality patient care. Collaboration requires many attributes. The attribute of assertiveness and cooperativeness were used as underlying concepts of the instrument measuring nurse and physician collaboration (Weiss & Davis, 1985), which was used in the current study.

Factors contributing to nurse-physician collaboration. Devereux (1981) proposed five requirements in relation to nurse-physician collaboration: individual clinical competence, the legality of increased independence, the development of assertive nurses, perception of nursing role, and clinical responsibility of nurses. A lack of these factors results in a limitation of scope for the nursing practice, less confidence, misinterpretation of the nursing role, and inadequate clinical responsibility. These results limit the collaboration between nurses and physicians.

Alt-White et al. (1983) studied the effect of personal, organizational, and managerial factors related to nurses in nurse-physician collaboration and also the relationship between nurse satisfaction and nurse-physician collaboration in 466 nurses from critical and non-critical care patient units. Personal factors included levels of

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education and years of experience. Organizational factors were primary nursing and types of unit (critical or non-critical care). Managerial factors were identified as communication processes between professionals and organizational stress. The researchers found that there were no statistically significant relationships between collaboration and educational background, and nurses with greater experience collaborated less with physicians ($r = -.09$, $p < .05$). Primary nursing had a significant positive relationship with collaboration ($r = .16$, $p < .001$). Nurses in critical care units demonstrated more collaboration than those in non-critical care units (standardized M = .20 for critical care unit; standardized M = .11 for non-critical care unit). Managerial factors including open communication, administrative support, and most methods of coordination were positively related to collaboration. Nurse satisfaction was significantly positively related to nurse-physician collaboration ($r = .26$, $p < .001$). The researchers claimed that their findings of nurses' work satisfaction may have two explanations. First, collaboration may directly lead to satisfaction, or it may enhance job performance, and in this way cause satisfaction. In addition, nurses who are more satisfied in their work will be more likely to collaborate with physicians. The explanation of collaboration resulting in nurses' job satisfaction by improving job performance suggested that collaboration between nurses and physicians improved the relationship between both disciplines and that nurses were more respected by physicians and had more involvement in patient care decisions. Hence, nurses could provide more effective patient care and were satisfied in their work. However, the description of the questions asked to measure collaboration and the value of significant correlation was not presented.

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In addition to levels of education and years of experience as personal factors affecting the collaboration between nurses and physicians, Davidhizar (1993) stated that nurses' self-confidence is an important factor that helps nurses to develop successful collaborative relationships. Without self-confidence, nurses cannot establish collaborative relationships with other professionals and are not comfortable in their role (Davidhizar, 1993); thus, participation in decisions related to caregiving and work conditions may not occur. Nurse managers have an important role in promoting staff nurses' self-confidence. Davidhizar (1993) also proposed some strategies to build self-confidence including developing skills and expertise, using consultation model, supporting certification by providing the opportunities and resources, involving nurses in decision making, promoting autonomy, respecting interpersonal communication, and creating a positive image of the nursing profession. Nurses developed their self-confidence through these strategies because they have significant knowledge and abilities, are respected, and have value in practice. Thus, when nurses have more self-confidence, they have great collaboration with physicians. In collaboration with physicians, nurses are in a position to have greater information about the plan of care and, thus, opportunities for greater participation may ensue.

The nature of the relationship between physicians and nurses has an impact on their collaboration as evidenced by the following study. Jones (1994) investigated the nature of nurse-physician collaboration, using the indicators of collaboration defined by the American Nurses Association (1980). Power-control was investigated by using a nurse and physician communication scale developed by the researcher. Practice spheres were measured by a practice spheres checklist to determine the agreement for respect,

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recognition, and acceptance of perceived separate and combined practice spheres. The checklist contained 10 spheres that addressed assessment, diagnosis, prescription of treatment or drugs, performance of surgery, execution of treatment, provision of psychosocial support, referral prevention, and health education. Subjects responded to the checklist by classifying the practice spheres performed by either nurse or physician, or nurse and physician joining together. The degree of agreement on individual and common patient goals was measured by a checklist containing 24 goals regarding psychological and physical aspects of care. Subjects responded to the goal checklist in the same manner as the practice spheres checklist. Mutual concerns were measured by an adaptation of the Collaborative Practice Scales of Weiss and Davis (1985). The results showed that both nurses and physicians reported that physicians initiated more communication than did nurses. Forty percent of the nurses preferred competition, compromise, or accommodation as a method of collaboration. These findings suggest that behaviors of physicians and nurses influence their collaboration. Theoretically, greater collaboration provides the setting for greater participation in decision making, yet the extent of this relationship is unknown.

Norsen et al. (1995) summarized the organizational and personal components that promote collaboration. These components include administrative support, integrated documentation, interdisciplinary rounds, joint clinical research, clinical competence and the credibility of collaborators.

In a qualitative study, Baggs and Schmitt (1997) surveyed 10 intensive care unit nurses on the nature of their collaboration with physicians via a 30-60 minute semistructured interview. The nurses reported that the core process of collaboration was

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working together as a team, in which they focused on patients, shared information and communication and showed respect for each other. When the setting supports collaboration, greater decision making should occur. Yet, how collaboration may influence participation in each phase of decision making for two kinds of decisions is unknown.

In general, then, collaboration has been viewed as a multi-dimensional concept. It is related to personal characteristics of the nurse, organizational features that facilitate or support respectful interactions, and the interactions among the factors. When collaboration between nurses and physicians occurs, it enables nurses to participate with other health care personnel and patients in decision making.

Effects of nurse-physician collaboration. Collaboration between nurses and physician results in positive outcomes of patients, staff, and settings. Koerner et al. (1986) implemented a collaborative practice model in a medical unit and compared it to another medical unit with a traditional team nursing system. The collaborative approach consisted of the following strategies: using a primary nursing system, creating unit-based joint practice committees, implementing the integrated patient record and the joint record review, and increasing nurse decision making. The program evaluation was derived from a questionnaire on the attitudes of physicians and nurses, which was used to measure their perceptions of the impacts of collaborative practice before and after the implementation of the model. After implementing the collaborative practice, both professional groups reported to be more satisfied in their jobs, physicians perceived the differences between professional and technical nursing practice, nurses had greater autonomy and more decision making, and communication among nurses, physicians, and

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families was improved. However, no statistical data were reported in this article. This study supports the influence of nurse-physician collaboration on nurses' involvement in decision making, particularly in patient care decisions. Yet, the relationship between collaboration and each phase of decision making for both patient care and conditions of work environment is unknown.

Mitchell et al. (1989) found that critical care units characterized by a high perceived level of nurse-physician collaboration and participation in decision making had desirable clinical outcomes, such as low mortality rate and patient satisfaction and desirable organizational outcomes such as positive organizational climate and morale. This study provides evidence of the structure, process, and outcome framework. However, the relationship between nurse-physician collaboration and staff nurse participation in decision making has not been tested empirically.

Baggs and Ryan (1990) explored the relationship between collaboration and satisfaction with specific patient care decisions in 68 registered nurses in a medical intensive care unit. The instrument, the Decision About Transfer (DAT) scale, measured the extent of collaboration and satisfaction with respect to the decision of transferring patients out of the ICU. The scale had one item which asked about the overall collaboration with physicians and one item which asked about satisfaction of nurses, rated by a Likert scale that ranged from 1 (no collaboration, not satisfied) to 7 (complete collaboration, fully satisfied). Collaboration in general practice, not specific to transfer decisions, was measured by the Collaborative Practice Scale (CPS). In this study, the alpha coefficient of the scale was .83. Nurses' satisfaction with elements of their work, including autonomy, pay, nursing interaction, physician-nurse interaction, task

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requirements, organizational policies, and professional status, was measured by the Index of Work Satisfaction (IWS). The results showed no significant correlations between general collaborative practice (CPS) and overall work satisfaction (IWS). However, nurses with more experience and more education tended to report more collaboration but had less satisfaction with their work. Using hierarchical multiple regression analysis, the results showed that the interaction of age and collaboration added significant changes in the Autonomy subscale of the IWS; collaboration, age, and their interaction accounted for a significant amount of the variance in the autonomy (F ratio = 2.953, p = .039). In other words, this result indicated that greater collaboration was associated with increased work satisfaction in autonomy and organizational policies for nurses who were younger and had less experience. Collaboration in the decision making process about patient transfer was significantly correlated with nurse satisfaction (r = .67, p < .05).

Baggs et al. (1992) examined the relationships between nurse-physician collaboration and negative patient outcomes (when controlling for severity of patient illness); and between collaboration and provider satisfaction with the decision to transfer patients from an intensive care unit to a less intense care unit. The sample consisted of 56 registered nurses and 36 medical residents working in a medical intensive care unit. Negative patient outcomes were either readmission to the ICU or death during the same hospital admission. These outcomes have been used in other studies, which found that they were associated with the quality of decision making about transfer patients from the ICU (Franklin & Jackson, 1983; Rubins & Moskowitz, 1988). Similar to the earlier work of Baggs and Ryan (1990), collaboration and satisfaction were measured by the Decision About Transfer (DAT). Severity of illness was a control variable influencing patient

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outcomes and measured by the Acute Physiology and Chronic Health Evaluation (APACHE II). Perception of alternative choices for the decision, as another control variable, was measured by asking nurses and physicians how much they agreed or disagreed with transferring a patient as soon as possible without considering alternative choices. The results, as reported by nurses, indicated that when nurses had greater collaboration with physicians, the incidence of patient readmission or patient's death decreased. Collaboration had greater effects on these patient outcomes when nurses perceived having more alternative choices. In addition, collaboration was significantly associated with satisfaction for both physicians ($r = .26$, $p < .001$) and nurses ($r = .67$, $p < .001$). Findings of this study support the relationship between setting process and setting and provider outcomes. However, the relationship between the setting process of nurse-physician collaboration and the provider process of nurses' participation in decision making has not been clarified.

Kearnes (1994) retrospectively studied the effects of collaborative practice between a nurse practitioner and physician on length of stay, timeliness of discharge planning, and the number of treatments in 142 frail elderly patients who were discharged from a health service setting to retirement homes or nursing homes. The patients were divided into two groups. The study group consisted of 110 patients who were followed by physicians and nurse practitioners. The control group was a convenience sample of 31 patients who were followed by a physician only and matched with the study group by age and place of residence after discharge. The data were collected by reviewing charts and counting the number of treatments and tests. The findings indicated that length of stay, timeliness of discharge planning, and number of some treatments of the patients who

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were followed by physicians and nurse practitioners were lower than the patients followed by physicians only. This finding suggests that when nurses and physicians collaborate, better outcomes occur. It is theoretically presumed that greater exchange of information results in greater involvement in the decision making process. However, the relationship between collaboration and each phase of decision making, an intermediary process, to outcomes cannot be evaluated until there is clearer understanding of the relationship between collaboration and decision making.

In a study by Wood (1995), a collaborative practice model was implemented in a community hospital. The collaboration approach included strategies, which enabled nurse case managers and physicians to work together: developing clinical pathways, teaching patient records, and having an effective communication system. Since implementation, physicians had been more satisfied with the quality of care and the case managers' competency, and the case managers were more satisfied in their job and better understood their roles and responsibilities. Thus, communication between nurses and physicians was improved.

Lassen et al. (1997) studied the effects of a collaborative approach in a well-baby nursery on the number of patient admissions with diagnosis of R/O sepsis, length of hospital stay, number of doses of antibiotics received, hospital costs, and number of readmissions. Nurses collaborated with physicians regarding the diagnosis of risk factors and symptoms of sepsis in the newborn (septicemia neonatorum). The effects of the collaborative practice were evaluated one year after the study period and compared with the year before the study period. Following implementation of the collaborative protocol, the number of patients with R/O sepsis diagnosis, the number of patients treated with

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antibiotics, the length of stay, and hospital costs decreased. Baggs and Schmitt (1997) also found the positive outcomes of collaboration including improved patient care (because nurses and physicians could provide rapid care and gather information from different perspectives); increased job satisfaction; increased learning experience in patient care; and improved controlling of costs (because collaboration saved time in solving patients' problems and decreased nurse turnover).

Higgins (1999) conducted a prospective correlational study to examine the relationships between nurses' perceptions of collaborative nurse-physician transfer decision making and patient outcomes and nurses' satisfaction with the decision making process. The sample consisted of 42 medical intensive care nurses and 175 patient transfer decisions. The nurses were asked to respond to a questionnaire including demographic data and the Decision About Transfer (DAT) scale. The DAT measures nurses' perceptions of nurse-physician collaboration in making transfer decisions, in assessing task complexity, and in overall satisfaction with the decision making process. Patient outcomes were collected from charts and computerized databases. The Acute Physiology and Chronic Health Evaluation (APACHE III) was used to measure the severity of illness of intensive care patients; its scores were used to adjust for patient risk. The findings showed that nurses' perceptions of collaboration had a statistically significant positive correlation ($r = .28$, $p < .001$) with nurses' satisfaction with the decision making process about decisions to transfer. By using hierarchical logistic regression analyses, the results demonstrated that nurses' perceptions of collaboration were not a significant predictor of patient outcomes. The analysis also showed that

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decision task complexity and the nurses' years of critical experience did not significantly moderate the contribution of nurses' perceptions of collaboration to patient outcomes.

In conclusion, these studies showed that nurse-physician collaboration in general improved the quality of patient care and increased job satisfaction. Nurse-physician collaboration, as a setting process, may not have direct effects on these outcomes. It provides nurses with a perception of greater autonomy, greater assertiveness, more self-confidence, professional respect, and a willingness to cooperate with physicians to accomplish a common goal of quality patient care. This motivates nurses to participate in patient care decision making. Active participation in patient care decisions then enables nurses to better understand patient problems and medical and nursing interventions. This increased understanding of patient needs and appropriate interventions can then also be useful in enabling the nurse to participate in decisions related to conditions of work, such as planning for staffing to be appropriate for patient's conditions, choosing new equipment and supplies, and planning for in-service education programs. Although there is some consistency in these findings among studies, the degree of participation in each phase of the decision making process of nurses, the extent of their collaboration, and the specific measurement of their cooperativeness and assertiveness were not included in these studies.

Summary

The issue of quality of care related to the relationship between structure, process, and outcome has been discussed for many years. The relationship between process and outcome has been investigated in many studies, whereas the relationship between structure and process and the effect of setting process on provider process are limited.

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Because the health care system has been changed due to increasing patient needs, technology advancement, and decreased financial resources, nurses' responsibilities have also increased and become more complex. Structure and process of care have to be redesigned to achieve quality outcomes in patient care. The participation in decision making of staff nurses is a process of care that has been studied to examine the relationship with patient, provider, and setting outcomes. Decision making is a process of reaching a conclusion through phases defined as identification, design, and selection. Yet, only few studies examined the influence of organizational factors on participation in phases of decision making. Nurse manager leadership competency and nurse-physician collaboration are organizational factors that tend to enhance staff nurses' participation in decision making. No empirical evidence showed the relationships between these two factors and staff nurses' participation in decision making. The current study provides initial evidence by exploring whether nurse manager leadership competency, as perceived by staff nurses, and nurse-physician collaboration influence staff nurses' participation in decision making.

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CHAPTER III

Methodology

The purpose of this study was to investigate the relationships among staff nurses' participation in three phases of the decision making process related to participation in caregiving and condition of work decisions, nurse manager leadership competencies, and nurse-physician collaboration. In this chapter, a description of the research design, sample and setting, power analysis, research questions/hypotheses, variables and measurements, protection of human subjects, data collection procedure, data management, and data analysis are presented.

Design

The design of this study was a non-experimental cross-sectional correlational descriptive design aimed at examining the relationships among participation in decision making, nurse manager leadership competencies, and nurse-physician collaboration. The current study was a secondary analysis of the VNPM study (Anthony, 1998).

The purpose of the Variations in Nursing Practice Model study was to investigate the characteristics of hospital-based nursing care delivery by developing and validating a mathematical model or index of the structural and contextual factors of professional nursing practice. The study used the Multi-Attribute Utility Theory (MAUT), which is a strategy to quantify human judgement into a mathematical function. Using a snowball sampling strategy, five registered nurses were selected as expert panelists to participate in a two day model-building session to identify factors that comprise nursing practice models (NPM). Twenty-four attributes were derived from the experts and grouped into two levels based on the abstractness of the attributes. Higher order attributes (more

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abstract) include continuity of care, participation in management, collaboration, leadership, learning environment, nurse's role, staffing, communication, specialization, orienting floats, and group commitment. The first eight attributes had two to four lower order attributes. Following the identification of the attributes and using the methods specified by MAUT, each attribute was ranked and weighted by the expert panel. Weights were normalized so that they summed to 1. After the identification of the attributes, the experts were asked to develop the utility scales for each attribute. Utility scales are the values that each attribute can take on (Edwards & Newman, 1982). A composite scale or index of nursing practice was then computed by summing the normalized weights for each attribute by its normalized utility, which represented the best and worst options for that attribute.

The initial validation of the nursing practice model consisted of evaluating the association between the experts' rating of 41 hypothetical nursing units' profiles developed by the research team and the computed scores obtained from the created nursing practice model index. The second validation was a field validation conducted in three metropolitan hospitals to evaluate the correlation between the NPM index and nurse surveyors' global judgements about the nature of the unit's nursing practice and between the NPM index and the outcomes of the nurse, patient, and organization. Participation in decision making, job involvement, job authority, nurse-physician collaboration, and professionalism were evaluated as correlates of the NPM model. Data for the current study were obtained from the second validation.

In the current study, the attribute of unit manager leadership competency was conceptualized as a structure of the setting, and nurse-physician collaboration was

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conceptualized as a setting-process factor in Holzemer's Outcomes Model for Health Care Research (Holzemer & Reilly, 1995). Both factors were hypothesized to influence the extent of staff nurses' participation in caregiving and condition of work decisions, which was conceptualized as a provider-process factor. All of these variables were measured on an individual level of analysis. Therefore, the unit of analysis was the nurse, not the hospital or unit.

Sample and Setting

Data from the VNPM study was collected from registered nurses who were working on 28 medical and surgical units that provide care for adult patients in three hospitals in Cleveland; two hospitals were urban tertiary and one hospital was suburban community. The units in each hospital were selected based on convenience. The selection resulted in 11 units for hospital one, eight units for hospital two, and nine units for hospital three. Six hundred and forty-seven questionnaires were distributed to all registered nurses and 306 questionnaires were returned. The response rate was 47%. In the primary study, eight subjects had missing data on more than 10 attributes and they were deleted. Therefore, the total sample for the current study was 298 registered nurses, which was a usable response rate of 46%.

In the current study, only staff nurse responses for participation in decision making, perception of nurse manager leadership competencies, and collaboration with physicians were explored. Therefore, nineteen registered nurses who had partial administrative role responsibilities, were excluded from the study sample. These nurses were six assistant head nurses, five patient care coordinators, three clinical specialists, and five clinical coordinators. The final sample for this secondary analysis consisted of

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279 full-time nonsupervisory registered nurses (a response rate of 43%), who provided direct patient care as a primary function.

Power Analysis

The power of a statistical test is the probability of achieving statistically significant results (Cohen, 1988) --that is, the probability of accepting that the relationship between variables exists. It is the complement of Type II error. Type II error or Beta (β) occurs when the researcher falsely accepts a null hypothesis which is not true (Cohen, 1988). Power analysis is used in two ways: 1) for calculating sample sizes to achieve significant results and 2) for determining the power of statistical test in a study. For the current study, power analysis was used to determine if the sample size was great enough to achieve adequate power of statistical test. Three components are needed in power analysis: significance level, sample size, and effect size. These components and the calculation of power are described below.

Significance level. The significance level reflects the chance of making a Type I error. Type I error occurs when the researcher falsely rejects a true null hypothesis which states that no relationship between the variables exists (Cohen, 1988). Statistical power increases when Type I error is higher. That is, the less stringent criteria of rejecting a null hypothesis, the more probability that the relationship between variables exists. The level of significance is referred to as "alpha." The conventionally accepted level of alpha is .05 (Beck, 1994; Polit & Sherman, 1990). An alpha of .05 means that the researcher will wrongly reject the null hypothesis when it should be accepted only 5 times out of 100, or that there is a 5% chance of rejecting a true null hypothesis.

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Sample size. Larger sample sizes increase the statistical power because of decreasing the probability of accepting the false null hypothesis (Cohen, 1988). Sample size in this present study is 279 full-time nonsupervisory registered nurses.

Effect size. Effect size is the degree to which the relationship between the independent variable and the dependent variable is present (Cohen, 1988). In this current study, effect size is the amount of explained variance in staff nurses' participation in decision making accounted for by nurse manager leadership competencies and nurse-physician collaboration. Higher effect sizes increase power and decrease necessary sample size (Cohen, 1988). Effect size can be obtained from prior studies investigating similar hypotheses with similar populations and instruments and from pilot studies. Anthony (1999) conducted a similar study that investigated the relationship between structure and process. The purpose of Anthony's study was to determine the total amount of variances in staff nurses' participation in the identification, design, and selection phase for caregiving and condition of work decisions explained by decentralization and staff nurses' expertise. Participation in decision making was conceptualized as a process; decentralization and expertise were conceptualized as administrative and professional dimensions of structure. The results showed that decentralization and expertise explained 4% of variances in both the design and selection phases for caregiving decisions and 5%, 6%, and 8% of variances in the identification, design, and selection phases, respectively, for condition of work decisions. For the identification phase of caregiving decisions, there were no explained variances and effect size was zero. Therefore, the effect size ranged from .04 to .08. The estimated effect size for regression analysis for the current study was based on the average of effect sizes found in Anthony's study that is .06. Thus,

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the explanatory power was low and it could not be interpreted as practically meaningful to nursing administration practice (Anthony, 1999). However, it supports that the relationship between structure and process exists. For secondary analysis, the sample size was known; effect size was used to estimate statistical power.

To estimate the statistical power for this current study, Cohen's (1988) power table for multiple regression was used. In the table, significance level (α), number of independent variables (u), degree of freedom (v), and noncentrality parameter of the noncentral F distribution (λ or lambda) were needed. Degree of freedom was 275 (279 – 3 - 1) obtained by using Cohen's (1988) formula: N – u - 1. Lambda was obtained by using Cohen's (1988) formula: $\lambda = N \times f^2$. Thus, the value of λ was 16.74 (279 × .06). When $\alpha = .05$, $u = 3$, $v = 275$, and $\lambda = 16.74$, the value of power was approximated at .85, which is an acceptable range.

Research Questions/Hypotheses

Research question 1. What are the relationships among hospital staff nurses' participation in the identification, design, and selection phases of decision making related to caregiving and condition of work decisions, nurse manager leadership competencies for clinical and administrative issues, and nurse-physician collaboration?

Hypothesis 1: There will be a positive correlation between the scores of nurse manager leadership competencies for clinical and administrative issues and the scores of staff nurses' participation in the identification, design, and selection phases of decision making related to caregiving and condition of work decisions.

Hypothesis 2: There will be a positive correlation between nurse-physician collaboration scores and the scores of staff nurses' participation in the identification,

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design, and selection phases of decision making related to caregiving and condition of work decisions.

Research question 2. To what extent do nurse manager leadership competencies for clinical and administrative issues and nurse-physician collaboration explain variation in levels of staff nurses' participation in the identification, design, and selection phases of caregiving and condition of work decision making?

Hypothesis: Nurse manager leadership competencies for clinical and administrative issues and nurse-physician collaboration explain staff nurses' participation in the identification, design, and selection phases of decision making related to caregiving and condition of work decisions.

Variables and Measurements

Demographic information.

Demographic data was collected by questionnaire and included age, years in practice as RN, basic level of nursing education, and highest level of education.

Dependent variables:

Participation in decision making.

Decision making was defined as the cognitive process (Ellis & Hartley, 1991) of reaching a conclusion after analyzing a set of premises (Grohar-Murray & DiCroce, 1992). Decision making involves sequential stages beginning with identifying the problem through selecting the final choice (Charns & Schaefer, 1983; Gibson, Ivancevich, & Donnelly, 1991; Mintzberg et al., 1976; Janis & Mann, 1977; Simon, 1977). Theoretically, participation in decision making was viewed as a performance activity attempting to achieve organizational goals (Radford, 1975).

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"Participation in decision making is concerned with the type of decision, who makes the decision, and the extent of participation" (Anthony, 1999, p. 390).

In the current study, staff nurses' participation in decision making is "the extent nurses have a say in shaping two kinds of decisions that are directly associated with their work as patient care providers and with their work environment" (Anthony, 1995, p. 3). This participation was measured by the Participation in Decision Activities Questionnaire (PDAQ), developed by Anthony (1997, 1999). The questionnaire consists of a caregiving subscale and a condition of work subscale. The caregiving subscale consists of 12 scenarios reflecting decisions about problems occurring in an individual patient's care (Anthony, 1997). The condition of work subscale consists of 11 scenarios of decision activities related to the clinical practice environment or which affect groups of patients (Anthony, 1997). For each scenario, nurses were asked to indicate the extent of participation in identification of the problem (raising the issue and clarifying the problem), design (generating and evaluating alternatives), and selection (selecting among alternatives). Each phase of each decision activity was scored from 1 to 6, where 1 = no participation and 6 = a great deal of participation. Scores were summed and averaged into a single mean score for each phase. Higher scores indicated greater participation in decision making.

The items in the PDAQ were adapted from decision activities developed by Blegen et al. (1993) and consisted of 21 patient care and 21 unit operation decision activities. In the study of Blegen et al. (1993), nurses were asked to rate their desired level of involvement on the 42 decisions. The responses were categorized into three categories based on whether nurses agreed they should have independent authority,

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shared authority, or whether they disagreed on the level of their authority. The decision activities for the PDAQ were chosen in order to have the highest within-subject variation and be representatives of the three categories of decisions; the decision activities, which were selected, did not overlap and were not redundant (Anthony, 1997). On the PDAQ, the selected items of patient care activities were defined as caregiving decision activities, and unit operation decision activities were defined as condition of work decision activities. These decision activities on the PDAQ were constructed as scenarios related to decision situations that nurses working on medical and surgical units would encounter in their practice.

The content validity of scale was established by giving the scenarios to three expert nurses (Anthony, 1997, 1999). Revisions to the scenarios were based on the experts' comments and were mainly editorial or a clarification of referents. The condition of work decision activity related to the timing of the administration of patient care was deleted because this activity depends on the patient status (Anthony, 1997). Thus, the final decision activities were 12 caregiving decision activities and 12 condition of work decision activities. The instrument was subsequently revised using focus group methodology so that the decision activities were applicable to nurses working in all specialties. The revised instrument, which was used in the current study, contained 12 caregiving decisions and 11 condition of work decisions.

The revised instrument was pilot tested with 61 nurses who were working in an acute care urban tertiary hospital including surgical intensive care (n = 11), pediatrics (n = 10), and women's health (n = 12), and two home care agencies (n = 28) in which one agency was affiliated with the acute care urban tertiary and one was a free standing home

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health care agency (Anthony, 1996). This pilot study was supported by the FPB School of Nursing alumni association, Case Western Reserve University. Since the method of distribution varied, the total number of questionnaires distributed was not known. However, of the 61 returned questionnaires, two were dropped because of large amount of missing data. Thus, the final sample consisted of 59 responding nurses. Nurses had an average age of 38 years (SD = 9.61, range = 23-59) and had been working as an RN for 12 years (SD = 9.05, range = 1-40). Fifty-six percent (n = 33) of the respondents had a BSN as the highest degree in nursing. The reliability of the PDAQ was tested by using Cronbach's alpha coefficient. The coefficients of the identification, design, and selection phases of caregiving decision making were .87, .87, and .82, respectively. The coefficients of the identification, design, and selection phases of condition of work decision making were .86, .86, and .88, respectively.

The construct validity of the original PDAQ reported by Anthony (1997) was supported in the 300 nurses who were working in medical surgical units in 13 acute care hospitals. The construct validity was assessed by examining divergent and convergent validity with other measures of participation and examining its correlation with a standard measure of job authority (Anthony, 1997). The divergent validity of the caregiving subscale of the PDAQ was supported by assessing its correlation values with Vroom's (1960) measure of participation, which tended to measure factors in the work environment. The results indicated small correlations for each phase of caregiving decisions ($r = .24$ for identification; $r = .25$ for design; and $r = .21$ for selection; $ps < .001$). The divergent validity of the caregiving subscale of the PDAQ was also supported by examining its correlation with Hage and Aiken's (1967) measure of participation,

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which focused on participation in staffing and adoption of policies and programs. The correlations were also small (r = .15 for identification; r = .19 for design; and r = .13 for selection; ps < .001). The convergent validity of the condition of work subscale of the PDAQ was supported by examining its correlation with Vroom's (1960) global measure of participation and Hage and Aiken's (1967) measure of participation. The results indicated higher correlations for each phase of decision making with the Vroom's (1960) measure (r = .45 for identification; r = .48 for design; and r = .52 for selection; ps < .001) and with the Hage and Aiken's (1967) measure (r = .43 for identification; r = .48 for design; and r = .50 for selection; ps < .001). Thus, these two measures of participation provide better support for the construct validity of the condition of work subscale because the items in Vroom's (1960) scale and Hage and Aiken's scale reflects condition of work decisions (Anthony, 1997).

The second method used to examine construct validity of the original PDAQ was to examine the correlation between Van de Ven and Ferry's Job Authority scale (1980) and both caregiving and condition of work subscales. The results indicated small correlations for the caregiving subscale (r = .07 for identification; r = .20 for design; and r = .18 for selection) and slightly higher correlations for the condition of work subscale (r = .18 for identification; r = .22 for design; and r = .27 for selection). The construct validity was not well supported. The items in the Job Authority scale were more closely aligned with condition of work decisions. Higher correlations, especially for the condition of work decisions, would be expected to indicate a stronger relationship between authority and decision making. Authority allows an individual to make decisions (Blanchfield & Biordi, 1996). However, greater authority does not necessarily reflect

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greater participation in decision making (Anthony, 1999). Thus, higher correlations between Van de Ven and Ferry's Job Authority scale (1980) and each phase of caregiving and condition of work decisions would have better supported the construct validity of the PDAQ.

Independent variables:

Leadership competency. Leadership is a relationship between leaders and followers (Kouzes & Posner, 1987). Leadership was defined as an interactive process of influencing others to achieve a common goal (Gitlow, 1992; Locke, 1991; Manfredi, 1996; McCloskey & Molen, 1986). Competency is an individual's actual performance in a specific situation, which integrates knowledge, skill, attitudes, and behavior (Nolan, 1998). Theoretically, leadership competency is the ability of leaders to influence other people to accomplish the goals of an organization (Brooten, 1984; Jaques & Clement, 1991; McCloskey & Molen, 1986; Yura, Ozimek, & Walsh, 1976).

For this current study, nurse manager leadership competency was operationally defined as the perception of staff nurses of a nurse manager's ability to influence them to achieve the unit goals related to clinical and administrative issues. It was measured by two single item questions. This measure was developed for the VNPM study by the expert panelists who were registered nurses and who were selected by their peers as experts in understanding nursing practice models. The first item was "To what extent does the unit manager provide leadership for clinical issues?"; the second item was "To what extent does the unit manager provide leadership for administrative issues?" The scale was a graphic scale (Brink & Wood, 1989) in which each item was scored from 1 to 5, where 1 = "minimal competency" and 5 = "a great extent of competency." Single-item

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indicators allow subjects to rate their perceptions of an overall concept and consider all relevant aspects of a phenomenon (Youngblut & Casper, 1993). The scores of nurse manager leadership for clinical issues were summed and averaged into a single score so that higher scores mean higher leadership competency for clinical issues. Similarly, the scores of nurse manager leadership for administrative issues were summed and averaged into a single score so higher scores mean higher leadership competency for administrative issues.

Nurse-physician collaboration. Nurse-physician collaboration is theoretically defined as those interactions between nurses and physicians with trust, respect, and joint contributing of their knowledge, skills, and value to accomplish the goal of quality patient care (Pike et al., 1993; Sebas, 1994; Weiss & Davis, 1985). In the current study, nurse-physician collaboration was operationally defined as the extent to which staff nurses and physicians work together and the level of collaboration was measured by the Collaborative Practice Scale (CPS) for nurses designed by Weiss & Davis (1985). The original scale consisted of 9 items that measured nurses' actions in collaborating with physicians in providing patient care and 10 items that measured physicians' actions in collaborating with nurses. Both the nurse CPS scale and the physician CPS scale were Likert-type scales in which each item was scored from 1 to 6, where 1 = "never" and 6 = "always." The scale for nurses was selected for the primary study and the current study. Scores of each item were summed and averaged into a single score so that higher scores mean greater collaboration with physicians. However, in this study, scaling was 1= "always" and 6 = "never." The internal consistency reliability coefficient of the nurse CPS scale reported by Weiss and Davis (1985) was .80.

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In Weiss and Davis (1985) study, the construct validity of the nurse CPS scale was supported by using the factor analysis method which indicated that the CPS displayed two factors of assertiveness and cooperativeness. The concurrent validity of the nurse CPS was supported as evidenced by a significant correlation ($r = .33$, $p < .001$) between the subconstruct of assertiveness and a dimension of the Health Role Expectation Index (HERI), which measured increased responsibility for nurses and greater equality in health care relationships. The predictive validity of the nurse CPS was supported by comparing the CPS scores based on nurses' educational background and their role in health care. Nurses who had less than a baccalaureate degree scored lower ($M = 21.2$) on the assertiveness subconstruct of the CPS than did nurses with a baccalaureate degree or above ($M = 20$), $t(91) = 2.10$, $p < .04$. Nurses who were clinicians scored lower ($M = 39.2$) in total CPS scores than nurses who were educators, administrators, and researchers (collectively) ($M = 43.9$), $t(93) = 2.8$, $p < .006$.

Reliability of the PDAQ and CPS for the Current Study

The internal consistency of the Participation in Decision Activities Questionnaire (PDAQ) scale and the Collaborative Practice Scale (CPS) in the current study was evaluated. Before measuring the reliability, the item analysis was done by examining the characteristics of the individual items, the characteristics of the overall scales, and the relationship between the individual items and the entire scale. Cronbach's alpha was calculated to determine internal consistency. The results are presented in Table 3.

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Table 3

Reliability of the PDAQ Scale and the CPS

Scale	Item means	Inter-item correlation	Corrected item-total correlation	Alpha if item deleted	Standardized item alpha
PDAQ					
Caregiving					
Identification	3.50-5.20	.33	.42-.66	.83-.85	.86
Design	3.10-5.03	.33	.44-.66	.83-.85	.85
Selection	2.85-4.94	.32	.40-.67	.82-.84	.85
Condition of work					
Identification	1.57-3.03	.38	.47-.66	.85-.86	.87
Design	1.51-2.85	.38	.39-.71	.84-.87	.87
Selection	1.45-2.80	.37	.40-.68	.84-.86	.87
CPS	2.43-4.82	.40	.39-.68	.83-.86	.86

The measurement used in the current study is summarized in Table 4.

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Table 4

Summary of Measurement

Concept	Instrument	Items	Subscale	Scoring	Reliability for the current study
Participation in decision making	Participation in Decision Activities (PDAQ) scale developed for the VNPM by Anthony (1996)	12 11	Caregiving decisions: identification, design, and selection Condition of work decisions: identification, design, and selection	Three phases of decision making and 6-point Likert scale: 1=no participation to 6=a great deal of participation	.86 for identification, .85 for design, and .85 for selection .87 for identification, .87 for design, and .87 for selection
Leadership competency of nurse managers	Two single item scales developed for the VNPM	2	Unit manager leadership for clinical and administrative	Five-point graphic scale: 1=minimally to 5=a great extent	None reported
Nurse-physician collaboration	Collaborative Practice Scale (CPS) (Weiss & Davis, 1985)	9	(none)	Likert scale; 1=never to 6=always	.86

Data Collection Procedure

As part of a larger study, the data for participation in caregiving and condition of work decisions, unit manager leadership competencies, and nurse-physician collaboration

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were collected from hospital staff nurses. At each participating hospital, the principal investigator met with senior nursing administrators at the hospital. The study was explained, questions were answered, and consent was obtained to continue with the project. Initially, one hospital refused to participate because of internal changes within the nursing department. Another hospital that was similar in characteristics was chosen. Three weeks prior to data collection, a member of the research team met with the head nurse and unit staff to explain the study and data collection procedures and to request permission to conduct the research on each unit. Each questionnaire was coded with an ID number labeled for the hospital and unit and distributed to staff nurses' mailboxes with a cover letter explaining the study's purpose and that participation in the study was voluntary (see Appendix A). Nurses were asked to return the questionnaire to a designated box provided on the unit by the researcher. Coupons for coffee, food, or for hospital gift shop were provided to staff nurses as incentives for participating in the study. Flyers were placed in each nurses' mailbox on the unit at two and four weeks after questionnaires were originally distributed, as reminders to complete their surveys. Initial response rates were low and, as an added incentive, units where nurses had at least a 50% response rate were provided with additional incentives (e.g. a pizza party).

Protection of Human Subjects

The primary study provided for human subject protections and was approved by the Institutional Review Board of the participating hospitals and the Research Review Committee of the Frances Payne Bolton School of Nursing of Case Western Reserve University. Permission for access to the data had been provided by the principal

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investigator of the primary study. Results were presented in aggregate to protect the identity of the respondents.

Data Management

The data set of staff nurses' participation in decision-making, nurse manager leadership competencies, and nurse-physician collaboration was drawn from the primary study. In the primary study, data was entered into a SPSS data file and then reentered into another SPSS data file. Data were cleaned by comparing the data from both files. Discrepancies were resolved by comparing with the original hard copy data.

Missing data were scanned for both the dependent (participation in identification, design, and selection phases of caregiving and condition of work decisions) and the independent variables (nurse manager leadership competencies for clinical and administrative issues and nurse-physician collaboration). Missing data was visually inspected to detect any patterns. After inspecting, there were no observable patterns of missing data. In the current study, for subjects with more than 25% missing data for any one scale, imputation was done using a stratified sample mean. The substitution of stratified sample mean increases variances rather than imputing by grand means (Levy & Lemeshow, 1991). Based on the literature, nurses' decision making was influenced by years of experience (Blegen et al., 1993). Similarly, the extent of collaboration between nurses and physicians had a positive relationship with nurses' years of experience (Alt-White et al., 1983). Therefore, the stratified sample means for the identification, design, and selection phases of caregiving and condition of work decision making and for the CPS scale were calculated based on staff nurses' years of experience which were categorized as follows: 0-5.0 years, 5.01-10 years, 10.01-15 years, and 15.01- highest

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years. Then, these stratified sample means were used for imputation. For subjects who had less than 25% missing data on any one scale, imputation was done by calculating a mean using each subject's existing data. Missing data for unit manager leadership for clinical issues were replaced by the sample mean for leadership competency for the clinical issue scale. Similarly, missing data for unit manager leadership for administrative issues were replaced by the sample mean of leadership competency for administrative issues scale.

Data Analysis

To calculate the statistics needed for this study, the Statistical Package for Social Sciences Program (SPSSPC) was used. Preliminary analysis was conducted to examine the characteristics of the data and the statistical assumptions required for multiple regression analysis. Data analysis was conducted as follows:

1. Univariate analysis was used to analyze demographic data and scores for participation in decision making, nurse manager leadership competencies, and nurse-physician collaboration scale. Univariate analysis includes measures of central tendency and dispersion (Lewis-Beck, 1995). Variables were measured by interval scales. Standard deviation and range were used to measure the dispersion of the data. The univariate analysis for participation in decision making was performed for each phase of decision making and types of decisions (caregiving and condition of work). The normality of each variable was also analyzed by graphic representations of histograms and normal p-p plots, by comparing the mean and median, and by assessing skewness values. Univariate outliers were screened from the box plots.

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2. The reliabilities of the scales of participation in caregiving and condition of work and nurse-physician collaboration were examined by the internal consistency method.

3. Hypothesis testing was done to examine the relationships among the study variables. Pearson Product Moment Correlation was used to calculate the correlations among the study variables. Multiple regression analysis was performed to determine how much of the variance in the dependent variable (participation in decision making) could be explained by the independent variables (nurse manager leadership competencies for clinical and administrative issues and nurse-physician collaboration). No hierarchical ordering of the variables in the model were posited, hence a simultaneous entry was used. Before assessing the overall explanation of the regression model, the following assumptions of multiple regression were examined (Berry & Feldman, 1985; Hair, Anderson, Tatham, & Black, 1995; Lewis-Beck, 1980):

1. No specification error: no relevant independent variable is excluded from the model; no irrelevant independent variable is included in the model; the relationship between each independent variable and the dependent variable is linear.

2. No measurement error: all variables are accurately measured.

3. Assumptions of error terms:

3.1 The mean value of the error term is zero.

3.2 The variance of the error term is constant (homoscedasticity).

3.3 The error terms are uncorrelated (no autocorrelation).

3.4 Each independent variable is uncorrelated with the error term.

3.5 The error term is normally distributed.

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In addition to those assumptions, multicollinearity among the independent variables and the presence of outliers were also examined.

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CHAPTER IV

Results

This chapter presents the results of this secondary data analysis. The results include the description of the sample and the study variables and the analysis of the research questions.

The purpose of this study was to investigate the relationships among staff nurses' participation in three phases of the decision making process related to participation in caregiving and condition of work decisions, nurse manager leadership competencies, and nurse-physician collaboration. Prior to exploring these relationships, characteristics of the sample and the scores for participation in decision making, nurse manager leadership competencies, and nurse-physician collaboration scale were examined.

Sample

The sample consisted of 279 full-time nonsupervisory nurses who were drawn from the primary study. The mean age of the nurses was 34 years (SD = 8.93) with a range of 22-59 years. The average of the RN working experience was 7.68 years (SD = 7.31) with a range from 0.11-42 years. The age and years of experience of this sample are described in Table 5.

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Table 5

Age and Years of Experience

	n	Mean (Years)	SD	Median (Years)	Range (Years)
Age	267	34.32	8.93	32.00	22.00-59.00
Years of RN experience	276	7.68	7.31	5.00	0.11-42.00

Forty-six percent (n = 129) of staff nurses graduated with a BSN as their basic education, and 51.3% (n = 143) had a BSN as the highest degree in nursing. Only 1% and 2% had received a MSN and ND, respectively, as their highest education. The educational preparation of staff nurses is shown in Table 6.

Table 6

Educational Preparation

	First degree in nursing (N=277)	Highest degree in nursing (N=272)
	n (%)	n (%)
LPN	21 (7.5)	-
Associate degree	71 (25.4)	81 (29.0)
Diploma	51 (18.3)	39 (14.0)
BSN	129 (46.2)	143 (51.3)
MSN	-	4 (1.4)
ND	5 (1.8)	5 (1.8)

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Univariate Analysis of Participation in Decision Making

After imputation of missing data, the scores for participation in identification, design, and selection for caregiving and condition of work decisions were examined. The subscale scores of each phase for caregiving and condition of work decisions were summed and averaged. Measures of central tendency for each phase of those two types of decisions are shown in Table 7.

Table 7

Measures of Central Tendency for Identification, Design, and Selection (N = 279)

	Mean	SD	Median	Range (Theoretical range 1-6)	Skewness	Confidence interval (95%)
Caregiving						
Identification	4.52	.72	4.56	2.33-6.00	-.13	4.44-4.61
Design	4.06	.77	4.06	2.00-6.00	.01	3.97-4.15
Selection	3.80	.80	3.83	1.58-6.00	.01	3.71-3.90
Condition of work						
Identification	2.38	.82	2.34	1.00-5.27	.62	2.28-2.47
Design	2.21	.75	2.10	1.00-4.64	.63	2.12-2.30
Selection	2.12	.73	2.00	1.00-5.55	.91	2.03-2.21

The extent of participation for the identification ($M = 4.52$), design ($M = 4.06$), and selection ($M = 3.80$) for caregiving decisions was moderate. The selection phase had

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the widest range of scores. The confidence intervals for those three phases did not overlap, suggesting that the extent of participation in each phase of caregiving decisions was different; that is, participation in identification was greater than in design, and participation in design was greater than in selection. The distributions of the scores were close to normal, as evidenced by histograms and normal p-p plots. The means and medians were close, also indicating normal distribution.

Among condition of work decisions, the extent of participation in identification ($\underline{M}$ = 2.38), design ($\underline{M}$ = 2.21), and selection ($\underline{M}$ = 2.12) was small. Like caregiving decisions, the selection phase for condition of work decision making had the widest range of scores. The confidence intervals overlapped, indicating that the levels of participation among those three phases were not different. The means and medians were approximately equal. The histograms showed slight skewness. However, this deviation from normal distribution was not considered problematic for inferential testing.

Univariate Analysis of Nurse Manager Leadership Competencies

The scores for the single-item scale describing unit manager leadership for clinical issues were summed and averaged into a single score. Similarly, the scores for the single-item scale describing unit manager leadership for administrative issues were summed and averaged into a single score. Measures of the central tendency of unit manager leadership competencies are presented in Table 8. Staff nurses perceived that nurse managers provided moderate leadership for clinical issues ($\underline{M}$ = 2.63) and slightly greater leadership for administrative issues ($\underline{M}$ = 3.40). The distribution of both scores was approximate to normal because the means and medians were close and the skewness values were close to zero.

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Univariate Analysis of Nurse-Physician Collaboration

To facilitate interpretation and be consistent with the original instrument, items in the nurse-physician collaboration scale were reversed scored so that 6 = "always" and 1 = "never," so higher numbers reflect greater collaboration. The scores for nurse-physician collaboration were reversed scored and imputation of missing data was done. Therefore, the reversed scores were summed and averaged. The extent of collaboration between nurses and physicians was fairly moderate (M = 3.66) (see Table 8). The mean and median were approximately the same, which indicates that the distribution of the scores was close to normal. The histogram and normal p-p plots showed the scores to be normally distributed.

Table 8

Measures of Central Tendency for Leadership Competencies and Nurse-Physician Collaboration (N = 279)

	Mean	SD	Median	Range	Skew-ness	Confidence interval (95%)
Leadership for clinical issues	2.63	1.13	3.00	1.00-5.00	.23	2.50-2.76
Leadership for administrative issues	3.40	1.11	4.00	1.00-5.00	-.46	3.27-3.53
Nurse-physician collaboration	3.66	.98	3.78	1.22-6.00	-.26	3.55-3.78

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Hypothesis Testing

Research question 1. What are the relationships among hospital staff nurses' participation in the identification, design, and selection phases of decision making related to caregiving and condition of work decisions, nurse manager leadership competencies for clinical and administrative issues, and nurse-physician collaboration?

Hypothesis 1. There will be a positive correlation between the scores of nurse manager leadership competencies for clinical and administrative issues and the scores of staff nurses' participation in the identification, design, and selection phases of decision making related to caregiving and condition of work decisions.

Hypothesis one was tested by using the Pearson Product Moment correlation coefficient. Among caregiving decisions, leadership competency for clinical issues had a statistically significant positive but small correlation with the identification (r = .14, p = .023), design (r = .17, p = .005), and selection (r = .12, p = .047) phases of decision making. In contrast, leadership competency for administrative issues had no statistically significant correlations with the three phases of caregiving decisions (r = .10 for identification, r = .11 for design, r = .07 for selection) (see Table 9).

Among condition of work decisions, leadership competency for clinical issues had a statistically significant positive but small correlation with the identification (r = .17, p = .004), design (r = .18, p = .002), and selection (r = .17, p = .005) phases of decision making. Similarly, leadership competency for administrative issues had a statistically significant and positive but small correlation with the identification (r = .17, p = .005), design (r = .19, p = .002), and selection (r = .17, p = .005) phases of condition of work. The results are shown in Table 10.

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In conclusion, hypothesis one was partially supported. Nurse manager leadership competency for clinical issues had a significant positive relationship with staff nurses' participation in the identification, design, and selection phases of decision making related to both caregiving and condition of work decisions. Leadership competency for administrative issues had significant positive relationship with staff nurses' participation in the identification, design, and selection phases of decision making related to condition of work decisions but not to caregiving decisions.

Hypothesis 2. There will be a positive correlation between nurse-physician collaboration scores and the scores of staff nurses' participation in the identification, design, and selection phases of decision making related to caregiving and condition of work decisions.

Hypothesis two was tested by using the Pearson Product Moment correlation coefficient. Among caregiving decisions, nurse-physician collaboration had a positive and statistically significant correlation with the identification ($r = .25$, $p < .01$), design ($r = .23$, $p < .01$) and selection ($r = .28$, $p < .01$) phases (see Table 9). Among condition of work decisions, there is a statistically significant positive but small correlation between nurse-physician collaboration and the identification ($r = .23$, $p < .01$), design ($r = .27$, $p < .01$), and selection ($r = .27$, $p < .01$) phases (see Table 10). Hypothesis two was supported.

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Table 9

Correlation Matrix of Participation for Phases of Caregiving Decisions, Leadership Competencies for Clinical and Administrative Issues, and Nurse-Physician Collaboration (N = 279)

	Identification	Design	Selection	Leadership for clinical issues	Leadership for administrative issues	Nurse-physician collaboration
Identification	1.00					
Design	.84**	1.00				
Selection	.67**	.89**	1.00			
Leadership for clinical issues	.14*	.17**	.12*	1.00		
Leadership for administrative issues	.10	.11	.07	.58**	1.00	
Nurse-physician collaboration	.25**	.23**	.28**	.14*	.13*	

Note. ** $p < .01$, * $p < .05$

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Table 10

Correlation Matrix of Participation in Phases of Condition of Work Decisions, Leadership Competencies for Clinical and Administrative Issues, and Nurse-Physician Collaboration (N = 279)

	Identification	Design	Selection	Leadership for clinical issues	Leadership for administrative issues	Nurse-physician collaboration
Identification	1.00					
Design	.89**	1.00				
Selection	.83**	.94**	1.00			
Leadership for clinical issues	.17**	.18**	.17**	1.00		
Leadership for administrative issues	.17**	.17**	.19**	.58**	1.00	
Nurse-physician collaboration	.23**	.27**	.27**	.14*	.13*	1.00

Note. ** $p < .01$, * $p < .05$

Research question 2. To what extent do nurse manager leadership competencies for clinical and administrative issues and nurse-physician collaboration explain variations

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in levels of staff nurse participation in the identification, design, and selection phases of caregiving and condition of work decision making?

Hypothesis. Nurse manager leadership competencies for clinical and administrative issues and nurse-physician collaboration explain staff nurses' participation in the identification, design, and selection phases of decision making related to caregiving and condition of work decisions.

Multiple regression analysis was used to test this hypothesis. The simultaneous model, in which all independent variables are entered into the regression equation at once, was used for the analysis. There were six regression models built based on the dependent variables: identification, design, and selection for caregiving decisions and identification, design, and selection for condition of work decisions. The multiple regression assumptions were analyzed. The reliabilities of the identification, design, and selection phases for caregiving and condition of work decisions ranged from .85 to .87 indicating no measurement error in the dependent variables. The correlation among independent variables ranged from .13 to .58, supporting the absence of multicollinearity. Moreover, the tolerance (.66-.98) and VIF (1.02-1.52) values indicated no multicollinearity. The mean of standardized residuals was zero. The error terms were uncorrelated as evidenced by the Durbin-Watson statistics ranging from 1.66 to 1.94, which were not greater than 2.0 (Norusis, 1993). The scatterplots of standardized residuals and standardized predicted values indicated the constant variance of error terms. The scatterplots of standardized residuals and each independent variable showed that each independent variable was not correlated with the error terms. The normal p-p plots

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and histograms of standardized residuals supported that the error terms were normally distributed. In conclusion, the regression assumptions were met.

After examining the data for violations of assumptions, the regression model and the overall explanation of the independent variables were estimated and assessed. Outliers on the dependent variable and independent variables were examined for each regression model.

Participation in the identification phase of caregiving decisions was regressed on nurse manager leadership competencies for clinical and administrative issues and nurse-physician collaboration (see Table 11). Nurse manager leadership competencies for clinical and administrative issues and nurse-physician collaboration accounted for 6.3% of the variance in participation in the identification phase and the model was supported (adjusted $\underline{R}^2 = .063$, $\underline{F}(3,275) = 7.247$, $\underline{p} < .0005$). Leadership competencies for clinical and administrative issues did not account for statistically significant changes in participation in the identification phase. Variations in nurse-physician collaboration accounted for statistically significant changes in participation in the identification phase ($\beta = .236$, $\underline{t} = 4.009$, $\underline{p} < .0005$). Effect sizes of standardized regression coefficient (β) have been estimated at .10 or below = weak, .20 to .40/.50 = moderate, and above .40/.50 = strong (Hinshaw, Smeltzer, & Atwood, 1987). In this model, nurse-physician collaboration had a moderate effect on changes in participation in decision making for this phase as evaluated by the magnitude of standardized coefficient.

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Table 11

Summary of Simultaneous Multiple Regression Analysis for Variables Explaining Participation in the Identification Phase of Caregiving Decisions (N =279)

Variable	B	SE B	β	t	p
Leadership for clinical issues	.059	.046	.093	1.298	.195
Leadership for administrative issues	.010	.046	.016	.218	.827
Nurse-physician collaboration	.172	.043	.236	4.009	<.0005

Note. Adjusted R^2 =. 063, df = 3,275, F = 7.247, p <. 0005

Residuals or prediction errors were examined in order to detect influential outliers that may affect the regression estimates. Hair et al. (1995) recommended three approaches most widely used to identify influential observations: 1) the studentized residuals, 2) the leverage points, and 3) Cook's distance. The studentized residual is the primary indicator to measure influential outliers on the dependent variable. Its standard deviation for an observation is computed from regression estimates by dropping that observation from the regression equation. Values greater than ± 2.00 are influential outliers. The leverage points detect the outlying observations on the independent variables. Observations with leverage points larger than 2p/n, where p is the number of independent variables, for a large sample size are treated as influential outliers. Based on this formula, the cut point of leverage points for this sample is .021 [(2×3)/279]. Cook's distance measures the impact of an observation on the changes in the predicted values when that case is dropped (studentized residuals) as well as an observation that is far from other observations (leverage points). Thus, Cook's distance identifies the outliers

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for both the dependent and independent variables simultaneously. To identify influential outliers, a Cook's distance value must be equal to or greater than 1.00. Eleven observations had studentized residuals greater than ± 2.00. Twenty-three cases had leverage points larger than .021. No observations had a Cook's distance greater than 1.00. When these influential outliers were excluded from the regression equation, the adjusted $\underline{R}^2$ was .066 with an $\underline{F}$ ratio of 6.825 ($\underline{p} < .0005$). The adjusted $\underline{R}^2$ increased by 0.3% indicating the outliers did not affect the amount of explained variance.

Participation in the design phase of caregiving decisions was regressed on nurse manager leadership competencies for clinical and administrative issues and nurse-physician collaboration (see Table 12). Nurse manager leadership competencies for clinical and administrative issues and nurse-physician collaboration accounted for 6.1% of the variance in participation in the design phase and the model was supported (adjusted $\underline{R}^2 = .061$, $\underline{F}(3,275) = 6.978$, $\underline{p} < .0005$). Leadership competencies for clinical and administrative issues did not account for statistically significant changes in participation in the design phase. Variations in nurse-physician collaboration accounted for statistically significant changes in participation in the design phase ($\beta = .208$, $\underline{t} = 3.532$, $\underline{p} < .0005$) and the effect was moderate as evaluated by the magnitude of standardized coefficient. The effect was slightly lower than the effect on the identification.

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Table 12

Summary of Simultaneous Multiple Regression Analysis for Variables Explaining Participation in the Design Phase of Caregiving Decisions (N =279)

Variable	B	SE B	β	t	p
Leadership for clinical issues	.095	.049	.140	1.956	.052
Leadership for administrative issues	-.001	0.049	-.002	-.029	.977
Nurse-physician collaboration	.162	.046	.208	3.532	<.0005

Note. Adjusted R^2 = .061, df = 3,275, F = 6.978, p < .0005

Influential outliers for this regression model were assessed. Eleven observations had studentized residuals greater than ± 2.00. The same twenty-three cases, found in the participation in identification phase, had leverage points larger than .021. There was no observation which had a Cook's distance greater than 1.00. When these influential outliers were excluded from the regression equation, the adjusted R^2 was .065 with an F ratio of 6.658 (p < .0005). The adjusted R^2 increased by 0.4% indicating that the outliers did not affect the amount of explained variance.

Participation in the selection phase of caregiving decisions was regressed on nurse manager leadership competencies for clinical and administrative issues and nurse-physician collaboration (see Table 13). Nurse manager leadership competencies for clinical and administrative issues and nurse-physician collaboration accounted for 7.6% of the variance in participation in selection and the model was supported (adjusted R^2 = .076, F(3,275) = 8.605, p < .0005). Leadership competencies for clinical and administrative issues did not account for statistically significant changes in participation

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in the selection phase. Variations in nurse-physician collaboration accounted for statistically significant changes in participation in the selection phase ($\beta = .271$, $t = 4.643$, $p < .0005$) and the effect was moderate as evaluated by the magnitude of standardized coefficient. The effect was slightly greater than the effect on the identification and design for this type of decision.

Table 13

Summary of Simultaneous Multiple Regression Analysis for Variables Explaining Participation in the Selection Phase of Caregiving Decisions (N =279)

Variable	B	SE B	β	t	p
Leadership for clinical issues	.063	.051	.089	1.248	.213
Leadership for administrative issues	-.011	.051	-.015	-.214	.831
Nurse-physician collaboration	.222	.048	.271	4.643	<.0005

Note. Adjusted $R^2 = .076$, $df = 3,275$, $F = 8.605$, $p < .0005$

Influential outliers for this regression model were assessed. Fourteen observations had studentized residuals greater than ± 2.00. The same twenty-three cases, found in the participation in identification phase, had leverage points larger than .021. There was no observation which had a Cook's distance greater than 1.00. When these influential outliers were excluded from the regression equation, the adjusted R^2 was .105 with an F ratio of 10.453 ($p < .0005$). The adjusted R^2 increased by 2.9%, indicating that the outliers had a very small effect on the amount of explained variance.

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Participation in the identification phase for condition of work decisions was regressed on nurse manager leadership competencies for clinical and administrative issues and nurse-physician collaboration (see Table 14). The model accounted for 6.9% of the variance in participation in the identification phase and the model was supported (adjusted $R^2 = .069$, $F(3,275) = 7.902$, $p < .0005$). Leadership competencies for clinical and administrative issues did not account for statistically significant changes in participation in the identification phase. Variations in nurse-physician collaboration accounted for statistically significant changes in the identification phase ($\beta = .210$, $t = 3.578$, $p < .0005$) and the effect was moderate as evaluated by the magnitude of standardized coefficient.

Table 14

Summary of Simultaneous Multiple Regression Analysis for Variables Explaining Participation in the Identification Phase of Condition of Work Decisions (N =279)

Variable	B	SE B	β	t	p
Leadership for clinical issues	.065	.052	.090	1.256	.210
Leadership for administrative issues	.066	.052	.089	1.253	.211
Nurse-physician collaboration	.176	.049	.210	3.578	<.0005

Note. Adjusted $R^2 = .069$, $df = 3,275$, $F = 7.902$, $p < .0005$

Influential outliers for this regression model were assessed. Thirteen observations had studentized residuals greater than ± 2.00. The same twenty-three cases, found in the participation in identification phase, had leverage points larger than .021. There was no

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observation which had a Cook's distance greater than 1.00. When these influential outliers were excluded from the regression equation, the adjusted $\underline{R}^2$ was .080 with an $\underline{F}$ ratio of 8.077 ($\underline{p} < .0005$). The adjusted $\underline{R}^2$ increased by 1.1% indicating that the outliers had a small effect on the amount of explained variance.

Participation in the design phase of condition of work decisions was regressed on nurse manager leadership competencies for clinical and administrative issues and nurse-physician collaboration (see Table 15). The model accounted for 8.8% of the variance in participation in the design phase and the model was supported (adjusted $\underline{R}^2 = .088$, $\underline{F}(3,275) = 9.965$, $\underline{p} < .0005$). Leadership competencies for clinical and administrative issues did not account for statistically significant changes in participation in the design phase. Variations in nurse-physician collaboration accounted for statistically significant changes in participation in the design phase ($\beta = .245$, $\underline{t} = 4.231$, $\underline{p} < .0005$) and the effect was moderate as evaluated by the magnitude of standardized coefficient. The effect was slightly greater than the effect on the identification for this type of decision.

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Table 15

Summary of Simultaneous Multiple Regression Analysis for Variables Explaining Participation in the Design Phase of Condition of Work Decisions (N =279)

Variable	B	SE B	β	t	p
Leadership for clinical issues	.068	.047	.102	1.445	.150
Leadership for administrative issues	.052	.047	.078	1.111	.268
Nurse-physician collaboration	.187	.044	.245	4.231	<.0005

Note. Adjusted R^2 = .088, df = 3,275, F = 9.965, p < .0005

Influential outliers for this regression model were assessed. Twelve observations had studentized residuals greater than ± 2.00. The same twenty-three cases, found in the participation in identification phase, had leverage points larger than .021. There was no observation which had a Cook's distance greater than 1.00. When these influential outliers were excluded from the regression equation, the adjusted R^2 was .122 with an F ratio of 12.216 (p < .0005). The adjusted R^2 increased by 3.4%, indicating that the outliers had some effect on the amount of explained variance.

Participation in the selection phase of condition of work decisions was regressed on nurse manager leadership competencies for clinical and administrative issues and nurse-physician collaboration (see Table 16). Nurse manager leadership competencies for clinical and administrative issues and nurse-physician collaboration accounted for 8.8% of the variance in participation in the selection phase and the model was supported (adjusted R^2 =. 088, F(3,275) = 9.902, p < .0005). Leadership competencies for clinical and administrative issues did not account for statistically significant changes in

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participation in the selection phase. Variations in nurse-physician collaboration accounted for statistically significant changes in participation in the selection phase ($\beta = .243$, $t = 4.183$, $p < .0005$) and the effect was moderate as evaluated by the magnitude of standardized coefficient.

Table 16

Summary of Simultaneous Multiple Regression Analysis for Variables Explaining Participation in the Selection Phase of Conditions of Work Decisions (N =279)

Variable	B	SE B	β	t	p
Leadership for clinical issues	.040	.046	.062	.879	.380
Leadership for administrative issues	.078	.046	.120	1.701	.090
Nurse-physician collaboration	.181	.043	.243	4.183	<.0005

Note. Adjusted $R^2 = .088$, $df = 3,275$, $F = 9.902$, $p < .0005$

Influential outliers for this regression model were assessed. Thirteen observations had studentized residuals greater than ± 2.00. The same twenty-three cases, found in the participation in identification and design phases, had leverage points larger than .021. There was no observation which had a Cook's distance greater than 1.00. When these influential outliers were excluded from the regression equation, the adjusted R^2 was .108 with an F ratio of 10.807 ($p < .0005$). The adjusted R^2 increased by 2%, indicating that the outliers had a small effect on the amount of explained variance.

In conclusion, hypothesis three was supported. The model explained small amount of variances in participation in the identification, design, and selection phases

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related to caregiving and condition of work decisions. However, nurse-physician collaboration accounted for statistically significant changes in the identification, design, and selection phases of both caregiving and condition of work decisions and the effects were moderate.

After testing the hypotheses, post hoc power was calculated. Using power analysis program, the value of power for the current study is .96 using the significance level of .05 and the lowest effect size for regression models of this current study (Adjusted $\underline{R}^2 = .061$ for participation in the design phase for caregiving decisions).

Post Hoc Analysis

There were statistically significant high correlations between phases of decision making, specifically between the identification and design phases; the identification and selection phases; and the design and selection phases for caregiving decisions ($\underline{r} = .84, .67$, and $.89$, respectively, $\underline{p}s < .01$) and for conditions of work decisions ($\underline{r} = .89, .83$, and $.94$, respectively, $\underline{p}s < .01$). The high correlations between phases of decision making suggested that perhaps, empirically, the phases of decision making were not discriminating. Therefore, the mean scores for the identification, design, and selection phases for caregiving decisions were combined and averaged into an overall caregiving decision score. Similarly, the mean scores for the identification, design, and selection phases for condition of work decisions were combined and averaged into an overall condition of work decision score. Post hoc analysis was conducted to explore whether nurse manager leadership competencies and nurse-physician collaboration explained more of the variance in participation in overall decision making related to caregiving and

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condition of work decisions. The measures of central tendency for overall caregiving and condition of work decisions were described and the research hypotheses were reanalyzed.

Measures of Central Tendency for Overall Caregiving and Condition of Work Decisions

The extent of participation in the overall decision making related to caregiving decisions was moderate (M = 4.13), whereas the extent of participation in overall decision making related to condition of work decisions was low (M = 2.23) (see Table 17).

Table 17

Measures of Central Tendency for Overall Caregiving and Condition of Work Decisions (N =279)

	Mean	SD	Median	Range (Theoretical range 1-6)	Skewness	Confidence intervals (95%)
Overall caregiving	4.13	0.71	4.14	2.00-6.00	-.05	4.04-4.21
Overall condition of work	2.23	0.74	2.20	1.00-4.55	.60	2.15-2.32

Research hypothesis one was reanalyzed to examine the relationships among overall caregiving and condition of work decisions, leadership competencies for clinical issues, and leadership for administrative issues. Leadership competency for clinical issues had a statistically significant positive but small correlation with participation in the

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overall caregiving decisions (r = .15, p = .011). Leadership competency for administrative issues had no statistically significant correlation (r = .10) with overall caregiving decisions (see Table18). Among condition of work decisions, leadership competencies for clinical and administrative issues had a statistically significant positive but small correlation with participation in the overall condition of work decisions (r = .18, and .18, respectively, ps = .002) (see Table 18).

Research hypothesis two was reanalyzed to examine the relationships among participation in the overall caregiving and condition of work decisions, and nurse-physician collaboration. Nurse-physician collaboration had a statistically significant positive correlation with both overall caregiving and overall condition of work decisions. The sizes of the correlation were equal but small (r = .27, and .27, respectively, ps < .01) (see Table 18).

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Table 18

Correlation Matrix of Overall Caregiving Decisions, Overall Condition of Work Decisions, Leadership Competencies for Clinical and Administrative Issues, and Nurse-Physician Collaboration (N = 279)

	Overall caregiving	Overall condition of work	Leadership for clinical issues	Leadership for administrative issues	Nurse-physician collaboration
Overall caregiving	1.00				
Overall condition of work	.27**	1.00			
Leadership for clinical issues	.15*	.18**	1.00		
Leadership for administrative issues	.10	.18**	.58**	1.00	
Nurse-physician collaboration	.27**	.27**	.14*	.13*	1.00

Note. ** $p < .01$, * $p < .05$

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Research hypothesis three was reanalyzed to assess the regression estimates and to examine the total amount of variances in the participation in overall caregiving and condition of work decisions explained by leadership competencies for clinical and administrative issues and nurse-physician collaboration. Regression assumptions were met as evidenced by the following indicators. The correlations among independent variables were the same as in the primary analysis where each of the three phases was evaluated separately and indicated no multicollinearity. The mean of standardized residuals was zero. The Durbin-Watson statistics of the two regression models were 1.77 and 1.68, supporting that there was no correlation among the error terms. The scatterplots of standardized residuals and standardized predicted values indicated the constant variance of error terms. The scatterplots of standardized residuals and each independent variable showed that each independent variable was not correlated with the error terms. The normal p-p plots and histograms of standardized residuals supported normal distribution of the error terms.

Participation in overall caregiving decisions was regressed on nurse manager leadership competencies for clinical and administrative issues and nurse-physician collaboration (see Table 19). The model accounted for 7.7% of the participation in overall caregiving decisions and the model was supported (adjusted $\underline{R}^2 = .077$, $\underline{F}(3.275) = 8.748$, $\underline{p} < .0005$). Leadership competencies for clinical and administrative issues did not account for statistically significant changes in participation in overall caregiving decisions. Variations in nurse-physician collaboration accounted for statistically significant changes in overall caregiving decisions ($\beta = .256$, $\underline{t} = 4.393$,

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$p < .0005$) and the effect was moderate as evaluated by the magnitude of standardized coefficient.

Table 19

Summary of Simultaneous Multiple Regression Analysis for Variables Explaining the Participation in Overall Caregiving Decisions (N =279)

Variable	B	SE B	β	t	p
Leadership for clinical issues	.072	.045	.115	1.621	.106
Leadership for administrative issues	-.0007	.045	-.001	-.017	.986
Nurse-physician collaboration	.186	.042	.256	4.393	<.0005

Note. Adjusted $R^2 = .077$, $df = 3, 275$, $F = 8.748$, $p < .0005$

Influential outliers for this regression model were assessed. Nine cases had studentized residuals larger than ± 2.00. Twenty-three observations with leverage points greater than .021 were the same as those found in the regression model with separated phases of decision making. No observations had a Cook's distance higher than 1.00. When these influential outliers were deleted and the regression was run, the adjusted R^2 was .087 with an F ratio of 8.863 ($p < .0005$). The adjusted R^2 increased by 1%, indicating that the outliers had only a very small effect on the amount of explained variance.

Participation in overall condition of work decisions was regressed on nurse manager leadership competencies for clinical and administrative issues and nurse-

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physician collaboration (see Table 20). The model accounted for 8.8% of the participation in overall caregiving decisions and the model was supported (adjusted R^2 = .088, $F(3,275) = 9.955$, $p < .0005$). Leadership competencies for clinical and administrative issues did not account for statistically significant changes in the participation in overall condition of work decisions. Variations in nurse-physician collaboration accounted for statistically significant changes in the participation in overall condition of work decisions ($\beta = .241$, $t = 4.153$, $p < .0005$) and the effect was moderate as evaluated by the magnitude of standardized coefficient.

Table 20

Summary of Simultaneous Multiple Regression Analysis for Variables Explaining the Participation in Overall Conditions of Work Decisions (N =279)

Variable	B	SE B	β	t	p
Leadership for clinical issues	.058	.046	.088	1.249	.213
Leadership for administrative issues	.065	.047	.099	1.407	.161
Nurse-physician collaboration	.181	.044	.241	4.153	<.0005

Note. Adjusted $R^2 = .088$, $df = 3, 275$, $F = 9.955$, $p < .0005$

Influential outliers for this regression model were assessed. Twelve cases had studentized residuals larger than ± 2.00. Twenty-three observations with leverage points greater than .021 were the same as those found in the regression model with separated phases of decision making. No observations had a Cook's distance higher than 1.00. When these influential outliers were deleted and the regression was run, the adjusted R^2

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was .105 with an F ratio of 10.546 ($p < .0005$). The adjusted R^2 increased by 1.7%, indicating that the outliers had a small effect on the amount of explained variance.

In summary, when the three phases of each type of decisions were combined due to their high intercorrelations, both independent variables still explained a small amount of variances in overall caregiving and condition of work decisions. As in the primary analysis, nurse-physician collaboration is the only variable that accounted for statistically significant changes in overall caregiving and condition of work decisions and the effects were moderate.

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CHAPTER V

Summary and Discussion

This chapter presents a brief summary of the study and findings. Then, the study findings are discussed. Limitations associated with the study, including the design and the measure, are addressed. Implications for nursing science, nursing administration practice, nursing education, and health policy are addressed. Finally, suggestions for future research are presented.

Summary of the Study

The purpose of this study was to investigate the relationships among staff nurses' participation in three phases of the decision making process related to participation in caregiving and condition of work decisions, nurse manager leadership competencies, and nurse-physician collaboration.

Changes in technology, increasing patient complexity, and reconfiguration of financial systems have resulted in changes for nurses and their roles within acute care systems. Nurses have greater responsibilities in the care of patients which require greater autonomy and increased participation in decision making. Greater participation in decision making by nurses has been noted to result in more effective patient care planning and better outcomes (Acorn et al., 1997; Bucknall & Thomas, 1996; Mitchell et al., 1989; Przestrzelski, 1983).

Organizational structure and process are believed to influence nurses' participation in decision making (Anthony, 1999; Koerner et al., 1986). One dimension of structure is nurse manager leadership. As the health care system becomes more complex, nurse manager leadership is becoming of increasing importance (Byers & Klink, 1978;

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Duffield, 1992; Manfredi, 1996; Meighan, 1990). Nurse managers are responsible for a wide range of activities in managing their patient care unit that includes both clinical and administrative issues. When nurse managers are clinically competent, they serve as role models, mentors, and resources to staff nurses in their provision of patient care. Administrative leadership is often considered the primary responsibility for nurse managers (American Organization of Nurse Executives, 1992; Porter-O'Grady, 1995). Broadly speaking, these responsibilities and competencies include technical, human, and conceptual skills (Chase, 1994; Duffield, 1994; Katz, 1955; Vance & Wolf, 1986). As in their clinical role, nurse managers can facilitate nurses' role development by providing opportunities for greater autonomy and thus greater participation in decision making.

Similarly, selected organizational processes, such as nurse-physician collaboration, is believed to increase nurse participation in decision making. Collaboration is a process of working together with mutual trust, respect, and concern for each professional (Alt-White et al., 1983; Evans & Carlson, 1992). Within the collaborative practice model, information is shared and discussed, and plans of action are decided and evaluated. A collaborative environment may provide a general framework that supports and encourages nurses to become participating members in all phases of the decision making process.

Decision making is an important activity for nurses in the delivery of care and in the exercise of their professional role. The decision making process, as conceptualized by Mintzberg et al. (1976) and Simon (1977), was used in guiding this study. Nurses' participation in three phases of decision making was evaluated: identification (defining, recognizing, and interpreting the problem); design (generating and evaluating different

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methods to solve the problem); and selection (choose the alternative to be used in solving the problem) (Anthony, 1997). In their practice, nurses participate in two types of decisions: caregiving (decisions requiring recognition, determination, and action related to direct provision of care) and condition of work (decisions applying to groups of patients which are related to the clinical practice environment) (Anthony, 1997). The benefit of nurses' participation in decision making has been identified as influencing positive outcomes for nurses (Acorn et al., 1997; Bucknall & Thomas, 1996; Cavanagh & Coffin, 1992; Prescott et al., 1987; Przestrzelski, 1987), the organization (Cavanagh & Coffin, 1992; Doering, 1990; Shoemaker & El-Ahraf, 1983) and patients (Mitchell, et al., 1989).

While many factors are associated with nurses' participation in decision making, this study evaluated two important factors that have not previously been explored: nurse leader competency and nurse-physician collaboration. The framework used for this study was based on Donabedian's (1966, 1969, 1988) model for the evaluation of quality care and Holzemer's Outcomes Model for Health Care Research (Holzemer & Reilly, 1995). Donabedian focuses on the relationship among structure, process, and outcome while Holzemer extends the work of Donabedian by relating structure, process, and outcome with the three dimensions of client, provider, and setting. Based on this framework, the current study examined the influence of setting/structure (nurse manager leadership competency) and setting/process (nurse-physician collaboration) on provider/process (participation in decision making related to caregiving and condition of work decisions).

The current study intended to address two significant gaps in the nursing administration literature. Theoretically, existing studies have emphasized the

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relationships between structure and outcomes and process and outcomes. Little research exists that evaluates links between structure and process. Secondly, administrative studies have not included in the structure, process, and outcome framework the inclusion of the client, the setting, and the provider. This study extended the understanding of the structure and process links by examining not only the relationships among an organizational structure (nurse manager leadership competency) but also by evaluating an organizational process (nurse-physician collaboration) and a provider process (participation in decision making).

Secondary analysis of a primary data set of the VNPM study (Anthony, 1998) was carried out. The design of this secondary analysis was a non-experimental cross-sectional correlational descriptive design. The sample in this secondary analysis consisted of 279 full-time nonsupervisory registered nurses. These nurses worked on 28 medical and surgical adult patient units in two urban tertiary hospitals and one suburban community hospital.

The findings indicated that nurses had greater participation in the three phases of caregiving decisions than in the three phases of condition of work decisions. For caregiving decisions, there were small differences among the mean scores of identification, design, and selection. However, the confidence intervals of each phase did not overlap suggesting that participation in identification was greater than participation in design and participation in design was greater than participation in selection. For condition of work decisions, nurses had low participation across all phases. The mean scores of the three phases were slightly different with overlapping confidence intervals, which do not suggest that higher scores mean greater participation. The descriptive

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findings further indicated that nurses perceived a fairly high level of nurse manager leadership competency for administrative issues, which was greater than their perception of leadership for clinical issues. Nurses had a moderate degree of collaboration with physicians.

The finding of this secondary analysis partially supported the association between setting structure and provider process. The data indicated that nurse manager leadership competency for clinical issues was positively associated with participation in the identification, design, and selection phases for caregiving and condition of work decisions. Nurse manager leadership competency for administrative issues was positively associated with participation in identification, design, and selection for condition of work decisions but not for participation in caregiving decisions. The relationship between setting process and provider process was supported as evidenced by the positive association between nurse-physician collaboration and participation in identification, design, and selection of both caregiving and condition of work decisions.

The model explicating nurse manager leadership competencies for clinical and administrative issues and nurse-physician collaboration explained a small but statistically significant proportion of variance in all phases of participation in decision making for both caregiving and condition of work decisions. In each model, only nurse-physician collaboration positively contributed to greater participation in decision making. Both clinical and administrative leadership competencies had a nonsignificant contribution to participation in decision making.

For both caregiving and condition of work decision, there were high intercorrelations between all phases of decision making. To further explain the findings

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of this study, the mean scores for identification, design, and selection for caregiving were aggregated into a single score. Similarly, mean scores for identification, design, and selection for condition of work decisions were aggregated into a single score. A post hoc regression analysis was conducted to determine whether greater variance in participation in overall decision making was accounted for by nurse manager leadership competencies for clinical and administrative issues and nurse-physician collaboration. This revised model did not explain a substantively greater difference in participation in decision making than in the original analysis.

Discussion of Descriptive Findings

The findings from this study showed that staff nurses had greater mean scores for participation in decisions about patient care than for participation in decisions about their work environment. This is consistent with nurses' primary responsibility to provide direct patient care and enhance patient outcomes (Lamb-Havard, 1997). As direct providers of care, nurses encounter greater opportunities in their daily work to participate in decisions that directly affect patient care. Greater participation in patient care decisions is also consistent with others who have found that nurses not only have greater participation but express more satisfaction with participation in these decisions (Acorn et al., 1997; Bucknall & Thomas, 1996; Prescott et al., 1987).

Among caregiving decisions, the differences among nurses' mean score for participation in identification, design, and selection were small with nonoverlapping confidence intervals. Varying levels of participation in each phase for caregiving decisions may be related to the nature of the decision making phase and the nature of nursing practice. In practice, one of a nurse's predominant activities is assessment, which

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incorporates collecting information and identifying patient problems related to a patient's functioning, patterns, strengths and limitations, and concerns (Bellack & Edlund, 1992). Furthermore, nurses engage in patient related activities such as nursing rounds and nursing conferences which provide forums or avenues for staff nurses to share their ideas related to identifying patients' problems and to think about strategies to solve those problems. Therefore, nurses may have more opportunities to participate in identification and design. The finding of greater participation in the identification and design is consistent with Prescott et al.'s (1987), Kennard et al.'s (1996), and Anthony's (1999) studies in that nurses again may have more opportunities to contribute patient information to the healthcare team and to offer the recommendations to the team regarding options of treatment. Quality patient care decisions are made best by nurses who work directly with patients (Johnson, 1993). However, the decision to select the actions or alternatives may require physician involvement (Prescott et al., 1987), such as the decision to determine patient discharge which had a relatively low mean score of participation in selection in this current study ($\underline{M} = 2.85$). Staff nurses may have less opportunity for selecting the choice related to patient care. In practice, protocols for patient care may exist, such as protocols for prevention skin breakdown, for preoperative teaching, and for teaching patients about their medication and rehabilitation. Protocols may serve to limit involvement in decision making. Nurses can use these ready-made choices after identifying patient problems without having additional participation in designing alternatives or in selection.

Among condition of work decisions, staff nurses had lower participation across all three phases of decision making than for similar phases for caregiving decisions. Nurses

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may not want to be involved in decisions related to administrative issues such as the decisions about planning for the unit's yearly budget and developing and revising staff nurse job descriptions, which were the two decisions with lowest mean scores ($\underline{M}$ = 1.57 and 1.94, respectively). Staff nurses may prefer to be involved in decisions related to the work environment as a group rather than as an individual participation or may want little involvement in those decisions (Blegen et al., 1993). Staff nurses may not have adequate knowledge in administration, such as how to develop a plan for a unit's budget, and they may not have time to participate in these kinds of decisions. Moreover, practice models are being redesigned to include greater use of unlicensed personnel (Barter, McLaughlin, & Thomas, 1994; Crawley, Marshall, & Till, 1993). Thus, if nurses are spending more time supervising others, there may be less time for them to participate in decisions that go beyond patient care.

The findings indicated that staff nurses perceived that nurse managers had greater leadership competency for administrative issues than for clinical issues. Although nurse manager competency in clinical practice is used for mentoring staff nurses in providing direct patient care (Mills, 1991), nurse managers spend much time in unit management activities (Bunsey et al., 1991). In the current study, the role of the nurse manager was not to regularly perform direct patient care activities. Thus, staff nurses may have perceived the clinical leadership competency of the unit manager as less than their administrative leadership competency. Furthermore, in this study, unit managers were often responsible for two or three units and thus may not have been available for all clinical issues on a unit. Thus, it is presumed that the scope of nurse manager responsibilities prevents them from being present on a nursing unit all the time. Their

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lack of ready availability may limit their access to staff for clinical advice or consultation and thereby influence the perception of the staff that the manager has less clinical competence than administrative competence.

Nurse-physician collaboration, an organizational process, was also hypothesized, in the current study, to influence staff nurses' participation in decision making. The descriptive finding showed that the collaboration between nurses and physicians was moderate. The general health care delivery system is one that supports interdisciplinary collaboration. Hospitalized patients are generally admitted to the hospital sicker and discharged back into the community sicker (Hicks, Stallmeyer, & Coleman, 1992). Hospital length of stay is short and thus the need for nurses to collaborate in order to accomplish goals of treatment becomes of greater importance.

In addition to the nature of the setting, other factors may have an impact on nurse-physician collaboration. Those factors include nurses' self confidence (Davidhizar, 1993), trust and respect between both disciplines (Henneman, 1995), communication process reflecting the degree of open communication and less conflict (Alt-White et al., 1983), the availability of physicians on the unit (Baggs & Schmitt, 1997), nurses' perception of physician involvement (Wells et al., 1998), and the primary nursing system (Alt-White et al., 1983; Coluccio & Maguire, 1983). However, these factors were not included in the current study.

Discussion of Hypothesis Testing Findings

It was hypothesized that there would be a positive correlation between the scores of nurse manager leadership competencies for clinical and administrative issues and the scores of staff nurses' participation in the identification, design, and selection phases of

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decision making related to caregiving and condition of work decisions. The findings did not fully support this study hypothesis. Nurse manager leadership competency for clinical issues was positively associated with staff nurses' participation in the identification, design, and selection phases of decision making for both caregiving and condition of work decisions. However, the correlations were small (rs= .12 - .18). Nurse manager leadership competency for administrative issues was positively associated with staff nurses' participation in the identification, design, and selection phases of decision making for condition of work decisions but not for caregiving decisions. Similarly, the correlations were small (rs = .17- .19). Cohen (1988) posits criteria for defining the size of correlation, which is .10 = small, .30 = medium, and .50 = large. Statistically significant relationships do not guarantee their clinical significance. In this current study, the sizes of the correlation were smaller than r = .30, which Cohen (1988) states is in the acceptable range for the behavioral sciences. Small correlation may be statistically significant due to the large sample sizes (Munro, 1997). If the sample size is large, the null hypothesis indicating no relationship between variables may be rejected at any alpha level (Slakter & Suzuki-Slakter, 1991) and the alternative hypothesis indicating an existing relationship between variables may be accepted.

Clinical significance, or substantive or practical significance, as used by many authors (LeFort, 1993; LoBiondo-Wood & Haber, 1994; Ottenbacher, 1995), is the importance or potential importance of research findings to specific clients or population (LeFort, 1993). Clinical significance can be assessed by the magnitude of the effect size in the form of standardized scores, changes in the individual subject, comparing with norms, and social validation by clients, families, clinicians, or administrators (LeFort,

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1993; Ottenbacher, 1995). However, the decisions to consider the degree to which effect size is significant to clinical practice are based on judgments made by the researcher (LeFort, 1993). In this current study, small correlations were interpreted as having little clinical significance.

The nonsignificant regression coefficients for nurse manager leadership competencies for clinical and administrative issues in each model indicated that nurse manager leadership competencies had no influence on participation for any phases of either caregiving or condition of work decisions. Theoretically, nurse manager leadership competency was believed to facilitate nurses' participation in decision making due to their roles as mentors and developers of expert nursing practice (Arion et al., 1997; Darling, 1985a; Darling, 1985b; Kerfoot, 1994). A mentoring style facilitates the nurse manager and staff nurses working together as partners and provides for a sense of mutual respect and collegiality (Kerfoot, 1994). A sense of equality and respect in a partnership paradigm promotes staff nurses' confidence, thus making them feel comfortable to be involved in decisions related to their practice.

The administrative task of the nurse manager focuses on providing a link between the organization and the nursing staff (Oroviogoicoechea, 1996). Nurse managers play a crucial role in achieving the hospital's objectives (Sovie, 1994). They communicate the unit's and the organization's objectives to be understandable to staff and help their staff to share the vision of the organization (McNeese-Smith, 1993; Pedersen, 1993; Porter-O'Grady, 1995). An organizational vision provides staff both meaning and direction for work, which enhances staff value and energies to work to achieve organizational goals (Beckham, 1994). Nurse managers are developers who interact with staff in order to

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develop growth by teaching and learning important administrative skills (Arion et al., 1996) and to involve staff nurses in decisions affecting the unit (Arion et al., 1997). Involving staff in decision making empowers them to work effectively (Arion et al., 1997). Thus, developing the role of the nurse manager facilitates staff nurses to be involved in decisions on the unit.

In this respect, the nature of nurse manager competency may be more complex than assessed in this study. The effects of nurse manager leadership competencies on participation in decision making may not be direct effects or be affected by mediating factors. Other factors influencing staff nurses' participation in decision making, which were not included in the current study, may be important. These factors are nurses' autonomy (Alexander et al., 1982; Collins & Henderson, 1991; Dwyer, Schwartz, & Fox, 1992) and authority (Anthony, 1999), area of practice (Kennard et al., 1996; Prescott et al., 1987), and the nursing system (Prescott et al., 1987). These factors have a relationship with nurse manager leadership and participation in decision making. For example, nurse manager leadership behavior had a positive relationship ($\underline{r} = .34$, $p < .05$) with staff nurse perceived autonomy (Alexander et al., 1982); theoretically, autonomy was associated with decision making (Batey & Lewis, 1982; Jones & Ortiz, 1989; Singleton & Nail, 1984). Thus, nurse manager leadership competency may have indirect effects on nurses' participation in decision making, depending on nurses' autonomy. Some factors may have mediating relationships with participation in decision making such as area of practice. Nurses who work in different areas of practice (medical, surgical, intensive care, and other units) were found to have different levels of involvement in the plan of care (Kennard et al., 1996; Prescott, 1987). Therefore, types of units may have an impact on

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the relationship between nurse manager leadership competency and nurses' participation in decision making.

Nurse-physician collaboration was hypothesized to be positively associated with staff nurses' participation in phases of caregiving and condition of work decisions. The findings supported this hypothesis and the theoretical relationship between organizational process and provider process. Nurse and physician collaboration enhances nurse participation in decision making for patient care because of effective communication, mutual trust and respect, joint contributions of knowledge and expertise between the two professionals, and valuing each other's perspective and way of thinking (Alt-White et al., 1983; American Nurses' Association, 1980; Stapleton, 1998). Effective communication requires listening to each other, paying attention, and recognizing conflict (Stapleton, 1998). Mutual trust and respect involves trust and respect for each provider's clinical competence, knowledge, and uniqueness and value for each disciplinary perspective (Keleher, 1998; Stapleton, 1998). Moreover, in the collaborative model, nurses and physicians are colleagues who work together in a respectful manner, share knowledge about patient problems, and advocate themselves to provide patient care (Gianakos, 1997). This relationship may enhance nurses' involvement in decisions on the unit. The positive relationship found in this study indicated that greater collaboration between nurses and physicians was associated with greater nurse participation in decision making.

According to a two-dimensional model of interpersonal problem solving behavior proposed by Ruble and Thomas (1976), collaboration consists of a high degree of both assertiveness and cooperativeness during problem resolution. (Weiss & Davis, 1985). Thus, in collaborative practice model, nurses have to be actively assertive. An

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assertive nurse is confident, wants to share discussions, and interacts with others (Devereux, 1981; Johnson, 1992). In this respect, nurses' assertiveness may enhance their involvement in decision making on the unit. Another consideration is that, during the collaboration process, participation in decision making occurs between nurses and physicians. Decision making, which occurs in a collaborative process, may also serve to facilitate nurses' participation in decision making for general issues and in other process of care and activities such as nursing rounds and staff meeting. As mentioned earlier, collaboration between nurses and physicians may be promoted by other factors, which were not included in this study, such as physicians' or nurses' perception of nursing role (Devereux, 1981), nursing system (Alt-White et al., 1983), and staff nurses' self-confidence (Davidhizar, 1993). Perception of nursing role helps both nurses and physicians to clarify the scope of the nursing practice and to know what decisions or patient care activities need nurse involvement (Devereux, 1981). Nurses who work in a primary nursing system are responsible for a comprehensive care for a patient. Physicians have more contact with individual primary nurses to obtain patient information and to discuss the patient's problems (Alt-White et al., 1983). Confident nurses are comfortable in their role and believe that their knowledge, skill, and experience will result in successful nursing practice (Davidhizar, 1993) and thus should be more involved in decision making. In addition to these internal organizational factors, the external environment may also impact the degree of collaboration. With contemporary changes that lead to shortened length of stay and more care being delivered outside the acute care hospital, physicians and nurses may tend toward greater collaborative efforts in order to achieve patient goals within a shorter time frame.

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Past research has suggested that collaboration between nurses and physicians was associated with positive outcomes such as job satisfaction, low readmission and mortality rate, and length of hospital stay (Baggs & Ryan, 1990; Baggs et al., 1992; Higgins, 1999; Kearnes, 1994; Koerner et al., 1986; Lassen et al., 1997; Mitchell et al., 1989). Although this study did not evaluate outcomes, staff nurses' participation in decision making, enhanced by collaboration with physicians, would be anticipated to have positive effects on patient outcomes.

The regression model provides some evidence to suggest that setting structure and setting process had little influence on participation for decisions related to caregiving and condition of work. Low explanatory power found in this study indicated that the 92% to 94% of variance in phases of participation in decision making were unexplained. Surprisingly, the findings provide some evidence to suggest that the model explained slightly more variance in participation for condition of work environment, and that the effects were strongest when nurses participated in design and selection. The greater changes in participation in the design and selection phases for condition of work decisions may be due to the complexity of the decisions and those phases.

Condition of work decisions are decisions made for a group of patients or made to manage the clinical practice environment and other administrative issues, such as budgeting and staffing, to provide quality patient care (Anthony, 1997). Hence, these types of decisions require more information and communication with others. As a result, they may be more complex than caregiving decisions, which are decisions related to problems that occur in an individual patient-nurse encounter (Anthony, 1997). Mintzberg et al. (1976) described the design and selection phase as being complex and iterative

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procedures. Design requires searching ready-made solutions and developing solutions or modifying ready-made ones; selection comprises multistage, requiring investigation and evaluation of all alternatives (Mintzberg et al., 1976). Nurse manager leadership may provide nurses more opportunities for participation and more knowledge about clinical and administrative issues; nurse-physician collaboration may provide nurses with more useful information and knowledge about patients. Thus, both leadership and collaboration may enhance nurses' involvement in the design and selection phase of more complex decisions.

Within each significant test of the model, nurse-physician collaboration had a fairly moderate influence (β range = .210 - .271) in increasing participation in decision making. Among caregiving decisions, nurse-physician collaboration had a moderate influence in increasing participation in selection (β = .271), suggesting that nurse-physician collaboration becomes more influential in determining participation in selecting the alternative to a patient problem. Among condition of work decisions, nurse-physician collaboration also had a moderate influence in increasing participation in design and selection (β = .245 and .243, respectively) suggesting that nurse-physician collaboration also becomes more influential in determining participation in design and selection.

The low explanatory power may suggest that factors influencing participation in decision making may be more complex. Again, other important independent variables may have greater influence on participation in decision making but had been left out of the model. Those factors may provide greater explanatory power in participation in decision making.

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This study highlighted an interesting finding. The high intercorrelations among phases of decision making indicated that nurses may not be able to distinguish between the sequential phases of decision making: gathering information, developing alternatives and evaluating these alternatives (Mintzberg, 1976). Rather, nurses may view decision making as a simultaneous process, or perhaps, the likelihood of participation in one phase may increase the likelihood of participation in other phase. In this respect, staff nurses may not be able to discriminate their degree of participation in each phase of decision making. A post hoc regression analysis (combining identification, design, and selection phases related to caregiving and condition of work decisions) indicated that the model did not account for much greater variance in participation in overall decision making related to both caregiving and condition of work decisions than when each phase was evaluated separately. This result may be due to the professional bureaucracy within the hospitals in which coordination between health personnel relies on rules and procedures, hierarchy of authority, and standardization of skills and knowledge that predetermine their practice (Daft, 1998; Mintzberg, 1993). These professional bureaucratic characteristics may allow for nurses to be involved in decision making in a more global manner. Other considerations may be posited for this study's findings. There were high intercorrelations among phases of decision making and variations in the degree of participation between caregiving and condition of work decisions. This may suggest that perhaps the extent of participation may be influenced by the nature of the decision rather than the phase. Specifically, there may be a hierarchy of decisions that guides nurses' participation. That hierarchy may be influenced by the degree of autonomy inherent in each decision activity as similarly reported by Blegen et al. (1993).

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The difficulty in conceptualizing and measuring the study variables may likely contribute to the nonsignificant influence of nurse manager leadership on nurses' participation in decision making and the low explanatory power of the model. Because no previous studies have explored the relationship among the study variables, the conceptualization of the model was primarily based on theoretical understandings of the relationship between each concept. All study variables are multidimensional concepts. The measures used may not have adequately measured specific dimensions and the relationships among the variables. The difficulty in capturing each concept, from both a theoretical and measurement perspective, is summarized in the following sections.

There is conceptual ambiguity in the concept of decision making in nursing (Lauri & Salantera, 1998). As an organizational activity, participation in decision making has largely been studied and defined in terms of decentralization and autonomy (Acorn et al., 1997; Bucknall & Thomas, 1996; Mitchell et al., 1989; Przestrzelski, 1983; Shoemaker & El-Ahraf, 1983) which reflect nurses' authority and accountability for decision making. This study attempted to measure the extent of actual decision making behavior. Decision making behavior, in this study, participation, depends on the nature of the task and context (Corcoran, 1986; Davis, 1974; Devine & Kozlowski, 1995; Lauri et al., 1997, 1998; White et al., 1992). This study acknowledged differences in the nature of the task but did not include the context.

Participation in decision making was conceptualized along a continuum consisting of three phases: identification, design, and selection. Although they are theoretically distinct, this distinction did not hold empirically. This study highlighted the difficulties and issues in determining the optimum method of measuring participation.

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Perhaps more adequate measurement may include triangulated methodologies. The presence of conceptual decision making behavior ambiguity and adequate measurement strategies make it difficult to understand relationships between organizational factors and participation in decision making.

Theoretically, leadership competency is the ability of a leader to influence others, create visions, communicate, develop trust, challenge the process, enable and motivate others to act, and develop staff and stimulate the growth of staff (Bennis & Nanus, 1986; Kouzes & Posner, 1988; Manfredi, 1996). Leadership has been described as a competency of a nurse manager (Duffield, 1992). However, the literature has focused primarily on the investigation of managerial competencies of nurse managers such as technical, human, and conceptual skills (Chase, 1994; Duffield, 1994; Katz, 1955; Vance & Wolf, 1986). No studies have explored nurse manager leadership competencies, and only one study has explored the leadership competencies of hospital nurse executives (Dunham & Fisher, 1990). Thus, nurse manager leadership competency has not been adequately clarified.

In this study, nurse manager leadership competency was measured by two-single item questions, which were global. Although global single-item measures allow the respondents to bring the important aspects of the concept to the measure, the specific dimensions of leadership competency were not explicit. Thus, the nature of the relationship to participation in decision making may be difficult to interpret. Measures that are adequately able to measure specific aspects of leadership competency would help in clarifying what important aspects of leadership competency influence participation in decision making.

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Nurse-physician collaboration is a concept that has been shown to be important to nursing practice. The definition, influencing factors, and outcomes of nurse-physician collaboration have been enumerated (Alt-White et al., 1983; Baggs & Ryan, 1990; Baggs et al., 1992; Koerner et al., 1986; Lassen et al., 1997; Mitchell et al., 1986; Pike et al., 1993; Weiss & Davis, 1985). The common characteristics of collaboration between nurses and physicians are cooperativeness, assertiveness, trust, respect, and being accepted, respected, and recognized. However, the Collaborative Practice Scale for nurses (Weiss & Davis, 1985) measures only the cooperative and assertive behaviors of nurses in their collaboration with physicians. It is not designed to measure other collaborative behaviors that may influence their involvement in decision making in the unit. Moreover, the literature has suggested that nurse-physician collaboration is influenced by other factors, which were not included in this study. Those factors may affect the extent of nurse-physician collaboration. As a result, collaboration had moderate effects on participation in decision making, and the model explained small but significant amount of variance in participation in decision making.

The model guiding this study was Donabedian's approaches to assessment of quality of care (Donabedian, 1966, 1969, 1988) and Holzemer's Outcomes Model for Health Care Research (Holzemer & Reilly, 1995). In this study, it was posited that setting structure (leadership competency) would influence participation in decision making (provider process) and that nurse-physician collaboration (setting process) would influence participation in decision making. The small relationships found may provide a basis for modification of the framework. Collaboration consists of communication and working together between nurses and physicians. These processes imply that decision

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making may be an outgrowth of collaborative efforts. In order to better understand the relationship between nurse-physician collaboration and participation in decision making, further exploration of a framework where participation in decision making may influence collaboration is needed. The revised model may illustrate the relationships among nurse manager leadership competency, nurse-physician collaboration, and participation in decision making as shown in Figure 3.

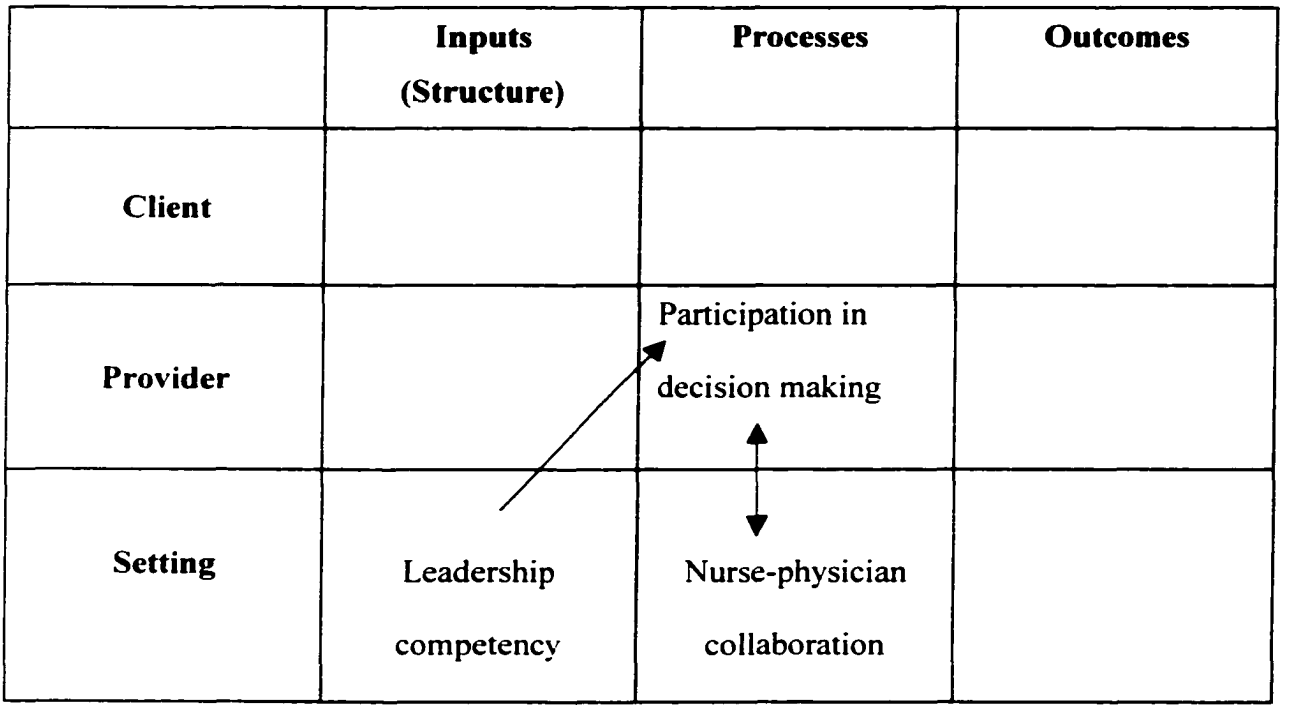

Figure 3. Revised Conceptual Framework

Limitations

A limitation of secondary data analysis is the use of the study variables as originally operationalized and existing in the original study. In the primary study, leadership competency was defined as an attribute of the nursing practice model and was

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measured as an overall perception of staff nurses which was very global. In the current study, leadership competency was used to examine its relationship with participation in decision making. A recommendation would be to add more items to examine more specific dimensions of the unit manager leadership role.

Another limitation of the study related to the single-item measure is the reliability estimates. A single-item measure's reliability can be estimated by test-retest. The test-retest of a single-item measure of leadership competency for clinical and administrative issues was not conducted in the primary study. Therefore, this measure may have measurement error that affects the results of the analysis.

In addition to the measurement limitations, a nurse manager who is responsible for more than one unit poses constraints on staff nurses' perceptions of the nurse manager's competency. A nurse manager who is responsible for only one patient care unit can more adequately address unit clinical and administrative issues allowing staff nurses to perceive her/his actual leadership competency.

Using cross-sectional correlational design, the study variables were measured at one period of data collection. Thus, causal relationships cannot be inferred. Moreover, the variables that are measured at a fixed point in time may be related more than the variables that are measured at different times (Grady & Wallston, 1988). This may result biases in the findings. A longitudinal study is needed to investigate multiple attributes of structure and process affecting participation in decision making. Nurses' participation in decision making, nurse manager leadership competency, and nurse-physician collaboration may be measured over time to determine their changes. The longitudinal study will provide

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essential preliminary research to generate hypotheses for quasi-experimental methods that test the effect of an implementation to enhance participation in decision making.

The target population of this study was nurses who were working in medical and surgical units. This limited the generalizability of the findings to other nurses who work on different units.

In the primary study, the 647 questionnaires were distributed and 306 questionnaires were returned. The response rate for the primary study was 47% and the usable response rate for the current study was 43%. Low response rates may introduce bias into the sample (de Vas, 1990; Fowler, 1993) and limit the generalizability of the findings of this study. The sample may not be a good representative sample of the nurses who are working in medical and surgical units.

Knowledge for the Discipline of Nursing

Implications for nursing science. The significance of the present study lies in its contribution to nursing science and nursing administration. First, the findings of significant relationships between nurse-physician collaboration and participation in decision making support the theoretical relationship between setting/process and provider/process posited in the Holzemer's Outcomes Model for Health Care Research (Holzemer & Reilly, 1995). The nonsignificant relationships between setting structure and provider process suggest that there may be other components in the model influencing provider process, such as provider structures or other setting structures.

Secondly, the findings provide knowledge for nursing administration science related to the influence of nurse-physician collaboration on staff nurses' participation in decision making. Although the exact nature of the relationships is not clear, nursing

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administrators may promote nurse-physician collaboration as a method to increase nurses' participation in decision making. This provides a beginning basis for nursing administrators to implement a theory-based practice model through more understanding about effects of collaboration on participation in decision making.

The current study contained a limited number of variables focusing on limited scope of the relationship among the study variables; the relationship was tested empirically. These characteristics contribute to middle-range theory development in nursing administration as related to factors influencing participation in decision making. In this respect, the contribution of this study's findings to nursing administration science helps to articulate the unique substantive knowledge within the nursing discipline, which is a guide to nursing administration practice (Smith, 1993).

Implications for nursing administration practice. Findings from this study supported the idea that encouraging staff nurses to collaborate with physicians will allow nurses to be involved in decision making. Interestingly, this relationship held for both caregiving and condition of work decisions. Creating an environment in which collaboration exists in clinical practice is an important role for nurse managers (Evans, 1994; Sovie, 1994). Nurse managers assess whether barriers to collaboration exist or not. Then, they facilitate activities that bring physicians and nurses together to promote collaboration between them. First, nurse managers themselves should be a positive role model by establishing good relationships with physicians and other healthcare professionals. The relationship includes mutual trust and respect and inspiring others to work toward a mutual goal of quality patient care. Although not evaluated in this study, a positive nurse manager-physician relationship may also influence staff nurses'

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collaborative relationship with physicians. Moreover, nurse managers can encourage discussions about concepts of professional practice such as professional roles and accountability among all providers by developing seminars or forums (Evans, 1994). Another strategy for nurse managers is to maximize the opportunity for staff nurses to become involved in activities where they can share decision making such as patient rounds with medical staff, being members on committees in which patient care decisions and policies are made. Another strategy is to develop clinical competence of staff nurses to be ready for active roles in collaboration (Evans, 1994) by promoting in-service education within the unit. Clinical competence provides self-confidence and self-esteem for staff nurses and is necessary for an effective collaborative relationship because nurses are already comfortable and confident in their nursing role (Davidhizar, 1993; Devereux, 1981; Evans, 1994; Johnson, 1992; Makadon & Gibbons, 1985).

The findings of statistically significant but small correlations suggested that nurse manager leadership competency may have indirect effects on staff nurses' participation in decision making. The relationship between nurse manager leadership competencies and nurses' participation in decision making may be mediated by other factors such as nurses' autonomy and nurses' preference for decision making. Enhancing nurse manager leadership competencies may enhance their influence on staff to work and accomplish the unit's goals. This may increase those mediators and then increase nurses' involvement in decision making. Nursing administrators provide strategies to develop the nurse manager competency in both clinical and administrative issues, such as inservice education programs or working with experienced preceptors. Hospital and nursing administrators' interaction with the nurse manager helps to increase communication about the hospital's

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goal. More understanding about the institutional goal will help nurse managers to clearly communicate hospital's and unit's goals with staff and motivate and encourage them to work toward the goals. In this respect, nurse managers enhance nurses' involvement in decision making particularly in work environment decisions such as decisions to develop in-service education programs or to choose new equipment and supplies for taking care a new type of patients added in the unit. Increasing nurses' involvement in decision making is believed to be an important factor in improving the quality of patient care (Mitchell et al., 1989). This is because nurses are closest to the patient and have an important impact on the quality of patient care and, in turn, the quality of organizational effectiveness (Irvine, Sidamin, & Hall, 1998; Krejci & Malin, 1997). Moreover, staff nurses' participation in decisions promotes a sense of authority and responsibility among them (Johnston, 1998) so that they are satisfied in their work and intend to provide effective patient care. Nurse administrators and nurse managers should be concerned that expectations, quality, and consequences of participation in decision making are understood clearly by all staff nurses (Grohar-Murray & DiCroce, 1992).

Implications for nursing education. For the most part, medical and nursing curricula are totally separated (Fagin, 1992). An important strategy to develop collaborative behaviors between nurses and physicians is to include the concept of collaboration in the nursing curriculum as well as the medical curriculum. In addition, joint education for practice is needed. Medical and nursing students should share courses related to skill and care management, such as a collaborative course for adult patient care to learn the scope of practice of each professional. These courses will increase communication and sharing experiences and feelings between physicians and nurses

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(Gianakos, 1997). Another strategy is participation in activities where physicians and nurses mutually communicate, such as a collaborative outreach program providing health care services to a specific population. This would promote mutual understanding and respect of both professionals increasing nurses' comfort and acceptance for greater participation in decision making in the workplace.

Implications for policy. Findings from this study provide useful information for healthcare settings to develop policies for promoting nurse-physician collaboration or interdisciplinary collaboration to increase involvement of nurses in patient care and condition of work decisions. To develop effective collaboration, hospital administrators may consider decreasing hierarchical hospital structure and increasing the development of peer relationships among healthcare professionals to have their own sphere of practice (Evans & Carlson, 1992).

Although nurse manager leadership competency has significant but small correlations with staff nurses' participation in decision making, health care settings should also be concerned with its importance because it may have indirect effects. Strategies such as orientations for nurse managers to know about goals and visions of the organization and inservice education or training for nurse managers to develop their leadership competencies, will enhance staff nurse involvement in decisions on the unit and influence patient outcomes.

Suggestions for Future Research

The small amount of explained variance calls attention to the existence of other factors that may influence staff nurses' participation in decision making related to caregiving and condition of work decisions. Those factors might be the nature of the

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practice setting, nurses' autonomy, and nurses' preference to make decisions; these factors should be included in future research.

Replication of the study of the relationship among staff nurses' participation in decision making, leadership competencies of nurses who are in administrative roles, and nurse-physician collaboration should be conducted in Thailand. The health care system, organizational culture, and sociocultural factors in Thailand are different from the United States and may result in different findings. However, the measures of the study variables have to be adapted or developed to be appropriate for the nature of caregiving and condition of work decisions and nursing administration in Thailand. To do this, qualitative research is needed to explore the nature of staff nurses' participation in decision making as well as leadership competencies of nursing administrators and collaboration between nurses and physicians in Thailand.

More research is also needed to explore the relationship among participation in decision making, nurse manager leadership competencies, and nurse-physician collaboration in staff nurses who are working in other units such as intensive care, pediatrics, and obstetrics. These units have different levels of patient illness, patient care activities, and conditions of work that may result in different findings.

There is no reported research that attempts to investigate the influence of collaboration on participation in decision making and outcomes. The relationships among nurse-physician collaboration, nurses' participation in decision making, and specific patient outcomes need to be tested to further the knowledge of relationships between structure, process, and outcome.

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Additional investigations using quasi-experimental design is needed to examine the effects of the implementation of a collaboration approach between nurses and physicians on the extent of staff nurses' participation in decision making in a control unit and an experimental unit. The difference of the extent of participation in decision making as well as collaboration before and after the implementation within a unit and between the two units should be compared.

Conclusion

This secondary data analysis study provides evidence to partially support the theoretical model of the relationship between an organizational structure and organizational process of health care and a provider process. Specifically, the study findings suggest that nurse-physician collaboration is an important factor affecting staff nurses' participation in decision making related to caregiving and condition of work decisions whereas nurse manager leadership competency is not. Although the model explained a small proportion of the variance in participation in decision making, nursing administrators should think of their responsibilities in promoting collaboration between nurses and physicians and in enhancing unit manager leadership competencies to increase staff nurses' participation in decision making. This study is a beginning step to develop the body of knowledge in nursing administration science. Further research is needed to clarify the relationship between structure and process and those factors contributing to staff nurses' participation in decision making.

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APPENDIX A

Information sheet to Participants

Dear Nurse Colleague,

We are conducting a study which examines nursing practice models in acute care settings. The objective of the study is to better understand factors that comprise unit based nursing activities. Attached is your copy of the Variations in Nursing Practice Models survey. Completion of the survey will take approximately 30 minutes. Your participation is very important to us.

The information you provide will be anonymous. Do not place your name on any portion of the survey. The results of the study will be reported in aggregate and at no time will your name, your unit, or the name of the hospital be identified with the study. Your participation is strictly voluntary and in no way affects your employment. You may stop completion of this survey at any time, however completed surveys are most beneficial to our research endeavor. There are no anticipated risks to your participation.

By completing the survey, you will indicate your consent to participate. Please place the completed survey in the box labeled "Nursing Practice Model Study" located adjacent to your mailbox. If you decide not to participate, please return the survey to the box unanswered. In addition, we would appreciate comments on the survey in general, or on particular items that were unclear. These comments can be written directly on the survey.

The information you provide will help to further the understanding of different factors that affect nursing practice models. If you would like a copy of the results please put your name and address on this sheet and return it to the survey collection box separate from your survey. This study was reviewed and approved by Case Western Reserve University. If you have any questions about the study, please feel free to call any member of our research team at 368-0462. Thank you for your participation, the attached coffee coupons are for your enjoyment.

Sincerely,

Mary Anthony, RN, Ph.D Pamela Monaghan, M.A. Nantawon Suwonnaroop, RN.

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APPENDIX B

Demographic Data

(For the current study)

1. How old were you on your last birthday? _____

2. How many years have you been employed as a registered nurse? _____

3. Please check the phrase that best describes your first nursing educational background:

_____[1] LPN/LVN _____[2] Associate Degree

_____[3] Diploma _____[4] BSN

_____[5] MSN _____[6] ND

4. What is the highest degree you have obtained?

_____[1] LPN/LVN _____[2] Associate Degree

_____[3] Diploma _____[4] BSN

_____[5] MSN _____[6] ND

_____[7] PhD in Nursing

a. If you have any other degrees, please list:

_____

_____

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APPENDIX C

Participation in Decision Activities Questionnaire (PDAQ)

In this part of the questionnaire, examples of decisions made by nurses are given and divided into two parts. The decisions in Part 1 are activities representing individual caregiving situations. Part 2 are activities that represent the working environment. For each decision activity, there are three statements that ask you to describe the extent of your participation in each of three phases of decision making.

PART 1

Below is a list of decision making activities that deal with providing **individual care to patients.** If these situations had arisen for you recently, to what extent would you have participated in each of the three phases of decision making? Please circle the answer that best describes the extent of your participation. There are no right or wrong answers.
Each decision situation has *three* questions; please answer all the questions.

***Please note**: Many of the situations below refer to a Unit or Agency. If you are a nurse working in an inpatient setting, the word unit would apply to the situation. If you are a nurse working in a home health or community setting, the word agency would apply.

ON THE NEXT PAGE IS AN EXAMPLE

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EXAMPLE

1. Mr. Gross has been admitted to your unit with a left sided weakness and with a history of being cognitively impaired. It is 5:00 in the morning. He is currently confused, banging on the side rails and yelling out. To what extent do you participate in the following decision making phases to prevent him from falling.

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	(2)= Little participation	2= Little participation
3= Some participation	3= Some participation	(3)= Some participation
(4)= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

1. Raising the issue means that you have defined, labeled and recognized the problem situation. Clarifying the problem means that you have confirmed the problem, interpreted it, and recognized factors contributing to the problem. In this clinical situation, raising the issue and clarifying the problem in this case could mean that you, as his nurse, have defined and recognized that Mr. Gross has the potential for falling because of his left sided weakness and history of confusion. You seek out additional information from the patient, family, and medical record to clarify the duration and nature of his symptoms. You conduct a physical assessment to determine whether or not any new symptoms are present. To the extent that you think you have *moderate participation* in this phase, circle number 4 as shown above.

2. Generating alternatives means that you have identified, enumerated or suggested different methods to deal with the problem. Evaluating alternatives means that you have examined and analyzed the alternatives. In this situation, generating alternatives could mean that you consider appropriate methods to prevent him from falling. These might include: moving him to another room closer to the desk, restraining him, and calling the physician for a medication order. To the extent that you think you have *little participation* in this phase, circle number 2 as shown above.

3. Selecting among alternatives means that you have chosen the alternative to be used in solving the problem. In this situation, selecting the alternative could mean that you have chosen what is to be done to prevent Mr. Gross from falling. To the extent that you think you have *some participation* in this phase, circle number 3 as shown above.

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Please answer this part of the questionnaire.

1. A patient in your care is experiencing pain. To what extent do you participate in the following decision making phases of managing the patient's pain.

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

2. A patient in your care is experiencing an illness or disability that affects his/her mobility. To what extent do you participate in the following decision making phases in preventing skin breakdown.

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

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3. A patient in your care is experiencing a sudden change in symptoms requiring immediate evaluation. To what extent do you participate in the following decision making phases in ordering diagnostic or laboratory tests.

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

4. A physician's order has been written for a patient in your care that raises a concern. You call the physician to discuss it. The physician states that he/she knows what they are doing and instructs you to proceed. Despite the conversation, you still have concerns about carrying out the order. To what extent do you participate in the following decision making phases of refusing to carry out the physician's order.

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

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5. Your patient is being given new medicine in the treatment of their medical condition. To what extent do you participate in the following decision making phases of teaching your patient (or their family) about their medication.

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

6. A patient in your care has been told by their physician that they need surgery. In conversation about the impending surgery, the patient (or their family) informs you that, she/he doesn't understand the risks associated with the surgery. To what extent do you participate in the following decision making phases of informing the patient (or the family) about the risks associated with surgery.

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

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7. You are conducting an initial assessment for a patient and have additional information about the patient or their family situation which is not part of their current reason for needing health care services. To what extent do you participate in the following decision making phases of consulting with physicians, dietitians, social workers, or other health care professionals.

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

8. A patient in your care has been diagnosed with fluid overload and has been controlled on a standard regime of diuretics. To what extent do you participate in the following decision making phases in determining discharge from your unit (agency).

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

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9. A patient in your care has been undergoing treatment for a chronic, life threatening condition. The patient has not responded to conventional treatment. Health care professionals have been urging the patient to undergo more therapy. After thoughtful deliberation, the patient (or their family) no longer wishes to continue treatment. To what extent do you participate in the following decision making phases in advocating patients (or their family) choice to refuse further treatment.

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

10. A patient is newly diagnosed with multiple sclerosis (or a chronic condition). To what extent do you participate in the following decision making phases in discussing the whole plan of care with the patient (or their family) and encouraging their input.

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

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11. The patient in your care has PRN orders to advance activity and diet as tolerated. To what extent do you participate in the following decision making phases in advancing physician orders for patient's diet and activity.

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

12. You have recently begun caring for a patient. In discussion with the physician, he/she tells you of not being informed about condition changes related to either their signs, symptoms, or laboratory values. To what extent do you participate in the following decision making phases in handling physician complains about patient care.

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

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PART 2

Below are a list of activities that deal with your **work environment.**
REMEMBER If these situations had arisen for you recently, to what extent would you have participated in each of the three phases of decision making.
Circle the answer that best describes the extent of your participation.
There are no right or wrong answers.
Each decision situation has three questions, please answer all the questions.

***Please note**: Many of the situations below refer to a Unit or Agency. If you are a nurse working in an inpatient setting, the word unit would apply to the situation. If you are a nurse working in a home health or community setting, the word agency would apply.

1. You have an interest in the psychological aspects of patients who have experienced a traumatic event. Your unit (agency) is going to receive a patient with neurological deficits. To what extent do you participate in the following decision making phases in presenting in-service education programs.

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

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2. A registered nurse representative is needed to serve on a nursing practice committee or work group. To what extent do you participate in the following decision making phases to serve on a nursing division committee.

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

3. The unit (agency) in which you work is planning to change the number of patients that it is providing service to. To what extent do you participate in the following decision making phases of planning of the unit's (agency) yearly budget.

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

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4. Your unit (agency) has monthly staff meetings. To what extent do you participate in the following decision making phases of determining staff meeting agendas.

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

5. There has been more patient incidents involving patient safety than usual on your unit (agency) in the past 3 months. You are wondering if there is a standard of care for patient safety. To what extent do you participate in the following decision making phases of developing/revising standards of nursing care for the unit (agency).

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

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6. In the past year, your unit (agency) has taken care of many patients with open and draining wounds. Several different brands of products designed to protect the surrounding skin have been used. You would like to find out which one is the best product to use. To what extent do you participate in the following decision making phases in conducting a study.

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

7. Your unit (agency) is adding a new type of patient to provide service to that will require the use of new material resources. To what extent do you participate in the following decision making phases in choosing new equipment and supplies for the unit (agency).

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

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8. In adding a new service, staffing requirements and system of care delivery must change. To what extent do you participate in the following decision making phases in determining the method of delivery of care and staff mix.

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

9. Your unit (agency) has decided to implement a clinical ladder system for nurses. To what extent do you participate in the following decision making phases in developing and revising staff nurse job descriptions.

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

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10. The nursing manager on your floor (agency) has just received the quarterly budget report. The manager calls a meeting to discuss the fact that the unit (agency) is over budget in most of the categories. To what extent do you participate in the following decision making phases in identifying causes for the budget variance.

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

11. JCAHO requires outcomes based quality assurance programs. To what extent do you participate in the following decision making phases in determining unit (agency) quality indicators or monitors.

Raising the issue and clarifying the problem (circle one)	Generating and evaluating alternatives (circle one)	Selecting among alternatives (circle one)
1= No participation	1= No participation	1= No participation
2= Little participation	2= Little participation	2= Little participation
3= Some participation	3= Some participation	3= Some participation
4= Moderate participation	4= Moderate participation	4= Moderate participation
5= Quite a bit of participation	5= Quite a bit of participation	5= Quite a bit of participation
6= A great deal of participation	6= A great deal of participation	6= A great deal of participation

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APPENDIX D

The Unit Manager Leadership Competency

To what extent does the **Unit Manager** (i.e. Head Nurse/Director) provide leadership for clinical issues?

minimally				a great extent
1	2	3	4	5

To what extent does the **Unit Manager** (i.e. Head Nurse/Director) provide leadership for administrative issues?

minimally				a great extent
1	2	3	4	5

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APPENDIX E

Collaborative Practice Scale (CPS)

	Always					Never
I ask MDs about their expectations regarding the degree of my involvement in health care decisions.	1	2	3	4	5	6
I negotiate with MDs to establish our responsibilities for discussing different kinds of information with patients.	1	2	3	4	5	6
I clarify the scope of my professional expertise when it is greater than the MD thinks it is.	1	2	3	4	5	6
I discuss with MDs the degree to which I want to be involved in planning aspects of patient care.	1	2	3	4	5	6
I suggest to MDs patient care approaches I think would be useful.	1	2	3	4	5	6
I discuss with MDs areas of practice that reside more within the realm of medicine than nursing.	1	2	3	4	5	6
I tell MDs when, in my judgment, their orders seem inappropriate.	1	2	3	4	5	6
I tell MDs of any difficulties I foresee in the patient's ability to deal with treatment options and their expectations.	1	2	3	4	5	6
I inform MDs about areas of practice that are unique to nursing.	1	2	3	4	5	6

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