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**THE RELATIONSHIP OF DECENTRALIZED
ORGANIZATIONAL STRUCTURE TO PERCEIVED ASPECTS
OF PROFESSIONAL NURSING PRACTICE ENVIRONMENT**

A dissertation submitted to the School of Graduate
Studies and Research in partial fulfilment
of the requirements for the degree of
Doctor of Philosophy in Education

by

Jo Logan

University of Ottawa
July, 1994



Jo Logan, Ottawa, Canada, 1994



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ABSTRACT

Despite evidence that organizational outcomes are negatively affected when professionals have limited decision making and their practice is constrained, little is known about the relationship of decentralized decision making (DDM) structures to the professional practice environment (PPE). In this study, the relationship of DDM to clinical nurses' perceived aspects of a PPE was examined. DDM consisted of the hierarchy of authority for work decisions and participation in strategic and unit group decisions. The PPE aspects of interest to administrators in complex organizations who are charged with organizational effectiveness include: control over practice, professional development, innovation activity, and peer relationships.

Using a correlational design, data were collected from a random sample of 320 clinical nurses employed in a university teaching hospital. Instruments used included the Index of Centralization and the Professional Practice Environment Scale. Multivariate procedures were used to test hypotheses and to construct models.

Authority for work decisions was positively related to the four aspects of PPE. Participation in decision making was positively related to all aspects except control over practice. Several individual and situational characteristics were found to moderate the relationship between DDM and PPE. Work pressure was statistically controlled. Model building showed that unit decision making was the most important variable in the relationships with professional development and innovativeness. Results contribute to organizational and nursing administration theory and are a useful guide for administrators to enhance PPE as a way to help manage constant change.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	i
ABSTRACT	ii
LIST OF TABLES	vi
LIST OF FIGURES	viii
CHAPTER I	1
The Study Problem	1
Background to the Problem	1
Statement of the Problem	4
Purpose and Research Questions	8
Significance of the Study	9
Assumptions	10
Summary	11
Organization of the Thesis	11
CHAPTER II	12
Review of the Literature	12
Decentralization	14
Structural Dimensions	14
Contextual Factors	19
Organizational Processes	21
Organizational Outcomes	23
Nursing Studies	25
Professionalism and Nursing Practice Environments	35
Professional Characteristics	36
Control Over Practice	39
Professional Development of Specialized Knowledge	40
Innovation Activity	41
Peer Relationships	42
Professionalism in Organizations	44
Summary	48

CHAPTER III	49
Conceptual Framework	49
Overview of Conceptual Framework	49
Changing External Environment and Organizational Complexity	50
Decentralization of Decision Making	52
Participation in Group Decisions	53
Authority for Work Decisions	53
Professional Practice Environment	53
Control Over Practice	54
Professional Development	54
Innovation Activity	55
Peer Relationships	56
Work Pressure	57
Individual and Situational Characteristics	58
Hypotheses	58
Summary	60
CHAPTER IV	61
Methodology	61
Research Design and Sample	61
Research Design	61
Sample	62
Measurement Instruments	63
Decentralization	63
Professional Practice Environment	66
Demographic Data Form	75
Data Collection Procedure	75
Human Rights Protection	76
Data Analysis	77
Preliminary Analyses	77
Examination of Relationships Among Study Variables	78
Summary	78
CHAPTER V	79
Results	79
Descriptive Statistics	79
Reliability and Validity	83
Reliability	83
Validity	85
Descriptive Statistics for the Instruments	92
Regression Analysis	94
Assumptions	95

Hypothesis Testing and Model Building	97
Hypothesis 1	101
Hypothesis 2	102
Hypothesis 3	106
Hypothesis 4	109
Summary	112
CHAPTER VI	113
Discussion	113
Findings and Implications for Practice	113
Decentralization and Control Over Practice	114
Decentralization and Professional Development	117
Decentralization and Innovation Activity	121
Decentralization and Peer Relationships	125
Summary of Findings	127
Summary of Practice Implications	128
Implications for Research and Theory	131
Nursing Administration Research and Theory	132
Organizational Research and Theory	140
Conclusion	143
REFERENCES	145
APPENDICES	157
Appendix A Information Letter to Subjects	157
Appendix B Index of Centralization	159
Appendix C Professional Practice Environment Scale	160
Appendix D Demographic Form	163
Appendix E First Follow-up Letter	165
Appendix F Second Follow-up Letter	166

LIST OF TABLES

1.	Items From the Subscale Unit Decision Making	67
2.	Reliability and Discriminant Validity for the School Organizational Climate Questionnaire	69
3.	Aspects of a Professional Practice Environment	70
4.	Items From the Dependent Variable Subscales Control Over Practice, Professional Development, Innovativeness and Peer Cohesion	71
5.	Subscale Items for the Extraneous Variable Work Pressure	74
6.	General Characteristics of Study Participants	80
7.	Characteristics of Participants' Work	82
8.	Cronbach Alpha Reliability Coefficients for Internal Consistency of Measures (N = 320)	84
9.	Factor Loadings of Items on the Index of Centralization	87
10.	Model Fit Indices and Related Statistics for Confirmatory Factor Analysis of the Index of Centralization	88
11.	Factor Loadings of Items on the Professional Practice Environment Scale	90
12.	Model Fit Indices and Related Statistics for Confirmatory Factor Analysis of the Professional Practice Environment Scale	91
13.	Descriptive Statistics for the Subscales of the Index of Centralization and the Professional Practice Environment Scale	93
14.	Pearson Correlation Coefficients for Relationships Among Decentralization, Control Over Practice, Professional Development, Innovativeness, Peer Cohesion, and the Extraneous Variable Work Pressure	99

15.	Moderated Relationships Between Unit Decision Making, Hierarchy Authority, Participation in Decision Making Regressed on Professional Development	104
16.	Moderated Relationships Between Unit Decision Making, Hierarchy Authority and Professional Development	105
17.	Changes in R^2 for Unit Decision Making and the Extraneous Variable Work Pressure with Innovativeness	108
18.	Moderated Relationships for Unit Decision Making, Hierarchy of Authority, and Participation in Decision Making Regressed on Innovativeness	109
19.	Moderated Relationships Between Unit Decision Making, Hierarchy of Authority and Peer Cohesion	111

LIST OF FIGURES

1.	Conceptual Framework	51
2.	Modified Conceptual Framework	134
3.	Proposed Conceptual Framework for Future Research	137

CHAPTER I

The Study Problem

In this chapter the study problem is introduced. The background to the problem is discussed and is followed by the problem statement, the study purpose and research questions. In conclusion, the significance of the study and the underlying assumptions are presented.

Background to the Problem

Decentralization of decision making has long been considered important for meeting the challenge of increased organizational complexity and environmental change. As well, it appears necessary for achieving the long term goal of organizational survival. The advocacy of a decentralized organizational structure has increased as change has become more rapid and continuous (Drucker, 1988; Slater & Bennis, 1990). Decentralization refers to the point of authority for and participation in decision making within an organization (Hage, 1965, 1980). There are two essential elements to decentralized decision making: authority for one's own work decisions and participation in work-related group decisions (Hage, 1980). Work-related group decisions can be separated into strategic decisions about resource allocation and policy

formation, and decisions about more localized work activities (Hage, 1980). The purpose of decentralization is to place decision making at the most appropriate level of the organization to increase the response to change and to make use of specialized knowledge. Because a decentralized organizational structure provides authority for work decisions and employee participation in decision making, it has particular relevance to organizations dependent on professional employees who have specialized knowledge and judgment.

Professional employees, in particular, have a need to make decisions about their specialized work and to participate in group decisions about their work environment. Service organizations, such as education and health care in which the majority of employees are professionals, are turning to decentralization as a means to manage change and complexity and to ensure effective practice. Hughes (1990) lists decentralization as a trend in education. Barhyte, Counte, and Christman (1987), Di Angi (1989), Rostowsky (1980), and Wellington (1986) have noted the value of decentralization for hospitals employing professional nurses. Discussing the link between professional work and organizational success, Benveniste (1987) suggested that organizational effectiveness depends on structures that permit professionals to fully use their specialized knowledge and abilities, especially problem solving and adaptability, which are crucial to the organization. Professionals bring to an organization the results of formal education and socialization which enable them to assess and intervene appropriately (Calkin, 1984). Because professionals require different organizational structures and control processes (Drucker, 1988), the

administrative challenge is to provide a structure which contributes to those aspects of professionalism that are critical for organizational success. Professionals require a working environment in which they have control over their practice, can continue to develop specialized knowledge, and can make changes in order to improve the client service which is both an organizational and professional goal. These professional aspects contribute to organizational success and, therefore, hold the attention of administrators (Benveniste, 1987; Drucker, 1992; Greco, 1992). This is increasingly important in professional organizations that are becoming more complex (Von Glinow, 1988) and, as such, is important in university teaching hospitals employing professional nurses.

Tertiary care university teaching hospitals are especially complex because education and research foci are added to the patient care mandate and because of the number of highly technical services offered (Zuckerman, D'Aunno, & Vaughan, 1990). The organizational sub-unit with the largest number of professionals within a hospital is the nursing department which consists of hierarchical, functional, and clinical specialties. Increased organizational complexity has increased complexity in the work of nurses (Ringerman, 1990). This is particularly true for the professional clinical nurses who provide the direct patient care. For example, the increased number of medical specialties, each associated with its own technology, procedures, and problems, require additional knowledge and skill to provide specialized care to patients. Clinical nurses are those who require the authority to act concerning patient care and to make either direct or indirect decisions in this regard (Althaus, Hardyck,

Pierce, & Rodgers, 1981). Decentralization is a style of organization suggested to support authority at the practitioner level (Althaus et al., 1981).

Decentralization has the potential to affect those aspects of a professional practice environment of most use from an administrative point of view, for example, continual learning or innovation. Decentralization of decision making is important to organizational success and survival because it may be the structure of choice for establishing a work environment in which professionals can make their maximum contribution to goal achievement. The focus of this study is decentralization of decision making for professional clinical nurses within the context of a university teaching hospital.

Statement of the Problem

Unfortunately, decision-making authority at the clinical nurse level is a structural feature not commonly available since most hospital nursing departments have highly centralized decision-making structures (Wells, 1990). This situation and unsatisfactory working conditions resulted in a nursing shortage beginning in the mid-1970s in the United States and mid-1980s in Canada (Meltz, 1988; Rajkumar, 1990; Wells, 1990). Findings from research on the shortage revealed the desire by nurses to have more decision-making authority and increased participation in decisions to use their specialized knowledge (Attridge & Callahan, 1990; Wandelt, Pierce, & Widdowson, 1981). However, nurses are often thwarted in their attempts to use their professional knowledge and skills by their employing institutions (Thompson, 1990). Attridge and Callahan (1989) noted that there is evidence to indicate that nurses'

workplace conditions are deteriorating in Canada. Organizational structures that are rigid, hierarchical, and provide little opportunity to participate in decision making are seen to be a source of major problems (Lowe & Northcott, 1986). Deteriorating workplace situations are associated with stress and turnover, particularly in acute care hospitals. Nurses experience limited control over their practice because of strict supervision and lack of autonomy over work (Lindsey & Attridge, 1989; Monnig, 1978). In addition, nurses perceive barriers to putting knowledge into practice and inadequate professional growth opportunities (Jenny, 1982; Scheller, 1993). Gott and O'Brien (1990) noted that nurses have too little authority and autonomy to implement change against resistance in their work environment. An inadequate work environment has been associated with unsatisfactory peer relationships (Attridge & Callahan, 1990). Peer relationships are essential to support learning and work. To provide quality patient care and a caring environment the health care system's traditional structure must be recast (Schattschneider, 1992).

Research on the nursing shortage convinced policy makers and practitioners that practice environments in acute care hospitals did not provide adequate participation in decision making nor sufficient authority for work decisions. Thus, the practice environment did not support and frequently constrained the level of professionalism expected of nursing staff. The evidence regarding the need to address the shortage problem with increased participation in decisions was coupled with the findings of studies that showed the few hospitals with no nursing shortage were highly decentralized and had in place other elements to support aspects of professional

practice, for example, peer review (Kramer & Schmalenberg, 1988a, 1988b; McLure, Poulin, Sovie, & Wandelt, 1983). Developing organizational structures to support the professionalism of nursing was viewed as one strategy to resolve the nursing shortage and to achieve the goal of effective health care outcomes (Wells, 1990).

Following the example of those few organizations where professional clinical nurses were seen as essential to provide care in complex patient situations, a small number of hospitals have attempted decentralization in order to facilitate professional practice (Barhyte et al., 1987; Clifford, 1990; Valentine, 1992; Wellington, 1986; Zelauskas & Howes, 1992). Although much has been written about decentralization, there is limited empirical evidence of the results within a nursing context. The limited research is a serious concern because changing an organization's structure from highly centralized to decentralized requires considerable resources at a time when they are severely constrained.

Of the limited number of studies on decentralization in a nursing setting, very few have focused on the clinical group. The majority of studies within a nursing context have used a nurse manager sample, making generalization to the clinical staff limited. There is little evidence about the association of decentralized decision making to environmental support for aspects of professional practice for clinical nurses. In order for decentralization in a hospital to be effective it must include the professional clinical nurses. Clinical nurses are important because they are the largest group of professional nurses and they provide the direct patient care. They are in a position to initiate changes in patient care and to suggest system innovations that can benefit the

organization. The quality of patient care has been linked to a healthy work environment and nurse satisfaction (Attridge & Callahan, 1989). Despite the link to important outcomes, there exists little empirical evidence regarding the effectiveness of decentralization as a means to promote a work environment which supports aspects of professional practice for clinical nurses. Furthermore, research on decentralization has seldom focused on the types of decisions that employees, including nurses, wish to participate in making, although there is some evidence that this affects outcomes (Conway, 1976; Dwyer, Schwartz & Fox, 1992; Grinyer & Yasai-Ardekani, 1980).

Also, there is insufficient research examining the link between decentralization and those elements in the professional working environment important for organizational success. Some links between organizational structure and professionalism have been examined (Corwin, 1961, 1965; Hall, 1968; Synowicz, 1987); however, the aspects of professionalism selected by investigators are more of interest to a profession as a whole than to administrators seeking organizational effectiveness. The aspects of professionalism which are most important from the organizational perspective are control over practice, professional development to increase specialized knowledge, innovativeness to change practice, and peer relationships to support professionals in their continued learning and in their work. Professionals who are in control of their practice and who are continuously learning are in a better position to innovate and refine their practice and to provide support for their peers in these activities. Therefore, the professionals are more likely to adapt to external change effectively. Thus, these aspects of professionalism are of considerable

interest to administrators.

The limited number of empirical studies on decentralization in relationship to professional practice environments makes it difficult to draw conclusions. The methods used and particularly the measurement instruments have limitations that preclude extensive generalization from the findings. The limited theory to guide research on the effects of decentralization of decision making on professional practice has made integrating the findings of various studies difficult. Further, the limited theory is insufficient to inform administrative practice.

Purpose and Research Questions

The purpose of this study is to explore the relationship of decentralized decision making to nurses' perceptions of aspects of professionalism in their work environment, specifically, control over practice, professional development, innovativeness, and peer relationships. Although there has been some effort to investigate the relationships between decentralized organizational structure and aspects of professionalism, the aspects of professionalism selected, for example, the sense of calling to the field, were not necessarily of use to promote the organization's response to continuous change. More research is needed to answer questions about the extent to which a decentralized organizational structure contributes to professionalism by establishing a practice environment in which the knowledge, skills, and values characteristic of professional behaviour can be used and enhanced.

Systematic inquiry is necessary to answer the following question:

What is the relationship between decentralization of decision making and selected

aspects of a professional practice environment, specifically, control over practice, professional development, innovativeness, and peer relationships?

- a) What is the relationship between decentralization of participation in group decisions and selected aspects of a professional practice environment?
- b) What is the relationship between decentralization of authority for work decisions and selected aspects of a professional practice environment?

Significance of the Study

Since effective organizational structure and professional practice are important to organizational outcomes, they are important topics of study in order to answer questions about their relationship. Decentralized structures within health care can be expected to increase with the continuous rise in organizational complexity (Drucker, 1988) and with strengthened professionalism in nursing. University teaching hospitals, faced with limited health care resources, a more consumer oriented and elderly patient population, increased medical specialization, and a more knowledgeable professional nursing group, are no exception (Tregunna, 1991).

Increased nursing professionalism is important to the organization since professionals behave predictably in uncertain and complex situations (Benveniste, 1987). Limited research exists on the perceptions of professional clinical nurses involved in changes to strengthen professional practice. Information is needed which helps to clarify and test the influence of a decentralized decision-making structure on aspects of professional nursing practice at the clinical level. Knowledge of the structural influence on aspects of the professional practice environment will contribute

to optimizing the professional behaviours important to organizational outcomes.

Supported by an appropriate organizational structure, professionals are challenged to continuously develop their specialized knowledge and skills and to refine their practice in order to meet the professional mandate to provide a unique service.

Knowledge of the decentralized structure and professional practice environment relationship will contribute a useful extension to organizational theory which can be used to improve research and practice. Understanding the relationship of decentralization to aspects of practice that may increase the speed and quality of the organization's professional response to change is essential. Findings may prevent administrators from making ineffective and costly changes while seeking outcomes of decentralization that are merely conjecture (Ringerman, 1990).

Assumptions

For any organization or organizational subunit, a structure can be designed to fit its circumstances (Bolman & Deal, 1991). The nursing department is viewed as an interdependent subunit of the larger organization. Each subunit influences effectiveness directly or in contribution with other subunits. This position is compatible with that of Thompson (1967) and Goodman and Pennings (1977) on subunits and the coordination among them. Selecting an appropriate organizational structure is part of the administrative planning process and is done prior to other efforts to ensure effective functioning, with the understanding that the form will continue to evolve.

Summary

In this introductory chapter, the background to the problem under study, a statement of the problem with its significance, the research questions, and finally, the assumptions underpinning the study were presented. The need to respond to the rapid pace of environmental change has created an increased need for most administrators to incorporate responsibilities for education and staff development. Administrators are looking to decentralized decision-making structures as a means to meet staff needs and to enhance the organizational response to change and increased complexity. Professional employees, in particular, require a structural design which will support their practice. Decentralization of decision making has been suggested as a possible way to achieve this goal. This is particularly relevant to complex university teaching hospitals which depend on professional nurses to provide most of the direct patient care. Little research evidence exists to support claims that decentralized decision making will facilitate those aspects of a professional practice environment which are important from the organizational perspective.

Organization of the Thesis

Chapter II is a review of the literature on the central variables of the study, decentralization and professional practice environments. In Chapter III, a conceptual framework for the study is presented. A description of the research design, measurement instruments, and data collection procedures and analysis are outlined in Chapter IV. This is followed by a presentation of the results in Chapter V. The thesis is concluded in Chapter VI with a discussion of the findings.

CHAPTER II

Review of the Literature

In this chapter, a discussion of decentralization as organizational structure is presented. This discussion is followed by a review of theory and research on those aspects of a professional practice environment of interest in this study: control over practice, professional development, innovation activity, and peer relationships. The chapter is concluded with a section on professionalism in organizations.

Organizational structure has long been and continues to be of interest in attempts to explain complex organizations. Structural contingency theory holds that for an organization to be effective there has to be a good fit between its structural design and the conditions of its environment (Pennings, 1992). Any organizational structure change made in response to the external environment affects internal processes and outcomes as well as other structural elements. In this section a presentation of empirical work on the nature of organizational structure and research which relates decentralization to other structural dimensions, contextual factors, process elements, and outcomes is examined.

From a review of the earliest theories, it is apparent that structural components have played a central role in the understanding of organizations. Max Weber (1947) in his classical theory of bureaucracy defined the following dimensions of bureaucratic organizations: a division of labour based on functional specialization, a set of

standardized rules and procedures for the conduct of the office, a hierarchy of official positions, written records of formalized acts, rules, and decisions, and the degree of centralized control. Other authors posited that organizational structure comprises multiple dimensions including complexity, centralization, and formalization (Hall, 1986); complexity, centralization, formalization, and stratification (Hage, 1965, 1980); specialization, centralization, formalization, standardization, and configuration (Pugh, 1973; Pugh, Hickson, Hinings, & Turner, 1968a, 1968b). Although the elements are often defined and operationalized somewhat differently, the concept of centralization is fundamental to all perspectives. Centralization, which refers to the locus of and participation in decision making within the organization (Hage, 1965, 1980), is the structural feature of interest in this investigation. The degree of centralization can be seen on a continuum from high to low. Low centralization is termed "decentralization" and this term has commonly replaced the word "centralization" which was used in early theory and research to describe the concept. The two essential elements in decentralization are the authority for one's work decisions and participation in group work-related decisions (Hage, 1980). For a long time, decentralizing decision making has been considered an important structural change to achieve desired outcomes in organizations, including long term survival (Bennis, 1966; Slater & Bennis, 1990). Drucker (1988, 1992) suggested that decentralization will become even more critical in future organizations as the rate of change increases. In the next section, a review of selected empirical work on the topic of decentralization as it relates to this study is presented.

Decentralization

The reviewed studies were chosen from organizational and nursing literature. In these studies, the concept of decentralization has been examined in relation to other structural elements, to context, and to various processes and outcomes.

Structural Dimensions

Theory development related to the structural aspects of organizations continued during the 1960s. Although the utility of the findings from these studies may be limited by their age, this research laid a valuable basis for work that followed. The association between organizational structure and other structural features was the focus of one line of inquiry. Blau, Heydebrand, and Stauffer (1966) found that high centralization was related to increased complexity only if the staff is not professional. Pugh et al. (1968a, 1968b), Child (1972), and Mansfield (1973) suggested that centralization was negatively related to complexity and formalization. The finding on centralization and complexity was supported by Hage and Aiken (1967a) but the finding on centralization and formalization contrast with those of Hage and Aiken (1967a) and Glisson (1978). In the latter studies it was found that a centralized hierarchy of authority was positively correlated with formalization or procedural specification.

An important extension to understanding of organizational structure was made by Hage (1965) who developed an Axiomatic Theory of Organizations within the paradigm of structural-functionalism. Eight organizational variables were defined: complexity, centralization, formalization, stratification, adaptiveness, production,

efficiency, and job satisfaction. Hage and his colleagues conducted a series of studies to test the Axiomatic Theory of Organizations (Hage & Aiken, 1967a, 1967b, 1969; Hage, Aiken, & Marrett, 1971; Hage & Dewar, 1973). The Axiomatic Theory of Organizations was updated by Hage (1980) taking into account relevant research and current organizational theory. The variables were clustered into the following blocks; complexity, bureaucratic, change, and productivity.

One of the strengths of the Axiomatic Theory of Organizations is the explicit stipulations of dysfunctions and internal contradictions. For example, the higher the centralization, the lower the job satisfaction but the greater the efficiency (Hage, 1980). This notion of internal contradictions in goals had not been made explicit before. Hage (1980) claimed that each of the eight variables is open to the environment or other variables in some larger system and change in one variable affects the other seven variables (p. 41). Thus complexity may increase as a consequence of environmental disturbances and this change impacts on the other seven variables.

While providing a comprehensive organizational theory useful for linking structural elements to outcomes, Hage does not use process as a key element and only hints at internal power and status struggles. The Axiomatic Theory of Organizations, as a result, does not account for the internal environment. The internal environment supports or hinders professionals in their practice and efforts to meet professional and organizational goals. The Axiomatic Theory of Organizations implies that decentralized environments equate to positive professional practice environments and

directly lead to the specified outcomes. Given that change implementation in complex organizations can be unpredictable for many reasons and a strategic plan to decentralize may not reach the lower levels of the organization in due time or at all, the lack of consideration of the practice environment as a separate component represents a significant omission in the Axiomatic Theory of Organizations. This omission of a critical element in organizations is an important focus of study if the links between structure and function are to be understood.

Also embedded in this general theory is the implication that professionals behave in a similar manner regardless of setting, for example, schools, hospitals, or engineering firms. This notion requires further study. Research on organizational dimensions in the educational sector suggest that elements are not the same for all organizations (Holdaway et al., 1975). These authors suggested that particular classes of organizations have particular, though similar, forms of decision-making authority and this makes any measure of centralization less meaningful than other structural measures across widely diverse organizations.

Hage and Aiken (1967a) found empirical support for the notion that organizational complexity resulting from an increase in specialization and number of professionals was positively related to decentralized decision making. They conducted a study to determine whether centralization of power tended to be associated with high formalization and low complexity. The research was carried out in health and welfare organizations and emphasized the professional backgrounds of employees. The agencies varied in staff size from 12 to several hundred and were staffed largely by

professionally trained personnel. The units of analysis were organizations, not individuals. Information from respondents was pooled to reflect properties of the 16 organizations as a unit. The properties were then related to one another.

Constructs were operationalized as follows. The distribution of power was measured in two ways: 1) the index of participation referred to participation in decision making represented by how much occupants of various positions participated in decisions about the allocations of resources and the determination of organizational policies; and 2) the index of hierarchy of authority, referring to the organizational level at which decisions involving the actual work or duties associated with each social position are made. The two measures of distribution of power are strongly interrelated. Decentralization refers to the delegation of authority for decision making to the operational level and the amount of participation in decision making.

Formalization represents the use of rules in an organization. The two indicators of formalization included job codification and rule observation. Job codification represents the degree of work standardization while rule observation is a measure of the latitude of behaviour that is tolerated from standards. Hage and Aiken (1967a) interpreted complexity to mean at least three things: the number of occupational specialities, the professional activity, and the professional training. Participation in decision making was strongly related to complexity and was weakly related to degree of formalization. The indicators of high complexity - professional training and professional activity - had respective correlations of .68 and .74 with the indicator of low centralization - participation in decision making.

Although these findings supported other findings regarding relationships of decentralization, the measurement of professional activity was limited to membership and actions associated with the formal professional organization and did not include other professional activities which may be more important indicators of complexity from an organizational perspective. The aggregation of data to one score for the organization resulted in considerable loss of data that may have relevance for explaining structural relationships. Despite the limitations, this study contributed important knowledge about organizational structure and various criterion variables.

Glisson (1978) developed a path analysis of data from 30 human service organizations. Hage and Aiken's (1967a) definitions for two dimensions of centralization and formalization were used; however, both concepts were measured differently. Data were also gathered on division of labour, procedural specification, and measurements of technological routinization. Glisson found that hierarchy of authority, a dimension of centralization which measures authority for work decisions, correlated with procedural specification, $r (.88)$. He argued that the management's manipulation of structure to decentralize contributed to less routinized approaches to patient care. Based on these findings, Glisson concluded that non-routinization was a dimension of a human service organization.

The research on decentralization and other structural dimensions is conflicting and, therefore, it is difficult to draw conclusions. Some studies found centralization positively related to complexity, others found it was negatively associated with complexity. A similar situation exists for the studies in which the relationship between

centralization and formalization was examined. The explanation for these conflicting results may lie in the differences in the context and types of organizations studied and the way the variables were defined. In the next part of the literature review the association of decentralization and contextual factors is presented.

Contextual Factors

Concurrent to inquiry into the relationship of organizational structure and other structural factors was a focus on the association of decentralization to contextual factors. Pugh et al. (1968a, 1968b, 1969) conducted a series of investigations to examine the relationship of contextual factors and organizational structure. They used seven concepts of organizational context including origin and history, ownership and control, size, charter, technology, location, and dependence on other organizations. These constructs were analyzed and operationally defined scales were constructed. The investigators used a multivariate factorial approach to examine the variables. Forty-six randomly sampled organizations of different types were studied with a cross-sectional survey design. Findings suggested that size and technology had a strong positive relationship with structuring of activities; dependence and location correlated strongly and positively with concentration of authority; the operating variability of charter scale had a strong positive relationship with line control of workflow. Pugh et al. (1969) found a positive relationship between centralization and size of the parent organization, and a negative relationship with the age of the organization. The Aston group (Pugh et al., 1969) made little attempt to develop a theory of organizations; however, they contributed significantly to defining and

operationalizing a large number of variables important to the topic.

Hage and Aiken (1969) investigated the relationship between organizational technology and the social structure and goals. The concept of organizational technology was based on the work of Perrow (1967) who suggested that one dimension is the routineness of work. Hypotheses relating four aspects of social structure and two aspects of organizational goals with the degree of routine work were tested. The dimensions of social structure were defined according to the Axiomatic Theory of Organizations (Hage, 1965) and included centralization, formalization, stratification, and complexity. Findings indicated that the social structure of organizations with more routine work was more centralized, more formalized, and had less professionally trained staff; no relationship with stratification was found.

Mansfield (1973) found large organizations were more likely to have decentralized decision making, a result that conflicted with the finding of Pugh et al. (1969). In an effort to examine the different results, Donaldson, Child, and Aldrich (1975) noted organizational status, defined as whether the organizational unit is a whole or a subunit, affects the extent of the relationship of degree of centralization. These findings suggest that relationships which exist for the total organization may not hold for individual subunits and hence it is important to study these associations for different organizational subunits. These investigators urge caution in generalizing from a sample that is heterogeneous on status.

The studies on decentralization and contextual factors reviewed in this section suggest that high levels of centralization were found in large organizations and those

characterized by routine or predictable work. However, when the work was less routine and required more highly specialized judgments about it, it was clear that the organization tended to be less formalized and more decentralized in decision making.

Unlike contextual factors and other structural elements reviewed above, less inquiry has been made into the relationship between decentralization and organizational processes. In the following section, studies on decentralization and organizational processes are examined.

Organizational Processes

Child (1973) studied relationships between organizational structure, work role, and behavioral variables in a sample of 787 senior British managers working in seventy-eight business organizations. Child interpreted the study's theoretical framework in a way that behaviour was seen to be constrained rather than determined by the organizational environment. In this framework it is posited that two main strategies of administrative control, structuring of activities and centralization, give rise to conforming behaviour and low levels of conflict through their prescription of roles. Centralization was found to be associated with higher levels of conforming behaviour but not with conflict. Structuring of activities was found to be associated with higher levels of conflict and hardly at all with conforming behaviour. Child concluded that strategies of administrative control are expected to reduce the amount of discretion in roles and, in consequence, the amount of innovative and non-conforming behaviour.

One of the strengths of this study is the methodology. Child (1973) examined relationships among variables located at different levels of organizational analysis as well as those at the same level. He noted that using this method it was apparent that the pattern of relationships among the variables located at different levels of organizational analysis was more complex than previously envisioned. Unfortunately, limiting the study to the managers did not provide evidence regarding the effect on employees of the two administrative strategies of control.

Hage, Aiken, and Marrett (1976) studied how organizations achieve coordination by analyzing verbal interactions about tasks as reported by supervisory personnel in sixteen social welfare agencies. The interactions were defined as formal by attendance at organization-wide committees (horizontal communication) and department head committees (vertical communication) or informal by the frequency of unscheduled communications (horizontal and vertical communication). They found some support for their predictions that increased complexity would increase horizontal task communication and that increased formalization for the increased complexity would be negatively related to task communication. They also found a strong positive relationship between degree of communication and decentralization of authority.

While fewer researchers have addressed organizational processes in relation to decentralization, the above studies on conflict, conforming behaviour, and communication represent a useful contribution. Recently, the focus of research on decentralization has been its relationship to outcomes which are important to organizational effectiveness. This line of inquiry is presented in the following section.

Organizational Outcomes

Although many organizational outcomes have been selected for the study of decentralization, innovation and job satisfaction were the most frequently chosen. The organizational research on these relationships is described and is followed by an account of several nursing studies.

In a study by Hage and Aiken (1967b) to test the Axiomatic Theory of Organizations the outcome rate of innovation adoption over a five-year period was measured and the rate of change was related to empirical indicators of organizational complexity, centralization, formalization, and morale. Interviews were conducted with 314 of the professionals employed in sixteen social welfare agencies. An organizational score was computed for the means of the variable social position within the agency. A social position was defined by the level or stratum in the organization and the department or type of professional activity. In this way the organization is considered to be a collection of social positions or jobs, not an aggregate of individuals. The structural variables were defined as specified in the Axiomatic Theory of Organizations (Hage, 1965, p. 293).

Results indicated that a high number of organizational specialties, a large amount of extra-organizational professional activities, a high degree of participation in agency wide decisions, a low degree of job codification, and a high degree of job satisfaction were found to be associated with a high rate of program change. Measures of staff attitudes toward change were found to be weakly and negatively related to the rate of innovation of new programs and techniques. The relationship between rate of

program change and organizational properties remained when size, auspices, organizational age, and function were controlled. The authors assumed that rate of program change and the other organizational properties can be seen as variables in a system and that a change in one variable leads to a change in others.

Hage and Aiken (1967b) suggested two lines of reasoning for the findings. First, given a high rate of program change, there is likely to be relatively decentralized decision making because of the necessity for discussions about the problems of change and a relaxation of rules in order to solve the problems of implementation. The addition of new programs is likely to attract better-trained and professionally active personnel. The second line of reasoning suggests that if an organization is relatively decentralized, it is likely to have a variety of information channels which allow the consideration of new programs. The authors believe that both lines of reasoning are correct and reflect the system nature of organizations.

One limitation of this study is that data were not longitudinal; therefore, no cause and effect relationships were identified. The organizations studied were small and similar relationships may not exist in large acute care hospitals where the rate of change has accelerated in recent years because of technological and scientific advances and alterations in client and resource bases. Although the findings suggest a relationship between degree of centralization and program change, findings may be dated in light of the current organizational environment.

Child (1973), in the study described above, found a positive association of decentralization to non-conforming behaviour. Child concluded that strategies of

administrative control are expected to reduce the amount of discretion in roles and the lack of discretion reduces innovation and non-conforming behaviour. Hage and Dewar (1973) found that the elite (leadership positions) values favouring change and decentralization were positively related to the rate of innovation in an organization, thus supporting the findings of Child (1973).

Conway (1976) found that the degree of congruence between teachers' preferred levels of participation and their actual participation in decision-making related to job satisfaction more than the absolute extent or frequency of their participation. This suggests that individuals have preferences regarding the types of decisions in which they wish to participate. Participation in work-related decisions can be divided into strategic decisions about resource allocation and policy formation and decisions about more localized work activities. Some researchers suggested that the types of decisions being made have different effects (Dwyer et al., 1992; Grinyer & Yasai-Ardekani, 1980).

Nursing studies. Rostowsky (1980) noted that decentralization was of value in health care because of increasing organizational complexity. Acute care hospitals have been viewed as highly complex organizations (Deane, 1991). Research in health care has focused on relating decentralization to various outcomes. Barhyte et al. (1987) conducted a study to investigate the relationship of decentralization to factors influencing nurse retention. They founded their study on the evidence that professional nurse retention is based to some extent on job satisfaction which is based to some extent on autonomy. Autonomy in the work place requires decentralization,

because autonomy cannot be achieved when decision making is centralized at a higher level of the organization. Patient care units with two different types of managerial structure (bureaucratic and collegial) were studied to determine how each type of structure affected job attendance. The setting was a 900-bed hospital that is part of an academic medical centre located in a large mid-western city in the United States. Approximately 1,100 nurses were employed during the year of the study, and about 80 percent of these persons had baccalaureate or higher degrees. The sample was eight nursing care units, of which four were experimental and four were control units. Randomly selected from among the available patient care units, the experimental units included one general surgical unit, one gerontology unit, and two operating rooms. These experimental units were then matched closely with control units. The matching was done on the basis of number of beds, type of service provided, and educational preparation of the nursing staff.

Data were collected on all eight units at three points in time: one month prior to decentralization, three months and six months after decentralization occurred. Most of the data were collected by means of questionnaires administered in group settings to all nurses working on each experimental and contrast unit. Semistructured interviews with staff nurses and unit-level leaders provided additional data. Data were collected using the Price Instrument for Formalization. Formalization was defined as the degree to which work roles are explicitly codified and structured. The index of participation in decision making was a four-item questionnaire developed by Hage, Aiken, and Marrett (1971). The items address the frequency with which one

participates in decisions about hiring and promoting staff and about adopting new policies and programs. The job attendance behaviours used in this study were sick time taken, days absent, and vacation time taken. Task structure which is a unit-level attribute that may have acted as a moderator variable was assessed by a 34-item inventory developed by Overton, Schneck, and Hazlett to assess the dimensions of task structure in nursing units.

Results showed no significant differences between the experimental and control units at the first stage of data collection examining the relationship of decentralization to factors influencing nurse retention. Significant differences occurred over time on the formalization index between the experimental and control units. The results suggest that in several instances decentralization had direct effects on the four types of attendance behaviour observed three and six months after the structural change occurred.

The researchers used sound methodology and considered time for implementation of change. Instruments chosen were based on theoretical frameworks and were established in terms of reliability and validity. It is difficult to generalize results from this study since the educational preparation of sample participants is typical primarily in magnet hospitals in the United States (Barhyte et al., 1987; McLure et al., 1983) and because the sample included operating rooms which are a unique specialty unit, quite different from medical-surgical wards. While the outcome measure of attendance behaviour is important to organizational costs, improved attendance does not necessarily result in other positive outcomes. Studies are needed

to determine the effects of decentralization on other organizational processes and outcomes.

Shoemaker and El-Ahraf (1983) conducted a study of acute care hospital nursing departments and found a decentralized nursing management structure increased job satisfaction through the mechanism of job enlargement and job enrichment. From the report of this research it did not appear that the investigators used a rigorous methodology. There was no theoretical basis, no reliability or validity reported for the measurement instruments, and the small sample size prevented generalization. The most significant limitation of this study was that the investigators did not measure the magnitude of decentralization. They asked respondents to indicate by yes or no whether the hospital was decentralized.

Miller (1986) found centralization and effectiveness of a nursing care delivery system negatively related in the 129 acute care hospitals sampled. Using a path analysis model with ten major variables, only centralization was significant at $p < .05$. among the following factors: legal dependence, resource dependence, integration, participativeness, administrative intensity, and budget management.

Przeźralski (1987) examined the effect of decentralization on the job satisfaction of clinical nurses and first-line managers. The sample included 343 (76% response rate) full-time nurses from four hospitals. Perceived decentralization was measured by Hage and Aiken's Index of Centralization and Job Codification and Vroom's measure of Psychological Participation. Porter's Job Satisfaction questionnaire was used to measure the dependent variable. Data were analyzed

primarily using Pearson correlations. For the nurse manager group, it was found that three of the four hospitals had a negative correlation between decentralization and job satisfaction. One hospital had a positive correlation between the variables decentralization and job satisfaction on each measure. For the clinical nurse group, a moderate negative correlation existed in all hospitals. Przestrzelski concluded that decentralization requires a planned development program in order for staff to learn the necessary decision making skills which would increase job satisfaction.

While using a sound theoretical framework, the investigator did not provide any information about the existing reliability and validity of the instruments, nor of the study sample; thus, it is difficult to accept these findings without some scepticism. The findings do suggest that there may be other variables associated with decentralization or job satisfaction which were not controlled in this study and which may have affected the results.

Di Angi (1989) conducted research to examine the relationship of organizational variables of environment, human resources, technology, and the nature of the work of the Magnet Hospitals. These American hospitals were identified and described by McLure et al. (1983) as hospitals without a nursing shortage and had the only empirically identified decentralized departments of nursing. Di Angi sought to explicate: 1) what has been empirically identified as a characteristic of the magnet hospitals; 2) if contingency variables were valuable descriptors of decentralization; and, 3) what variable or combination of variables best described decentralization.

Twenty-eight of the 41 Magnet Hospitals participated in the survey component

of this study. The farthest outliers at each end of the decentralization continuum, organizations A and B, were then visited for further data collection. Analysis of the quantitative data was done with multiple regression and the qualitative data were examined by a comparative case study approach. The independent variables explained: 1) 10% of the variability of managerial technologies; 2) 9% of the variability of managerial turnover; 3) 13% of the variation in managerial integration; and, 4) 4% of the variation of managerial expertise. Environmental decentralization had a significant negative relationship to managerial turnover. Task uncertainty had a significant negative relationship to managerial technologies and to managerial integration. The case study comparisons revealed differences between Organization A and B on the parameters of: 1) perception of the environment; 2) the delineation of work; 3) decision making systems; 4) social relationships and rewards; and, 5) recruitment and advancement. The research suggested that the more decentralized the department of nursing and the greater the degree of uncertainty identified by the nurse managers, the more highly decreed the nurse manager, the greater the turnover, the greater the span of control, and the fewer departmental policies and procedures.

Combining qualitative and quantitative methods added additional data to this study. Another strength of this research lies in the further examination of a work environment that is highly decentralized. The findings have limited value for generalization to situations where decentralization is in the early stages because the sample used is noted for a long history of strongly decentralized environments (Kramer & Schmalenberg, 1988; McLure et al., 1983). The data were gathered only

from nurse administrators and provide no information about the concepts from a clinical nurse perspective.

In a study to examine the influence of organizational structure on nurse manager job satisfaction conducted by Wells (1990), it was found that there was no difference in job satisfaction in centralized versus decentralized hospital settings. The sample included 137 nurse managers from eight acute care facilities. This is one of the few studies in which a positive relationship between decentralization and job satisfaction was not found; however, the measure of decentralization was budgetary decision involvement. This finding provides evidence that the type of decision being made affects the outcomes and it supports Hage's (1980) position that there is a difference between participating in strategic decisions and having authority over work decisions. Agencies were classified as decentralized or not decentralized. The magnitude of decentralization was not measured. It is possible to conclude that nurse managers do not necessarily feel that participating in the budget decisions is a precondition to their job satisfaction. The small sample size places limitations on the generalizability of this study finding but at least suggests that effects of decentralization may depend on the specific issue.

Jones, Stasiowski, Simons, Boyd, and Lucas (1993) studied the impact of shared governance, a form of decentralization, on clinical nurses' perceptions of management style, group cohesion, job stress, job satisfaction, and anticipated turnover. Measurements were taken prior to, and annually for 3 years following the implementation of shared governance. Analyses of the overall scales and subscales

were conducted using one-way analysis of variance. Comparisons of baseline and post-implementation scores were made using the Scheffe method of post hoc comparisons. There was a significant improvement in nurses' perceptions of management style and in overall organizational job satisfaction scores and professional job satisfaction. There was a significant decline in anticipated turnover scores between the baseline year and the second and third post-implementation years, indicating that clinical staff nurses were less likely to leave following the implementation of shared governance. This study provided current evidence that a form of decentralization involving participation in decision making has a positive relation to clinical nurses' perceptions of aspects of their work environment. A strength of this study was the design used which included a longitudinal approach. Unfortunately no mention was made of the reliability or validity of the measurement instruments used or the response rate and final sample size. These limitations make it difficult to generalize from this study.

Ringerman (1990) investigated the extent to which decentralization influences and predicts job satisfaction, organizational commitment, and professional practice climate as perceived by nurse managers in acute care hospitals. Nurse managers employed in an assortment of different specialties and representing 101 acute care hospitals in the state of California comprised the study sample of 292. Females represented over 90% of the participants. Data were collected by mailed questionnaire which contained a demographic data form and four instruments: the Hage and Aiken Index of Centralization, the Munson-Heda Job Satisfaction Instrument, the Mowday,

Steers, the Porter Organizational Commitment Questionnaire, and the Miller-Polentini Professional Practice Climate Instrument. The sample specific reliability for these instruments ranged from .67 to .95.

A moderately sized positive correlation between decentralization and each dependent variable was found. Multiple regression analysis showed that decentralization predicted both job satisfaction and professional practice climate. Decentralization accounted for 22% of the variance in job satisfaction and for 15% of the variance in professional practice climate. Additional variance for job satisfaction was contributed by organizational commitment (12%) and professional practice climate (3%). Although decentralization did not emerge as a significant predictor of organizational commitment, professional practice climate accounted for 25% and job satisfaction 7% of its variance. Ringerman concluded that the significance of this study lies in its findings which suggest that decentralization would appear to have no negative effects on organizational commitment and appears to be a positive influence on job satisfaction and perceived professional practice climate. She suggested that further research is needed to fully understand the effects of decentralization.

Although Ringerman's study contributes valuable knowledge about decentralization within a nursing context, limiting the focus to the nurse manager level does not address the structural effects at the organizational level where the primary service is provided. There is limited evidence to suggest that clinical nurses who deliver the direct patient care respond to decentralized decision making in a

similar manner. A second limitation included use of the Miller-Polentini Professional Climate instrument. Unfortunately the construct validity of the Miller-Polentini Professional Practice Climate Instrument had not been established and this is a significant limitation of this research. Several items did not load on any factor and two factors in this research did not represent an identifiable topic. This tool is directed to nurse administrators and could not be used with other populations without considerable adaptation. Ringerman (1990) provided current evidence about the relationships of decentralization to a professional practice environment, the two concepts central to this study.

This segment is the conclusion of the literature review on decentralization. Studies relating decentralization to various outcomes were considered. The majority of studies examining decentralization and job satisfaction found a positive relationship between these two variables. Other outcome variables studied included innovativeness, job retention, and organizational commitment.

In the above section research related to decentralization and associated variables was reviewed. Decentralization as one of the elements in organizational structure noted to be of considerable importance in modern organizations has been studied in relationship to contextual factors, other structural elements, a few process elements, and to various outcomes. In the next section, a review of the literature on professionalism and the specific aspects which are of importance from an organizational perspective and to this inquiry are presented.

Professionalism and Nursing Practice Environments

This portion of the literature review focuses on the research and theory related to professionalism in an effort to describe the aspects of the professional practice environment that are important to administrators concerned with organizational success and survival. It is recognized that there exist within any profession those individuals who do not, or who are functionally unable to, demonstrate the attributes of a professional. Also, it is recognized that some see professionalization as a bid for status by members of the occupation (Vollmer & Mills, 1966). Neither of these issues is within the scope of this discussion.

To provide a description of the aspects of a professional practice environment which are of interest from an administrative perspective, a review of the literature on professionalism and professionalization is presented. The approaches taken to theorize about professionalism and professionalization include process (Wilensky, 1964), trait (Goode, 1969), and power (Forsyth & Danisiewicz, 1985). The concept of professionalism has been discussed frequently in the literature; however, there remains confusion about the definition of the major concepts. There is little consensus about the meaning of the terms "profession" and "professionalization" (Forsyth & Danisiewicz, 1985). Gouldner and Ritti (1967) use "professionalism" to indicate the possession of some of the attributes of a profession. Vollmer and Mills (1966) defined the term "professionalization" as a process whereby members of an occupation make an effort to acquire some degree of these attributes. These terms will be defined similarly in this study. The process whereby an occupation becomes a profession has

been described and usually contains similar stages (Forsyth & Danisiewicz, 1985; Goode, 1969). In the following section, a review of research related to professional characteristics with attention to those aspects of interest to this inquiry is presented.

Professional Characteristics

The professional literature contains many different sets of characteristics noted to be professional (Benveniste, 1987; Darling-Hammond, 1989; Greenwood, 1966; Hall, 1968; Sovie, 1983). Distinctions about the degree of professionalization and professionalism of various occupations are based on specific characteristics possessed by those practising the occupation. A useful way to think about professionalism is to think of occupations lying somewhere on a professional continuum (Goode, 1969; Wilensky, 1964). Placement on the continuum ranges from a point reflecting small levels of professionalism to placement reflecting the professional ideal as recorded in the literature. Etzioni (1969) designated nursing as a semi-profession based on the presence or absence of certain attributes in favour at that time. This is an important notion since, as Torres (1988) noted, most major works on professionalism support the general notion that the more developed a profession, the greater the control it has over its environment. When viewed as a semi-profession, nurses would not be in a strong position to control either their internal or their external environment. Barnes (1975) suggested that the nature of professionalism has evolved and will continue to evolve in relation to environmental and organizational realities. As nurses gain in professionalism, organizations are attending to those characteristics which contribute to effectiveness.

Professionals are commonly defined as having four characteristics:

1) specialized competence, 2) autonomy in exercising the competence, 3) commitment to a career in this competence, and 4) influence and responsibility in the use of the special competence (Gouldner & Ritti, 1967). Goode (1969) suggests that two main attributes can be distilled from all the lists; specialized knowledge and the service ideal. The notion of a service ideal means that professional decisions should not be based on the professional's self-interest but on client needs (Goode, 1969). The service ideal, which is pivotal to the moral justification for professional status, is assumed to be the basis for most nurses' practice and is not considered a variable in this study.

More recently, Darling-Hammond (1989) argued that professionalism depends on the affirmation of three principles in the conduct and governance of an occupation: 1) knowledge is the basis for permission to practice and for decisions that are made with respect to the unique needs of clients; 2) the practitioner pledges his [sic] first concern to the welfare of the client; and, 3) the profession assumes collective responsibility for the definition, transmittal, and enforcement of professional standards of practice and ethics (p. 67).

Monnig (1978) investigated the degree of professionalism possessed by 257 nurses and 230 physicians. She used the 25-item Professional Inventory Scale developed by Hall (1968). Nurses who had masters degrees demonstrated a higher degree of professionalism in the use of professional organizations but they had the least sense of calling to the field. Nurses who had diplomas ranked higher than

baccalaureate nurses in all dimensions of the professionalism scale except for autonomy. This group also had the greatest sense of calling to the field. There were few significant differences among physicians. Physicians ranked higher in all dimensions of the professionalism scale than nurses, except belief in public service.

While providing knowledge about professionalism in a sample of nurses which might be useful for comparison purposes, no reliability and validity of the instrument was provided. Some of the constructs do not appear to have face validity. The dimension "belief in public service" appears to tap the notion of importance of the profession to society. This contrasts with Goode's (1969) conception of the service ideal which he interprets to mean that professional decisions should not be based on the professional's self-interest but on client needs. The "belief in self-regulation" dimension appears to describe the professional's ability to carry out a peer review rather than the belief in the value of such activity. The variables used to represent professionalism in Monnig's study have limited relevance from the administrator's perspective.

How the individual researcher conceptualizes professional practice appears to determine, at least in part, the types of variables intended to serve as parameters of important practice domains. Both nurses and sociologists agree that participation in formal professional organizations is not sufficient to describe professional behaviour (Moloney, 1986). From a review of the many lists of professional characteristics, the attributes of most interest to administrators, since when actively practised within the

organization they lead to positive outcomes (Benveniste, 1987) include: 1) control over practice, 2) current specialized knowledge acquired through professional development, and 3) continued redefinition of practice through innovation activities. Although it is not noted as frequently in the sociological literature, peer relationships is a fourth professional characteristic which appears to be particularly important within a nursing context.

Control over practice. Control over practice refers to autonomy for decision making and actions in one's work, with limited external control from the employing agency and other disciplines (Hall, 1986). One precondition to autonomy is authority (Lewis & Batey, 1982). Authority is the rightful power to fulfil responsibility (Webber, 1947). Autonomy is the freedom to make discretionary and binding decisions consistent with one's scope of practice and the freedom to act on those decisions (Lewis & Batey, 1982). Autonomy has been defined "to involve the feeling that the practitioner ought to be allowed to make decisions without external pressures from clients, from others who are not members of the profession, or from the employing organization" (Hall, 1968, p. 93). Semiprofessions enjoy less freedom from being supervised than do the more prestigious professions (Simpson & Simpson, 1969).

Professional tenets grant professionals the right to make their own rules. The nurse administrators, who typically make the rules, seldom have accountability for the direct care to clients over extended periods and are not in a position to dictate practice. The extent to which management uses rules and pressures to keep employees

under control reduces professionalism. Despite the firm sense of responsibility for patients' welfare which supports nurses' claims to professional control over their practice, frequently nurses are unable to exercise professional control due to the practice environment in which they work. Rodney and Starzomski (1993) noted that nurses must gain control over their practice if they are to meet professional requirements to enact their role as moral agents. Thompson (1990) questioned whether nurses have lost so much control over their practice that they can no longer use humanistic clinical judgment in making decisions. Attridge and Callahan (1989) found that incidents of nurse powerlessness concerned direct care to patients in which a nurse's control over practice and degree of relevant knowledge were central.

The bureaucratic controls on nursing practice have other serious effects. When professional behaviour is not viewed as a set of skilled and self-reflective actions, and external control is imposed by others, two main consequences result: 1) loss of holistic control of the planning and substance of the work, and the de-skilling of the practitioner (Apple, 1986) and, 2) nurse/patient staffing ratios that make it impossible to practice professionally. Many nurses are in production-type jobs that result in little time to devote to anything else. Alexander, Weisman, and Chase (1982) found that nurses' perceptions of autonomy were influenced by workload.

Professional development of specialized knowledge. Most scholars agree that a theoretical body of knowledge is one of the indispensable characteristics of a professional (Goode, 1969; Moloney, 1986). Greenwood (1957) noted that the skills that characterize a professional flow from and are informed by a body of knowledge

that has been organized into an internally consistent system of theory and research applied to the service related problems of the professional. Specialized knowledge based on research and theory is constantly being renewed and brings with it the need for continual professional development. Professionals who are alert to the new developments in the field and are abreast of the growing body of knowledge ensure that patients receive the benefits of the most current thinking in the discipline. Scheller (1993) provided a review of the research indicating the positive relationship between professional development and practice. Administrative responsibilities include establishing an organizational structure and an internal environment in which learning and change can take place.

Innovation activity. To be aware of research and theory is to be in a position to make changes in practice and potentially to alter the status quo which may not be perceived by others to be in their best interests. If innovation is necessary for survival, the practice environment must encourage it so that the resulting professional behaviour is aligned with the current organizational requirement for flexible, innovative, knowledgeable employees who can actively respond to, and create, change. Practice innovations, whether new knowledge, new attitudes, or a decision to implement something already known, are related to the environment in which the individual operates (Cervero, 1985). It has been noted that nurses have too little authority and autonomy to implement change in the work environment (Gott & O'Brien, 1990). Attridge and Callahan (1989) found examples in their research where nurses were prevented from making changes. Nurses have identified the work

environment as a discourager three times more often than they viewed it as an encourager when considering the use of knowledge to change practice (Warmuth, 1987). Links between decentralization and innovativeness have been described in the previous section. There are no studies to provide evidence that this relationship exists in a nursing context.

Peer relationships. Although less often included on lists of professional attributes, peer relationships are an integral part of a professional practice environment. The peer group in a nursing setting expedites sharing of work and the development of skills that promote openness and honesty (Johns, 1990). Openness and honesty are necessary for professional peer review. To be successful, peer review requires a base in which there is a valuing of collegiality as a professional virtue (Sergiovanni, 1992). Collegiality is connected to the existence of a set of norms and values that defines the group as a community of likeminded people who are bonded together in a common commitment. In this sense, collegiality becomes part of a collaborative culture (Hargreaves & Dawe, 1991). The professional's bond with colleagues derives from relationships established by a common technical language, educational background, rites of passage, styles of work, attire, and a consciousness of being set apart and an insistence on being set apart from other occupations (Moore, 1970). Collegial relationships are expected to be cooperative, equalitarian, and supportive (Beletz, 1990). Houle (1980) noted that protection of peers is a characteristic of professionals and this implies that the professional will refrain from any actions that endanger the authority of colleagues and that professionals will

sustain each other when that authority is threatened. Moos (1979) incorporates peer cohesion as a construct of importance in his theoretical model and research on work environments. He noted that environments had a greater impact on the individual when the setting is intensive, committed, cohesive, and socially integrated.

Scant research exists on the effects of decentralization and peer cohesion. This is despite the fact that peer relationships appear to be a very important aspect of a professional practice environment. Positive peer relationships in the form of supportive and friendly colleagues appear to be linked to those aspects of professionalism essential in a nursing practice environment (Attridge & Callahan, 1989; Scheller, 1993). Attridge and Callahan (1989) found there was a lack of peer support when nurses were experiencing situations in which they perceived themselves to be powerless. A lack of collaboration among nurses negatively influenced the use of knowledge acquired through continuing education (Scheller, 1993). Caldwell and Weiner (1981) noted that negative peer relationships are associated with stress in critical care nurses. The value of social support to reduce stress in critical care nurses was reviewed by Norbeck, (1985). Johns (1990) described the importance of a supportive peer group in a primary nursing setting, in which the concept was incorporated in a formal job description. Although there is some empirical evidence to suggest that peer relationships are important to professional clinical nurses (Blegen, 1993), there are few studies on the relationship of decentralized organizational structure to this concept.

Jones et al. (1993) studied the impact of shared governance, a form of

decentralization, on clinical nurses' perceptions of management style, group cohesion, job stress, job satisfaction, and anticipated turnover. Shared governance is a system that involves decisionmaking by a representative group. Measurements were taken prior to and annually for 3 years following the implementation of shared governance. Group cohesion was measured using the Good and Nelson Group Cohesion Scale (Good & Nelson, 1973). The instrument has possible responses ranging from 1 to 7, with high scores indicating higher levels of cohesion. Although the mean scores increased with each subsequent measurement of group cohesion, suggesting a trend, the relationship between shared governance and group cohesion was not statistically significant.

In conclusion, there is not much empirical research on aspects of professionalism, in particular those useful within a changing organizational environment. The literature on professionalism indicated that professionals require decision making participation and authority, and control over their work including innovation. Also there is evidence that the opportunity to use professional knowledge and skill is associated with job satisfaction. In the following section, a review of research related to professional practice in organizations is presented.

Professionalism in Organizations

Barnes (1975) delineated the changing stance of the professional employee and suggested that despite the common belief otherwise, most professionals are not self-employed but are working in various types of organizations. While the subject of professionals employed in organizations has been a theoretical topic of continuing

interest for decades (Benveniste, 1987; Corwin, 1961, 1965; Hall, 1968; Scott, 1979; Von Glinow, 1988), a limited number of studies exist.

Blau et al. (1966) investigated bureaucratic structure and professionalization in small and large organizations. Data from 156 American public personnel agencies were analyzed. Centralization was associated with lack of professionalization which was defined as less than 50% professional employees. Professionalization was associated with a high ratio of managers. The researchers concluded that professional training made an individual more self directed and more aware of the broader implications of the job. Therefore, professionals are more interested in seeing that agency policies and procedures do not conflict with professional standards and, as such, are more likely to detect problems that escape the notice of someone without professional training. This latter situation requires administrative procedures to remedy the problems (Blau, et al., 1966).

Hall (1968) examined professionalism in the context of organizational structure. He studied 328 (61% response rate) subjects in 11 professional occupations. The bureaucratic dimensions studied were hierarchy of authority, division of labour, system of rules, system of procedures, impersonality, and technical competence. Hall used a Professional Inventory Scale to measure attitudinal attributes of professionalism. An Organizational Inventory Scale (1968) was used to measure perceptions of the organizational structure. The findings indicated that organizations in which professionals work vary in their degree of bureaucratization. Generally a negative relationship was found to exist between the levels of bureaucratization and

professionalization. Hall (1968) found that some less established professional groups had very strong professional attitudes, while some of the groups considered to be established professions had rather weakly developed professional attitudes.

This study represents an important early effort to examine the relationship between organizational structure and professionalism. Unfortunately, Hall does not present any reliability or validity information about the instruments used. A significant limitation of this study is the use of the instruments which have been evaluated above in relation to Monnig's study (Monnig, 1978). Although nurses were represented as one of the professional groups comprising the sample, the number was not sufficient to draw generalizable conclusions about this group. Corwin (1961) noted that generalizing to nurses from other professional employees is hazardous because nursing is almost exclusively a woman's occupation which provides a vocational uniqueness.

Synowiez (1987) conducted a descriptive study to determine the nature of attitudes toward professionalism among nurse managers. A second purpose was to explore the relationship of these nurse manager attitudes to their educational preparation, management experiences, and to the organizational structure of the nursing services department. The sample was composed of 122 nurse managers who worked in three major medical centres. The cross-sectional groups included 78 first-line, 35 mid-level, and nine top-level nurse managers.

A modified version of Hall's Professional Inventory Scale (1968) was used to measure attitudinal attributes of professionalism among nurse managers. Hall's Organizational Inventory Scale (1968) was used to measure nurse manager's

perceptions of the organizational structure of the employing nursing services department. To add support for validity of the data obtained through the use of questionnaires, a structured interview with six nurse managers from each of the three medical centres was completed.

A one-way analysis of variance and Fisher's least significance difference test revealed a significant difference in reported attitudinal attributes of professionalism among nurse managers of different educational backgrounds, management experiences, and organizational settings. Synowiez (1987) concluded from the findings that nurse managers showed 1) a greater sense of autonomy with increased educational preparation, 2) a greater use of professional organizations and sense of calling to the field with increased management experience, and 3) less belief in public service, depending on the structure of the employing nursing services department. Possible causes for differences in professional attitudes among nurse managers also emerged from the data: role models in the work setting, rewarding of professional behaviour by employers, and degree of decentralization within organizations.

Strengths of this study include the sound theoretical framework and the valid and reliable tools used to measure the concept of power. However, the instrument designed by Hall was noted to have only face validity. Limitations also are due to the fact that the investigator did not measure the magnitude of centralization and used the term "bureaucratic" with no definition of the construct provided to assist respondents with their yes or no answer. Although nurse administrators are central to effective organizational functioning, this researcher ignores the fact that clinical nurses are the

largest group of nursing professionals and research is necessary to examine the type of work setting that supports professionalism among this group of nurses. In summary, some relationships between decentralization and professionalism of employees have been established; however, less is known about the relationship of decentralization and aspects of professionalism of interest to administrators who are strengthening the professional practice environment.

Summary

In this chapter a review of the literature on the major variables of this study has been presented. The literature was reviewed in relation to the topics of interest in this study including organizational structure elements and aspects of a professional practice environment. In the decentralization section, a focus on relationships with contextual factors, other structural factors, process elements, and outcomes was described. In general, the research on decentralization has shown moderately consistent results. Decentralization has been shown to have a positive relationship with complexity in an organization and with job satisfaction of employees. Some associations have been made between organizational structure and selected aspects of a professional practice environment; however, less is known about those aspects seen to be crucial to the administrator charged with responsibility for an organization's function.

In the next chapter the conceptual framework derived from the literature review is depicted and discussed. The research hypotheses arising from the conceptual framework are presented.

CHAPTER III

Conceptual Framework

A conceptual framework derived from the theory and research in the literature is presented in this chapter. The framework was used to guide the study on decentralization and professional practice environment. Following the overview on the elements in the conceptual model, the research hypotheses are posed.

Overview of the Conceptual Framework

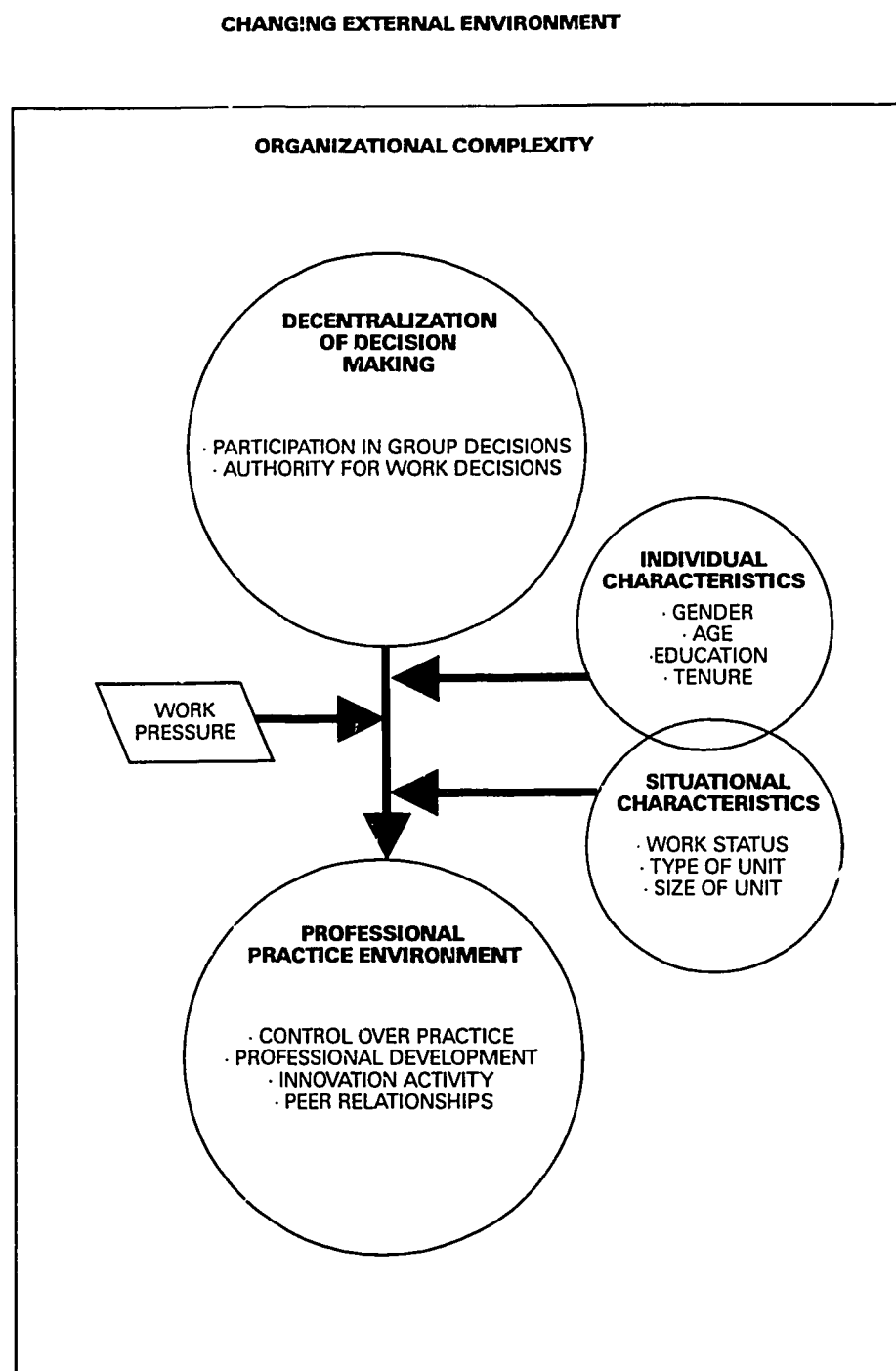
Organizations employing professionals face an unprecedented pace of environmental change which requires effective anticipation and response. The increased organizational complexity resulting from continuous environmental change has led organizational theorists to recommend that administrators adopt a decentralized decision-making structure. This organizational structure has been posited to be particularly appropriate to the work of professionals. When professionals participate in making group decisions that affect practice and have authority for their work decisions, they contribute to organizational success because they can apply specialized knowledge to solve problems and refine practice. This investigator is concerned with the relationship between decentralized decision making and selected aspects of the professional practice environment of clinical nurses in a university hospital setting.

The aspects of professional practice of most concern to an administrator include the professional's control over practice, professional development to maintain a current knowledge base, innovativeness to change practice, and collegial peer relationships to support practice. A conceptual framework for the study was developed from the theory and research findings in the literature. The following discussion centres on the elements in the conceptual model seen in Figure 1.

Changing External Environment and Organizational Complexity

External environmental change, which is rapid and continuous, has a profound influence on service organizations employing professionals. Changes include dramatic alterations in economic, technological, social, and political features of the environment (Gersick, 1991). These changes increase the complexity within an organization. Haverman (1992) noted that organizational response to environmental change may range from harmful to helpful with the organization's survival as the crucial outcome. Power (1988) suggested that the existence of new external environments requires new organizational structures. Although Pennings (1992) noted that an organization and its administrators are environmentally constrained in the choice of structural blueprints, administrators are challenged to design organizational structures in order to ensure the demands of continuous change are met. It is clear from the literature that continuous and dramatic changes in the external environment contribute to the increased complexity of organizations which then require new structures (Drucker, 1988; Gersick, 1991; Haverman, 1992; Von Glinow, 1988).

Figure 1

Conceptual Framework

Many organizational researchers found that increasing complexity is associated with decentralization of decision making (Blau et al., 1966; Hage & Aiken, 1967a, 1967b; Pugh et al., 1968; Slater & Bennis, 1990). As the complexity of an organization increases, it becomes necessary to remove centralized control over decisions in order to increase the speed of response time to changes. In addition, complexity prevents those in leadership positions from having the necessary knowledge about the various specialized areas within the organization (Hage, 1980). Figure 1, which depicts the conceptual framework for the study, presents these two concepts as they are related to the central study variables. Because these concepts are not being examined in this investigation, the arrows joining them to the study variables are grey in colour to represent their background relationship to the main variables in the study.

Decentralization of Decision Making

Decentralization occurs as a response to the increased complexity. Decentralization has been related to many different organizational effects, including other structural changes, process, and outcome changes (Child, 1973; Hage & Aiken, 1967a, 1967b; Ringerman, 1990; Shoemaker & El-Ahraf, 1983). The effects of interest in this study are those related to the professional practice environment. Decentralization includes two essential elements; participation in work-related group decisions and authority for the individual's work decisions (Hage, 1980).

Participation in group decisions. Participation in work-related decisions can be separated into strategic decisions about resource allocation and policy formation, and decisions about more localized work activities (Hage, 1980). There is little empirical evidence about the types of decisions in which nurses want participation.

Authority for work decisions. Having authority for one's own work decisions means that there is no need for the individual to get permission from someone in a higher position in the organizational structure. For clinical nurses, the main work authority would revolve around providing care to patients.

The potential for decentralization to affect aspects of a professional practice environment lies in structural arrangements that grant the professionals the right to participate in decisions and the authority for their work decisions. In Figure 1, a large arrow represents the relationship between decentralization and aspects of a professional practice environment which is the primary relationship of this inquiry. Decentralized decision-making structures have been studied in relation to professionalism (Hall, 1968; Monnig, 1978; Ringerman, 1990; Synowicz, 1987). Ringerman (1990) found a positive relationship between decentralization and professional nursing practice climate.

Professional Practice Environment

The aspects of professionalism of interest to administrators trying to foster continuous learning and change in order to anticipate and respond to the external environment have had little study. These aspects are control over practice, professional development to increase specialized knowledge, and innovativeness to

refine practice. These aspects of professionalism contribute to organizational success (Benveniste, 1987; Drucker, 1992; Greco, 1992). In addition, collaborative peer relationships have been noted to be characteristic of professional practice (Beletz, 1990; Houle, 1980).

Control over practice. Control over professional practice is a central aspect of professionalism (Hall, 1986). Control over practice indicates the degree to which staff have autonomy over their work lives within the hospital and the freedom to act on their decisions. Decentralization, which is a structural authority to make or participate in decisions, is thought to contribute to professional control over practice within a bureaucracy because, instead of constantly seeking permission from the next highest level of the hierarchy, nurses are expected to make most decisions concerning their patients (Althaus et al. 1981). Nurses who choose to question, to speak up on a client's behalf, do so freely only in an environment in which that action is welcomed and supported by management (Schattschneider, 1992). Nurses who control their practice need more knowledge, therefore, their need for continuing education never ends (Althaus et al., 1981).

Professional development. The need to maintain a current body of specialized knowledge makes professional development another crucial aspect of professional practice. McClosky and Grace (1990) noted that, in nursing, considerable progress has occurred to develop a unique body of knowledge through research. It has been found that the use of knowledge acquired through professional development affects practice (see Scheller, 1993 for a review of these studies). Cervero (1985) stressed the

importance of the relationship between the individual and the environment for effective continuing professional education to take place. Continuous change requires continuous learning on the part of professionals; thus, professional development is an aspect of professionalism of interest to administrators. Increasingly, an administrator's role encompasses educational responsibilities for managing or facilitating the work-related learning and development of employees to meet and to make changes effectively (Greco, 1992). An organizational structure that encourages participation in decision making and places authority for appropriate work decisions at the practitioner level may support professional development activities because of the need for more knowledge to function well within that arrangement.

Innovation activity. Innovations in practice, which may be new knowledge, new attitudes, or a decision to implement something already known, are related to the environment in which the individual operates (Cervero, 1985). Innovation in the work environment is supported by control over professional practice and a current knowledge base acquired through professional development activities. Professional knowledge can be used to change practice only if the work environment supports it. Decentralized decision making provides authority for work decisions to the clinician. Such authority has potential to enable refinements to practice to be made. Participating in decision making can provide the clinical perspective to problem-solving and thereby improve the organizational response to change.

Peer relationships. While not a frequently cited aspect of professionalism, peer relationships seems an essential element in a professional practice environment, at least for clinical nurse professionals. Peer relationships have been noted to be of importance in a nursing work context in studies on quality of working life and job satisfaction (Attridge & Callahan, 1989; Blegen, 1993; Scheller, 1993). Positive peer relationships are important in the satisfaction and retention of professional nurses and as such are valuable from an administrative perspective. In addition, collegial discussions about practice have been noted to be important to professional growth (Hargreaves & Dawe, 1991; Kagan, 1992). The nature of group dynamics among professional peers on a nursing unit can influence the continuing learning activities (Scheller, 1993). It was found that nurses ranked supportive, amicable, enthusiastic, and competent, committed colleagues first in a list of positive quality of work items (Attridge & Callahan, 1990). The need for supportive and friendly colleagues relates to the daily work of nursing in which an individual depends on other nurses to help plan and deliver care. Moos (1979) noted the more intensive, committed, cohesive, and socially integrated the setting, the greater its impact on the individual. Decentralized participation in decision making provides a structure in which nurses must work collaboratively to address issues that are important in their work environment. Providing authority for specific clinical decisions will require cooperation among staff to ensure the decisions are agreeable and successfully implemented over time. For these reasons decentralization has potential to affect peer relationships.

Work Pressure

It is evident from the literature that work pressure is also an important variable in a professional work context. The amount of felt pressure from work affects nurses' perceptions about several elements in their professional environment (Alexander et al., 1982; Jenny, 1982; Norbeck, 1985; Scheller, 1993). This aspect of a work environment coexists with the study variables of concern and has the potential to add confusion in an examination of the relationship between decentralization and aspects of the professional practice environment. In the model seen in Figure 1, the small arrow connects the extraneous variable Work Pressure to the larger arrow depicting the main relationships being examined in this study. Although the degree of work pressure is primarily a product of staffing ratios and patient acuity, it could be affected by the time needed to participate in decision making and in the time required to gather data to make one's own work decisions. Its importance lies in the effect of work pressure on an individual's ability to enact the professional role. Alexander et al. (1982) found that nurses' perceptions of autonomy were influenced by workload. Despite the growth of systematic nursing knowledge, with unduly heavy workloads there is little time for the professional development necessary to keep a current knowledge base. Grabowski (1983) noted that it takes time to apply knowledge in practice settings. Work pressure reduces the time available to integrate new learning into practice. Hence, work pressure is an element that must be considered when examining the relationship between organizational structure and the professional practice environment.

Individual and Situational Characteristics

Specific individual and situational characteristics have the potential to moderate the relationship between the independent and dependent variables. These moderating variables required consideration in this study. In Figure 1, the arrows from the circles representing the individual and situational characteristics are smaller to indicate that these are potential moderating effects on the central relationship under study. In particular, education was found to be associated with aspects of professionalism (Synowiez, 1987). Gender (Corwin, 1961), age, and tenure are individual characteristics of possible importance (Ringerman, 1990). Size and complexity have been associated with organizational structure (Pugh et al., 1968). Similar situational concepts operating at the subunit level may have like effects. The size of the nursing group may have an effect on peer relationships. For these reasons, individual and situational characteristics are included in the conceptual framework. In the model as seen in Figure 1, the two circles representing the individual and situational characteristics are overlapping to acknowledge that a person could be depicted by variables in both groups simultaneously, for example, be in the twenties age group and work on a unit with a single medical specialty.

Hypotheses

Given the conceptual framework and findings from the literature it is proposed that perceptions of environmental aspects of professional practice may be enhanced by decentralized decision making. Hence, the following hypotheses are proposed.

1. Decentralized decision making is positively related to perceived control over professional practice.
 - a) Participation in decision making is positively related to perceived control over professional practice.
 - b) Authority for work decisions is positively related to perceived control over professional practice.
2. Decentralized decision making is positively related to perceived professional development activity.
 - a) Participation in decision making is positively related to perceived professional development activity.
 - b) Authority for work decisions is positively related to perceived professional development activity.
3. Decentralized decision making is positively related to perceived innovativeness.
 - a) Participation in decision making is positively related to perceived innovativeness.
 - b) Authority for work decisions is positively related to perceived innovativeness.
4. Decentralized decision making is positively related to perceived peer relationships.
 - a) Participation in decision making is positively related to perceived peer relationships.
 - b) Authority for work decisions is positively related to perceived peer relationships.

Summary

In this chapter, the conceptual framework for the study, the hypotheses and definitions for the variables were presented. In the next chapter the methods to answer the research questions regarding the relationship between decentralized decision making and aspects of professional nursing practice environment at the clinical level are described.

CHAPTER IV

Methodology

The focus of this chapter is on the design of the study. The chapter is divided into four sections. The first is a description of the research design, sample, and sampling procedure used, including steps to protect subjects' rights. In a second section, the measures employed in data collection are described. The third section is a description of the data collection process. A discussion of the data analysis techniques used in the study is provided in the fourth and final section.

Research Design and Sample

Research Design

In this study a non-experimental correlational design was used. This design was selected because the variables of interest are naturally occurring, complex, and not subject to experimental manipulation. Data were collected at a single point in time using an anonymous mailed questionnaire method. This technique provided the following advantages: immediate knowledge of results, less subject attrition, subjects responded at approximately the same time, the variables are not confounded by time, and it is relatively inexpensive. In addition, an anonymous questionnaire reduces the threat of possible censure when individuals are being asked to evaluate aspects of their work organizations (Fowler, 1988).

Sample

The sample was comprised of professional clinical nurses employed in a tertiary care university teaching hospital. The entire sample held the credential of Registered Nurse and occupied positions that involved providing direct clinical care to patients. To assure that they were familiar with the structure and function of their units and settled into the work environment, only nurses who were employed full-time or part-time on a unit for longer than six months were sampled (Mueller & McCloskey, 1990). The university teaching hospital selected had approximately 800 beds with a 95% average daily occupancy rate. The hospital provided multiple clinical specialty services to both in-patients and outpatients.

With regard to sample size, Stevens (1986) suggested about 15 subjects per predictor are required in social science research. This study had three independent variables representing decentralization, "Participation in Decision Making", "Unit Decision Making", and "Hierarchy of Authority", one extraneous variable "Work Pressure", and 11 demographic moderating variables that had the potential to affect the relationship between the independent and dependent variables, "Control Over Practice", "Professional Development", "Innovativeness" and "Peer Cohesion". To construct a regression model with 15 predictor variables required a minimum sample size of 225. A random sample of 500 clinical staff nurses was selected from 1350, the total number employed in the hospital. In an attempt to have a sample size of at least 225, research packets were distributed to 500 subjects; this allowed for a useable response rate of slightly more than 50%. Response rates from other studies using a

similar population of interest ranged from 35.4 % with no follow-up (Hagerty, 1992) to 70% with telephone follow-up (Brown, 1989), therefore, two written follow-ups were completed. The research packet sent to subjects included an information letter (Appendix A), two measurement instruments (Appendices B and C) and a Demographic Form (Appendix D).

Measurement Instruments

Two measurement instruments were used to collect data on decentralization and professional practice environment. A demographic data form was used to collect additional data.

Decentralization

Nurses' perceptions of decentralization of decision making were measured by the two subscales of the Index of Centralization (Hage & Aiken, 1967a) (Appendix B). The Index of Centralization had been used previously in a similar nursing context; however, it did not measure participation in general ward or unit decisions which was assessed in this study by one subscale from the School Organizational Climate Questionnaire (Giddings & Dellar, 1990). The School Organizational Climate Questionnaire (Giddings & Dellar, 1990) was renamed the Professional Practice Environment Scale for this research (Appendix C).

The Index of Centralization (Hage & Aiken, 1967a) consists of two measurement dimensions. The first dimension, Participation in Decision Making, is defined as the degree to which occupants of various positions participate in strategic decisions about the allocation of resources and the determination of organizational

policies (Hage & Aiken, 1967a). This subscale (Appendix B, items 1-4) consists of four items for which respondents were asked to rate their degree of participation from a low of 1 to a high of 5. A greater degree of decentralization is represented by higher scores. The second dimension, Hierarchy of Authority, measures responsibility for decisions about the actual work duties associated with each social position which is different from participation in group decisions. Hierarchy of Authority is defined as the degree to which occupants of social positions in organizations are allowed to make their own work decisions without relying on a supervisor at the next hierarchical level (Hage & Aiken, 1967a). This subscale (Appendix B, items 5-9) consists of five items which are rated from a low of 1 to a high of 4. The greater degree of decentralization was represented by a low score which represents low reliance on superiors, that is, the hierarchy of authority. For consistency and ease of interpretation of the three measures of decentralization, these scores were reversed for analysis so that a high score represented decentralization.

Dewar, Whetten, and Boje (1980) examined the psychometric properties of the Index of Centralization instrument. They used data from the original Hage and Aiken studies as well as a set of data collected by Whetten. The average number of respondents per case (16 organizations) was 20 for the Hage and Aiken studies and 4.25 (69 organizations) for the Whetten study. The alpha coefficient was used to determine reliability of each subscale. The alpha coefficient ranged from .79 to .95 for the Participation in Decision Making subscale, from .79 to .96 for the Hierarchy of Authority subscale for the Hage and Aiken studies. For the Whetten data, the alpha

coefficient was .81 for the Participation in Decision Making subscale and .70 for the Hierarchy of Authority subscale. They rated the reliability for the Hage and Aiken studies as excellent.

Dewar et al. (1980) determined to what degree the Participation in Decision Making and Hierarchy of Authority items converged by examining the inter-item correlations. They contrasted these with the median off-diagonal correlation to see whether or not the items discriminated the two measures of decentralization. The median inter-item correlations for both centralization measures were high. For all data sets, the correlations were at least twice the size of the median off-diagonal correlations. The investigators concluded that the coefficients indicated both sets of items have high degrees of convergent and discriminant validity and reflect the subconstructs for which they were intended. The Hage and Aiken instrument appears to have acceptable reliability and validity based on this research (Dewar et al., 1980).

Ringerman (1990) used the Hage and Aiken instrument with a nursing administration sample and found an alpha coefficient of .67 for the Participation in Decision Making subscale and .83 for the Hierarchy of Authority subscale. Barhyte et al. (1987) used the Participation in Decision Making dimension of the Index of Centralization developed by Hage and Aiken (1967a) with clinical staff nurses. These investigators reported Cronbach alpha coefficients ranging from .86 to .88. Corley, Selig, and Ferguson (1993), in a study using a sample of clinical nurses, reported an Alpha coefficient of .83 for the Participation in Decision Making subscale. They did not report any validity data. The above nursing studies provide evidence that the Hage

and Aiken instrument has suitable reliability and validity when used with a nurse sample.

The subscale, Participatory Decision Making from the School Organizational Climate Questionnaire (Giddings & Dellar, 1990), was used to measure participation in decision making at the ward unit level. The subscale, Participatory Decision-making, was retitled by this investigator to Unit Decision Making to differentiate it from the Participation in Decision Making of the Index of Centralization Scale. The subscale items do not refer to specific decisions about strategic resource allocation as does the Hage and Aiken (1967a) subscale Participation in Decision Making. Unit Decision Making is defined as the degree to which staff are encouraged by the nurse manager to participate in the unit decision-making process. The subscale consists of eight items alternating in sequence with items from the other subscales of the questionnaire. The subscale items are listed in Table 1. Reliability and validity information on the above subscale is provided below with the full description of the School Organizational Climate Questionnaire.

Professional Practice Environment

The dependent variables, perceived aspects of the professional practice environment were measured by subscales from the School Organizational Climate Questionnaire (Giddings & Dellar, 1990). These subscales had been used previously to assess an educational professional practice environment. The only instrument available for use in a nursing context had unacceptable reliability and validity. For this study, the language of the Giddings and Dellar instrument was changed to reflect

nursing; for example, the word "teacher" was changed to "nurse" and "school" to "unit". No other changes to the instrument were made. The study instrument was retitled "Professional Practice Environment Scale" by the researcher (Appendix C).

Table 1

Items From the Subscale Unit Decision Making

The nurse manager alone makes decisions on matters of unit policy (4).

The nurse manager encourages staff to be involved in seeking solutions to nursing problems (11).

Nurses have minimal say in the running of the unit (18).

Staff meetings allow all staff members to participate in major decisions affecting this unit (25).

Participation in decisions affecting nursing is open to members of the staff (32).

The nurse manager does not discuss the aims of the unit with the staff (39).

Nurses are encouraged to contribute suggestions about the running of the unit (46).

The nurse manager does not ask nurses to participate in decisions concerning administrative policies and procedures (53).

Note. Reverse scoring for items 4, 18, 39, 53.

The dependent variables, Control Over Practice, Professional Development, Innovativeness, and Peer Cohesion were measured by four subscales on the School Organizational Climate Questionnaire (Giddings & Dellar, 1990). The original four subscales from the School Organizational Climate Questionnaire (Giddings & Dellar,

1990) used to measure the dependent variables in this study were titled Teacher Autonomy, Professional Involvement, Innovativeness, and Peer Cohesion. Two were retitled for this study. The Teacher Autonomy subscale, originally titled Administrative Control by Moos (1974a, 1974b), was retitled Control over Practice for this study. The subscale Professional Involvement was retitled Professional Development to better reflect the nature of the items.

Giddings and Dellar (1990) adapted the Work Environment Scale (Moos, 1979, 1974a), the Organizational Climate of Secondary Schools used by Deer (1980), and the School-Level Environment Questionnaire described by Rentoul and Fraser (1983) to develop the School Organizational Climate Questionnaire. The new instrument was developed for use within secondary schools about to undergo organizational change in order to assess the staff perceptions of their actual and preferred organizational environment. The School Organizational Climate Questionnaire consists of seven subscales, with eight items each scored from 1 to 5 with half of the items scored in reverse. High scores mean that the subjects perceived that the construct being measured was present to a high degree.

The School Organizational Climate Questionnaire as first developed consisted of six subscales, Participatory Decision-Making, Administrative Control, Professional Involvement, Innovation, Peer Cohesion, and Work Pressure. This form of the questionnaire was reviewed by researchers knowledgeable about instruments for assessing school climate and then revised and tested with a sample of 56 secondary school teachers from 11 different schools. This was followed by a re-test of the

instrument with 23^d randomly selected secondary school teachers from 23 secondary schools. The instrument reliability and discriminant validity from that study are presented in Table 2. They assessed discriminant validity by comparing the mean correlation of a scale with the other scales which ranged from .17 to .56.

Table 2

Reliability and Discriminant Validity for the School Organizational

Climate Questionnaire

Scale	Alpha Reliability	Mean Correlation with other Scales
Participatory Decision Making (Unit Decision Making)	.85	.41
Administrative Control (Control Over Practice)	.64	.19
Professional Involvement (Professional Development)	.79	.48
Innovation	.90	.56
Peer Cohesion	.79	.48
Work Pressure	.77	.17

Note. Giddings, G., & Dellar, G. (1990) The development and use of an instrument for assessing the organizational climate of schools. Paper presented at the annual meeting of the American Educational Research Association, Boston, MA.

To improve the internal consistency of each scale, items, with low item-remainder correlations were removed or rewritten. To improve discriminant validity,

items, whose correlation with its a priori assigned scale was lower than its correlation with any of the other scales, were removed or rewritten. The scale titled "administrative control" was retitled "teacher autonomy". A new scale "commitment" was included with the aim of assessing perceptions of the degree to which teachers were supportive of and committed to their school (Giddings & Dellar, 1990).

Definitions of the dependent variables of this study which are measured by the four subscales are presented in Table 3.

Table 3

Aspects of a Professional Practice Environment

Scale	Definition
Control over Practice	The degree to which staff have autonomy over their work lives within the work unit.
Professional Development	The degree to which nurses are concerned about their work and committed to professional growth.
Innovativeness	The degree to which variety, change, and new approaches are emphasized on the work unit.
Peer Cohesion	The degree to which staff are friendly and supportive of each other.

Note. Adapted from: Giddings, G., & Dellar, G. (1990). The development and use of an instrument for assessing the organizational climate of schools. Paper presented at the annual meeting of the American Educational Research Association, Boston, MA.

Note. The words "nurse" and "unit" have been substituted for "teacher" and "school".

The items from the four subscales used to measure the dependent variables are listed in Table 4. The reliability and validity of the instruments for this sample are further described in the next chapter in which the study results are presented.

Table 4

Items From the Dependent Variable Subscales Control Over Practice, Professional Development, Innovativeness, and Peer Cohesion

Control over Practice

There is little emphasis placed on following nursing policies (6).

The nurse manager expects all nurses to follow directions correctly (13).

Individual nurses are free to establish their own nursing procedures (20).

Nurses are allowed to do almost as they please in their own area (27).

Rules concerning the duties of staff are frequently enforced (34).

Senior staff seldom observe nurses or supervise them closely (41).

The nurse manager monitors closely the activities of nurses on the unit (48).

Nurses are expected to follow the established procedures and customs of the hospital (55).

Note. Reverse scoring for items 13, 34, 48, 55.

Table 4 (continued)

Professional Development

Nurses frequently discuss nursing methods and strategies with each other (2).

Nurses avoid talking about nursing issues with each other (9).

Professional development matters are seldom discussed during staff meetings (16).

Nurses are keen to learn from their colleagues (23).

Many nurses attend inservice and other professional development courses (30).

Nurses show considerable interest in the professional activities of their colleagues (37).

Nurses show little interest in nursing procedures used on other units (44).

Nurses on this unit are not committed to staying abreast of current developments in their nursing speciality (51).

Note. Reverse scoring for items 9, 16, 44, 51.

Innovativeness

Nurses are encouraged to be innovators on this unit (7).

Doing things in a different way is valued on this unit (14).

It is difficult to change anything on this unit (21).

Variety and change is not considered important on this unit (28).

New information and nursing methods are frequently implemented on this unit (35).

New approaches to things are rarely tried (42).

There is a great deal of resistance to proposals for nursing change (49).

This unit is among the first to try out new and interesting ideas (56).

Note. Reverse scoring for items 21, 28, 42, 49.

Table 4 (continued)

Peer Cohesion

Nurses do not go out of their way to help a new nurse feel comfortable (5).

Nurses mix freely, there are no cliques (12).

Nurses can rely on colleagues for support and assistance if needed (19).

Nurses do not mix socially with each other outside of work (26).

Nurses have many friends among their colleagues at work (33).

Nurses rarely eat lunch together (40).

Nurses who hold differing opinions from others on the unit tend not to get on with each other (47).

Nurses readily co-operate with other members of staff on joint activities (54).

Note. Reverse scoring for items 5, 26, 40, 47.

In a complex practice environment there exist potential extraneous or nuisance variables which may affect the relationship between the independent and dependent variables. In the context of regression, Darlington (1990) suggested controlling statistically for extraneous variables in order to partial out the effects of these variables. One extraneous variable, Work Pressure, had the potential to confound the interpretation of the findings. Alexander et al. (1982) found that work pressure influenced clinical staff nurses perceptions of autonomy which is part of control over practice. The extraneous variable was measured by a subscale from the School

Organization Climate Questionnaire (Giddings & Dellar, 1990). Work Pressure was defined as the degree to which the pressure of work dominates the work milieu (Giddings & Dellar, 1990; Moos, 1974a, 1974b). This definition was used in this study. The items from the subscale used to measure the extraneous variable are listed in Table 5.

Table 5

Subscale Items for the Extraneous Variable Work Pressure

Work Pressure

There is constant pressure to keep working (3).

There are seldom deadlines to be met (10).

Nurses cannot afford to relax on this unit (17).

The staff on this unit do not work too hard (24).

There is no pressure on time on this unit (31).

It is hard to keep up with your workload (38).

You can take it easy and still get your work done on this unit (45).

Nurses have to work hard to keep up with work load (52).

Note. Reverse scoring for items 10, 24, 31, 45.

Demographic Data Form

A Demographic Data Form was developed by the researcher (Appendix D). It was used to collect individual and situational data from the respondents in order to establish eligibility to participate, to provide descriptive information about the sample, and to collect information useful to determine any potential moderating effects on the relationship between the independent and dependent variables. The demographic variables were respondent's age, gender, basic nursing education, highest earned degree, length of experience as a nurse, and length of experience on the current work unit. Situational variables were number of clinical specialties on the work unit, size of the work unit, and type of nursing care delivery system.

The data gathering instruments were combined into a single questionnaire format for this study. Ten clinical nurses from the same organization were asked to read and comment on the clarity of the instruments. Changes to the instructions and some aspects of the Demographic Form were made on the basis of their responses.

Data Collection Procedure

After the university and hospital research ethics committees approvals were obtained, a representative from the hospital nursing research department selected a random sample. A list of 500 randomly picked numbers from a total of 1350 was generated from a computer program. The 500 randomly picked numbers were matched to a numbered list of the 1350 professional clinical nursing employees and the resulting list of 500 names was provided to the investigator as potential subjects for the study.

A packet of materials was sent to the work units addressed to each subject. The packets contained a letter explaining the study, the research questionnaire, and a stamped return envelope addressed to the investigator's home. The letter inviting participation contained information about the study (Appendix A). It described the purpose and procedures of the study, including methods to protect confidentiality, and the participant risks and benefits. A deadline date of two weeks for return of the completed questionnaire was set. A follow-up letter which thanked those who had responded and encouraged others to do so was sent to each subject after two weeks (Appendix E). In order to encourage maximum response, a second follow-up letter (Appendix F) and the questionnaire were sent within two weeks of the first follow-up letter as suggested by Babbie (1986). Responses numbered 210 at the time of the first follow-up letter, 257 at the time of the second follow-up. The mailing of the second follow-up letter and the second questionnaire resulted in 63 additional responses for a total of 320.

Human Rights Protection

Return of the completed questionnaire constituted voluntary, informed consent. A request to sign a consent form would reduce the confidentiality of the sample by providing the names of those who participated. The subjects were guaranteed complete anonymity. There were no identifying data collected about subjects or work units. All responses were kept confidential. Subjects were informed that there were no known risks or direct benefits to them. Individuals were assured that the decision to participate or not to participate would in no way affect their employment.

Volunteers were invited to contact the investigator or faculty advisor with any questions about the study. They were informed that they could contact the researcher for information about results. Two participants contacted the investigator with queries about how to answer the questionnaire since they had recently had a change in nurse manager and it was too soon to assess their participation in decision making and their work environment. They were instructed to answer according to how it was prior to the change because that approach would provide data about the relationship of the study variables.

Data Analysis

In this section the methods used for the preliminary analyses of data to describe sample characteristics and determine reliability and validity are presented. This is followed by a description of the study procedures used to examine the relationships among the variables.

Preliminary Analyses

Preliminary analyses included descriptive characteristics of the sample and an assessment of instrument reliability and construct validity for this sample. The reliability coefficients (internal consistency) for the instruments used in this study were examined using Cronbach's alpha. Internal consistency was the type of reliability assessed since most pronounced measurement errors are evident in measures of internal consistency (Nunnally, 1978). Confirmatory factor analysis was

used to identify the factor structure of the instruments in order to assess the construct validity. Confirmatory factor analysis is aimed at the testing of a model and the assessment of its fit to data (Pedhazur & Schmelkin, 1991).

Examination of Relationships Among Study Variables

Pearson correlation matrices were completed and multiple regression analyses were completed to assess if there was a linear relationship between decentralization and perceived aspects of professional practice. Subsets of variables were analyzed to complete the model building process to determine which combinations of variables represented the best relationship.

The extraneous variable work pressure was identified in the literature as having a potential to affect the relationship between the independent and dependent variables. This variable was controlled statistically using the method described by Darlington (1990).

Selected moderating variables were tested for effects on the relationships between the dependent and independent variables. Moderating variables included gender, age, employment category, education, unit type, unit size, nursing care delivery system, tenure as a nurse, and work tenure

Summary

The methodology of the study was presented in this chapter. The study design and the sample were discussed, including procedures for protecting the rights of human subjects. The data gathering instruments were described and methods for data analysis were proposed. Results are presented in the next chapter.

CHAPTER V

Results

The findings of this study are described in the three sections of this chapter. A description of the sample is presented. The instrument reliability and construct validity for this sample are discussed. This is followed by the results of the multiple regression analyses for hypotheses testing and model building which includes a discussion of the basic assumptions of multiple regression. The analysis of the moderating variables is presented with the discussion of each hypothesis.

Descriptive Statistics

Of the 500 questionnaires sent out, a 64% useable return rate resulted in a sample consisting of 320 clinical staff nurses currently employed in a university teaching hospital in Ontario. Missing data were rarely experienced in this study. Occasionally, items were unanswered suggesting a random phenomenon with no patterns of missing items detected. The mean of the variable for the sample was substituted on those infrequent occasions when an item was unanswered. The computer program SPSS was used for most of the data analysis.

The general characteristics of the research participants are presented in Table 6. The majority of the subjects ranged in age from 30 to 49 years and women

comprised over 97% of the sample. Approximately two-thirds of the sample worked full-time. More than 60% of the sample had over 10 years experience as a nurse; however, the length of time spent in the current work position was evenly split over the four choices ranging from six months to over 10 years. The small number of new graduates and the large number of experienced nurses in their current position for less than two years is a reflection of recent ward closures and the reassignment of staff. The majority of nurses held a Diploma, 17% held a Baccalaureate in nursing, and only one held a nursing Masters degree. Less than 10% of the sample had university preparation other than nursing. This sample is similar to the clinical nurse population in Ontario (Canadian Nurses Association, 1992).

Table 6

General Characteristics of Study Participants

Characteristics	Frequency	Percentage
<u>Age</u>		
20-29	66	20.7
30-39	123	38.6
40-49	95	29.7
50-59	33	10.3
> 60	<u>2</u>	<u>6</u>
	319	99.7
<u>Gender</u>		
Female	313	97.8
Male	<u>7</u>	<u>2.2</u>
	320	100.0

Table 6 (continued)

Work Status

Full-time	215	67.2
Part-time	<u>105</u>	<u>32.8</u>
	320	100.0

Number of YearsAs a Nurse

.5-2	7	2.2
3-4	30	9.4
5-10	83	25.9
> 10	<u>199</u>	<u>62.2</u>
	319	99.7

Number of Years inCurrent Position

.5-2	82	25.8
3-4	78	24.5
5-10	84	26.4
> 10	<u>74</u>	<u>23.3</u>
	318	99.4

Nursing Education

Diploma	263	82.2
Bachelors	54	16.9
Masters	<u>1</u>	<u>.3</u>
	318	99.4

Other Education

Bachelors	29	9.1
Masters	1	.3
None	<u>278</u>	<u>86.9</u>
	308	96.2

Note. Some totals are less than 320 because of missing data.

Characteristics of participants' work settings are found in Table 7. Close to 70% worked with a total patient care nursing care delivery system. Thirty percent of the sample worked in medical or surgical areas compared to 25% from critical care units. The majority of nurses worked on units with a single medical specialty or with two to three medical specialties. Approximately 70% of the participants worked in units with over 26 nurses. These units reflect either wards with critically ill or with large numbers of patients.

Table 7

Characteristics of Participants' Work

Characteristics	Frequency	Percentage
<u>Nursing Care Delivery System</u>		
Total Patient Care	219	68.4
Primary Nursing	42	13.1
Other	<u>53</u>	<u>16.6</u>
	314	98.1
<u>Nursing Unit Specialty</u>		
Medicine	36	11.3
Surgery	59	18.4
Maternal-child	34	10.6
Critical care	81	25.3
Short stay	53	16.6
Other	<u>54</u>	<u>16.9</u>
	317	99.1

Table 7 (Continued)

Number of Medical
Specialties Admitted

1	110	34.4
2-3	95	29.7
4-5	15	4.7
> 5	<u>77</u>	<u>24.1</u>
	297	92.9

Number of RN staff

< 5	22	6.9
5-15	19	5.9
16-25	46	14.4
26-40	112	35.0
41-60	71	22.2
> 60	<u>49</u>	<u>15.3</u>
	319	99.7

Note. Some totals are less than 320 because of missing data.

Reliability and Validity**Reliability**

The instruments in this study were examined for reliability using Cronbach's alpha (Cronbach, 1951). The obtained reliability coefficients are reported in Table 8. Most alpha coefficients met the minimum standard of .70 (Fraenkel & Wallen, 1990) with the exception of two. The subscale Participation in Decision Making had an alpha of .65 which is moderately acceptable for a scale of 4 items. Removing the first two items which relate to specific decisions about hiring and promoting personnel,

leaves the remaining two items with a reliability of .82 but detracts from the substance of the scale which measures participation in particular types of decisions. Ringerman (1990) found an alpha coefficient to be .67 with a nurse manager sample and Corley et al. (1993) found a coefficient alpha of .83 with a clinical nurse sample. Barhyte et al. (1987) reported alpha coefficients ranging from .86 to .88 with a clinical nurse sample.

Table 8

Cronbach Alpha Reliability Coefficients for
Internal Consistency of Measures (N = 320)

Scale	Number of Items	Alpha Coefficients
Participation in Decision Making	4	.65
Hierarchy of Authority	5	.91
Unit Decision Making	8	.86
Control Over Practice	8	.53
Professional Development	8	.77
Innovativeness	8	.85
Peer Cohesion	8	.74
Work Pressure	8	.77

The subscale Control Over Practice had an alpha of .53. Of the 8 items it appears that 3 may be interpreted either as an appropriate form of managerial control or as unnecessary or unwanted managerial interference in clinical nurse practice. Because clinical nurses work in a situation where continuity of care is important, an expectation that policies will be followed can be seen as positive and little emphasis on policies may be interpreted not as providing control over practice for the nurse but as licence for any behaviour. The item, "There is little emphasis placed on following nursing policies" is an example which may have led to dual interpretation. Removing the two most ambiguous items resulted in alpha coefficient of .57 which is not a notable improvement. Further data analysis was conducted with both of the original scales unchanged.

Validity

Using the computer program SAS, confirmatory factor analysis was completed on both measurement instruments, the Index of Centralization and the Professional Practice Environment Scale, to assess the construct validity of the tools for this sample. In confirmatory factor analysis, unlike exploratory factor analysis, the indicators (items) are specified to the factor (construct) and are not permitted to load on other factors (Pedhazur & Schmelkin, 1991). Based on the model of the questionnaire, specific expectations regarding the number of factors and their loadings are tested on the sample data. Maximum likelihood estimation was used in the confirmatory factor analysis. The presentation of results includes a discussion of the

common indices used to assess the goodness-of-fit of the proposed factor models to the data.

Hoelter (1983) suggested that "Testing models with large samples is always desirable, and the question that needs to be addressed deals with how well a model *approximates* the observed data rather than whether or not the model *fits* the data" (p.328). Hypothesized models are best regarded as approximations to reality rather than exact statements of truth (Marsh, Balla, & McDonald, 1988). For this reason, Cudeck and Browne (1983) proposed that any given model "be regarded as one of many formulations for describing behavioural theory, some of which are reasonable" (p.50).

The factor loadings of the items on the Index of Centralization are presented in Table 9. The subscale Hierarchy of Authority appears to be a valid construct with all items having high loadings on that factor. The Participation in Decision Making subscale has 2 items that loaded high but items 1 and 2 loaded very low with item 2 under .3. These two items refer to specific decisions about resource allocation which apparently are not typical of the types of decisions made by the subjects in this study.

The assessment of overall model fit is a controversial topic in covariance structure models, including confirmatory factor analyses (Bollen, 1990). There is no unambiguous answer as to how large goodness-of-fit indices must be to indicate an adequate fit (Bollen, 1989). Most goodness-of-fit indices in the literature range between zero and unity, with zero indicating a complete lack of fit and unity indicating perfect fit. Chi Square and Root Mean Square Residuals are exceptions.

Table 9

Factor Loadings of Items on the Index
of Centralization

Item	Factor	
	1	2
Participation in Decision Making		
1	.3046	
2	.2464	
3	.8219	
4	.8452	
Hierarchy of Authority		
5		.7513
6		.6949
7		.8210
8		.9241
9		.8941

Bentler and Bonnet (1980) suggested that models with overall fit indices of less than .9 can be improved. When chi-square statistics are used as goodness-of-fit indices, they range between zero and infinity, with zero indicating perfect fit and a large number indicating extreme lack of fit (Mulaik et al., 1989). Root Mean Square Residual is a global measure of fit which is zero if the fit is perfect (Bollen, 1989). Because the chi-square statistic, in large samples such as in this study, is extremely

sensitive even to minor deviations of sample data from the proposed model, fit indices that are not as sensitive to sample size were considered. Bollen (1989) noted that by current standards an N of 138 is a small to moderate sample. Based on the indices and other related statistics presented in Table 10, the two factor model has only a moderate fit with the data in the covariance matrix. It does not have an excellent fit, noted by Bollen (1989) as having indices close to or over 0.96. Bollen (1989) suggested that if the model helps us to understand the relationships among variables and does a "reasonable" job of matching the data, the model may be judged as partially validated.

Table 10

Model Fit Indices and Related Statistics for Confirmatory

Factor Analysis of the Index of Centralization

Goodness of Fit Index (GFI)	.90
GFI adjusted for <i>df</i> (AGFI)	.83
McDonald's (1989) Centrality	.83
Bentler's Comparative Fit Index	.91
Bentler & Bonnet's (1980) Non Normed Index	.89
Bentler & Bonnet's (1980) Normed Index	.90
Root Mean Square Residual (RMR)	.07
Chi-Square <i>df</i> =26 prob > chi**2 <i>p</i> = .00	147.17

The factor loadings of the items on the Professional Practice Environment Scale are presented in Table 11. The instrument included subscales that measured one independent variable, four dependent variables, and one extraneous variable. The confirmatory factor analysis was done to test the model fit of the instrument to the sample data. Several of the latent variables appear to have adequate construct validity although the overall fit does not support the model for the complete questionnaire. Constructs with reasonably high factor loadings include Unit Decision Making, Professional Development, Innovativeness.

The factor loadings on the constructs Peer Cohesion and Work Pressure are moderately high, however both constructs have one item that does not load at .4 or larger. Control Over Practice is the one construct that has 3 items loading under .4 and the remaining item loadings are also quite low. Based on the indices and other related statistics presented in Table 12, the model does not seem to have a satisfactory overall fit with the data in the covariance matrix.

Standards set by previous work is one factor which influences the choice of cutoffs for fit indices (Bollen, 1989). The investigator can put results in perspective relative to other analyses with similar variables if such results are available. Unfortunately, neither the Professional Practice Environment Scale nor its antecedent the School Organizational Climate Questionnaire have been analyzed by confirmatory factor analysis prior to this study.

Table 11

Factor Loadings of Items on the Professional Practice Environment Scale

Item	Factor					
	1	2	3	4	5	6
Unit Decision Making						
4	.58					
11	.64					
13	.76					
25	.65					
32	.70					
39	.66					
46	.68					
53	.58					
Control Over Practice						
6		.48				
13		.49				
20		.14				
27		.46				
34		.44				
41		.18				
48		.40				
55		.33				
Professional Development						
2			.48			
9			.45			
16			.57			
23			.61			
30			.55			
37			.68			
44			.45			
51			.60			
Innovativeness						
7				.59		
14				.54		
21				.75		
28				.68		
35				.60		
42				.79		
49				.58		
56				.63		
Peer Cohesion						
5					.55	
12					.47	
19					.63	
26					.54	
33					.65	
40					.27	
47					.55	
54					.51	
Work Pressure						
3						.52
10						.21
17						.63
24						.46
31						.52
38						.71
45						.60
52						.68

Table 12

Model Fit Indices and Related Statistics for Confirmatory
Factor Analysis of the Professional Practice Environment Scale

Goodness of Fit Index (GFI)	.76
GFI adjusted for <i>df</i> (AGFI)	.74
McDonald's (1989) Centrality	.14
Bentler's Comparative Fit Index	.80
Bentler & Bonnet's (1980) Non Normed Index	.79
Bentler & Bonnet's (1980) Normed Index	.65
Root Mean Square Residual (RMR)	.09
Chi-Square <i>df</i> 1463 prob > chi**2 <i>p</i> = .00	2699.31

Based on the above analysis, it appears that while the total instruments have weak reliability and validity for this sample, the majority of the subscales have suitable reliability and sufficiently high factor loadings to suggest adequate construct validity. The first two items on the Participation in Decision Making subscale are a source of problems. The subscale Control Over Practice which measures one of the dependent variables is the subscale of most concern and any conclusions related to

this variable must be tentative. Confirmatory factor analysis was repeated omitting subscale items with factor loadings less than 0.3. The result of this procedure was a very slight improvement in the overall fit of the model.

Descriptive Statistics for the Instruments

The Index of Centralization is comprised of two subscales, Participation in Decision Making and Hierarchy of Authority. The Professional Practice Environment Questionnaire is comprised of seven subscales, six of which were used in this study. Each subscale was scored by summing the scores on the items. Items that were scored in reverse were transformed prior to summation. The mean, median, mode, standard deviation, skewness, and range for each subscale are presented in Table 13.

Analysis of the Index of Centralization data indicates that the subscale Participation in Decision Making has a mode of 4 which is the lowest score possible in the range of 4 to 20. The percent of subjects at the mode was 22.5. Eighty-two percent of participants selected never or seldom as their response. This indicates very low participation in decisions about resource allocation and determination of organizational policies. Other investigators found a similar problem, especially with the first two items for which subjects selected never or seldom as the majority response (Corley et al., 1993).

Table 13

Descriptive Statistics for the Subscales of The Index of Centralization and
the Professional Practice Environment Scale

Variable*	Mean	Standard Deviation	Median	Mode	Skew	Range
PDM	6.53	2.08	6.22	4.00	.691	4.00-15.00
HOA	14.76	4.40	15.35	20.00	-.525	5.00-20.00
UDM	26.79	6.03	27.91	30.00	-.737	8.00-40.00
COP	19.98	3.69	20.10	20.00	.147	11.00-31.00
PRODEV	28.68	4.73	29.58	30.00	.845	10.00-40.00
INNOV	25.22	5.88	26.17	28.00	-.530	8.00-40.00
PEER	29.27	4.56	29.78	30.00	-.754	13.00-40.00
WORK	28.94	5.10	28.97	28.00	-.122	12.00-40.00

Note. * In this table, and all remaining tables, the variables are abbreviated as follows:

PDM	Participation in Decision Making
HOA	Hierarchy of Authority
UDM	Unit Decision Making
COP	Control Over Practice
PRODEV	Professional Development
INNOV	Innovation
PEER	Peer Cohesion
WORK	Work Pressure

The Hierarchy of Authority subscale, with a range of 4 to 20, has a mode of 20 (18.5 % of subjects) and the median and mean were very similar. These high values indicate a large degree of authority for work decisions or high decentralization. Having authority for work decisions is a different form of decentralization than participation in work-related group decisions.

In respect to the Professional Practice Environment Questionnaire, which has a range of 5 to 40, two subscales have close to normal distributions, Control Over Practice and Work Pressure. A high mean on the Work Pressure score indicates that subjects perceived considerable pressure from their job activities. Most of the other subscales are reasonably normal with some negative skewness. The Professional Development subscale is positively skewed with an almost equal median and mode.

Regression Analysis

Multiple regression analyses were used to test the hypotheses of this study and to develop models. The assumptions underlying multiple regression analysis were tested for violations. In the model building process the multiple regression analysis of the independent variables and dependent variables included the extraneous variable, Work Pressure, because this extraneous factor had the potential to affect and confound interpretation of the study findings unless it was statistically controlled (Darlington, 1990).

Assumptions

Darlington (1990) suggests that four assumptions, linearity, normality, homoscedasticity, and independence of the sample, are necessary in order to draw inferences about relationships of variables in the population from which the sample was drawn. Tests to determine whether the assumptions appeared to be violated were conducted as well as a test for the degree of collinearity among the variables which can be an issue of concern in multiple regression analysis (Darlington, 1990). Bivariate scatterplots for each dependent and independent variable were plotted and graphically analyzed to determine whether it was appropriate to assume that the dependent variables and independent variables were linearly related. Positive linear relationships were evident in all plots because the points appeared to scatter around a straight line. Another method to assess for a linear relationship was analysis of scatterplots of the residuals against predicted values and the residuals against the values of the independent variables. Points fell in horizontal bands and no pattern was observed in any of the plots.

Normality was checked by assessing histograms of the standardized residuals for each independent variable with the four dependent variables. The distribution of residuals appeared to be moderately normal in each case with some positive skewness in the histogram of Participation in Decision Making. Despite the unusual distributions evident from the descriptive statistics, only a small number of outliers were noted, the largest number was four.

Residuals were plotted against the predicted values, and also against the values of the independent variables to check for homoscedasticity. The spread of the residuals did not increase or decrease either with the values of the independent variables or with the predicted values indicating that the variance was constant.

When it can be assumed that one subject's responses are not related to another, independence of the sample exists. In this study, this assumption may be violated because within the random sample of nurses it was possible that more than one was selected from the same unit. In these cases, subjects are responding to the same nurse manager and unit issues; therefore, responses are more related than they are to nurse responses between units which results in a clustering effect. A clustering effect results in an inflation of the Type I error rate (Zimmerman & Zumbo, 1993). Although not the optimal solution, the risk of committing a Type I error can be lowered by setting a lower significance level like .01 instead of .05.

Collinearity is another issue of concern when using multiple regression to analyze data. Pearson correlation coefficients reflect that the independent variables in this study are not independent of each other: Participation in Decision Making with Hierarchy of Authority, ($r = .22$) and with Unit Decision Making, ($r = .36$); Hierarchy of Authority with Unit Decision Making, ($r = .54$). The degree of collinearity is assessed through the measure of tolerance. Tolerance is used to measure the independence of each regressor from the other. Tolerance of "0" denotes perfect dependence, while tolerance of "1" signifies perfect independence. All independent variables were regressed on each dependent variable to obtain the

tolerance levels. The tolerance levels in this study ranged from .65 to .87.

Although the assumption of independence was violated, and the distributions for the Participation in Decision Making and Hierarchy of Authority subscales do not appear to be normal, the results from the residual testing suggest that the lack of normality would not seriously affect further analysis. All other assumptions were met sufficiently to proceed with further analysis.

Hypothesis Testing and Model Building

Data analysis included a model building process to develop a "best-fitting" model to explain the relationship between the independent and the dependent variables. A nonconventional level of statistical significance of .01 rather than .05 was used. This more stringent level was set in an attempt to account for difficulties arising from the large sample size (Huberty, 1989; Pedhazur, 1982) as well as the potential for Type I error inflation from within-group clustering. The model building process included one extraneous variable, Work Pressure, which was controlled statistically.

Henderson and Velleman (1981) noted that automated multiple regression model-building techniques often hide important aspects of data from the data analyst and make decisions that might better be made by the analyst. Instead of automated multiple regression, data exploration has been recommended by several authors (Huberty, 1989; Tatsuoka, 1982). Further, it has been suggested that there are problems with automated stepwise multiple regression analyses and misuses of such analyses are fairly common (Huberty, 1989). One alternative for variable selection

and variable ordering is to consider regression equations for all possible variable subsets (Huberty, 1989, p. 50). In an attempt to determine a "best-fitting model" an exploratory analysis of the extraneous and independent variables with each of the dependent variables was conducted.

Pedhazur (1982) suggests that no single criterion is available for determining how many and which predictors are to comprise the "best" subset. One may use a criterion of meaningfulness, statistical significance, or a combination of both. With large samples even a minute increment in R^2 may be declared statistically significant. Since the use of large samples is mandatory in regression analysis, it is imprudent to rely solely on tests of statistical significance. In order to deter acceptance of a model that provides a statistically significant increment in R^2 but is not substantively meaningful, Pedhazur (1982) recommended that meaningfulness be the primary consideration in deciding what is the "best" equation and that tests of statistical significance be used as adjuncts in such decisions. Cohen (1992) adopts a similar view and has established effect-size indices and conventional values for these which are operationally defined for small, medium, and large effects. Cohen (1992, p. 156) proposed the following conventions for the three effect-sizes: a small effect-size represents an effect noticeably smaller than medium but not so small as to be trivial, a medium effect represents an effect likely to be visible to the naked eye of a careful observer, and a large effect-size to be the same distance above medium as small was below it. In addition to the use of the available substantive theory, Cohen (1992) suggested the values for a small, medium, and large effect-size are .10, .30, and .50

for product-moment r . The Pearson correlation coefficients for the independent and dependent variables, and the extraneous variable are presented in Table 14. The relationships among the independent and dependent variables are positive and all but three are statistically significant. The correlation coefficients for the extraneous variable Work Pressure are all negative as expected. A perceived high degree of pressure from work has potential to interfere with the relationships among the other variables.

Table 14

Pearson Correlation Coefficients for Relationships Among Decentralization,

Control Over Practice, Professional Development, Innovativeness,

Peer Cohesion and the Extraneous Variable Work Pressure

	UDM	H0A	COP	PRO DEV	INNOV	PEER	WORK
1 Decentralization (Participation in Decision Making)	.36*	.22*	.04	.21*	.30*	.08	-.18*
2 Decentralization (Unit Decision Making)		.54*	.07	.49*	.73*	.30*	-.34*
3 Decentralization (Hierarchy of Authority)			.16*	.34*	.48*	.28*	-.20*
4 Control Over Practice				.23*	.02	-.09	-.20*
5 Professional Development					.65*	.66*	-.06
6 Innovativeness						.48*	-.25*
7 Peer Cohesion							-.09

Note. *Significant at .01 level, all two-tailed.

Following the model building process used with the total sample, a similar process was carried out with the moderating variables. The demographic variables related to individual and work characteristics were considered as possible moderating variables. Data analysis was done to determine if these moderating variables had any effect on the relationships between the dependent and independent variables. It has been suggested that by taking into account certain characteristics that would distinguish one subgroup from another in the total sample it is possible to increase R^2 (Ghiselli, Campbell, & Zedeck, 1981). Only results that showed statistically significant R^2 results for a subset are presented. As well, to avoid considering trivial increases in R^2 , only increases of 10% or more of explained variance were considered. This was an arbitrary choice in an attempt to ensure that findings would have some meaning beyond what would be significant even at the .01 level. The results of the subgroup were compared to the total sample. Some variables were not included in the analyses due to lack of sufficient numbers in one or more subgroups. The effect of gender was not assessed because there were only seven males in the sample. Similarly, other education and type of nursing care delivery system were not included in the analyses.

The following findings should be put into perspective considering the reliability and validity results for the subscales Control Over Practice and Participation in Decision Making. As well, findings from the subgroup analyses, while interesting and suggestive, may be due to chance.

Hypothesis 1. It was hypothesized that *decentralized decision making is positively related to perceived control over professional practice*. Findings indicated that there was a positive relationship between decentralized decision making and perceived control over professional practice. As seen in Table 14, all decentralization variables correlate positively with Control Over Practice. However, only the relationship between the variable Hierarchy of Authority and Control Over Practice was statistically significant at the .01 level. There was partial support for the hypothesis from the positive relationship between Hierarchy of Authority and Control Over Practice. The Pearson correlation coefficient for Hierarchy of Authority and Control Over Practice was .16 which reflects a small effect-size. The relationship between Control Over Practice and the remaining two decentralized decision-making dimensions, Participation in Decision Making, which measured participation in strategic decisions, and Unit Decision Making, which measured participation in local ward decisions, failed to reach the .01 level of statistical significance.

Only regression results demonstrating statistical significance were used for the model building process. The extraneous variable Work Pressure and the independent variable Hierarchy of Authority were the only variables that had statistically significant relationships with Control Over Practice. In a model, in which Work Pressure was statistically controlled, the R^2 was .04. The F test yielded an F -ratio of 13.41 with 1 and 318 degrees of freedom which was statistically significant at the .01 level. The R^2 change for the independent variable Hierarchy of Authority when regressed on the dependent variable Control Over Practice was only 1% which was

not statistically significant. Most of the variance in the variable Control Over Practice was contributed by Work Pressure.

Moderating variables have the potential to increase R^2 (Ghiselli, et al., 1981). To assess the effects of the moderating variables on the above relationships, the same model building process used with the total sample was undertaken with each subgroup with sufficient numbers to run the analyses. In a model with Hierarchy of Authority regressed on Control Over Practice with Work Pressure statistically controlled, no moderating variables increased the R^2 by at least .10 beyond the R^2 for the total sample.

Hypothesis 2. The second hypothesis was *decentralized decision making is positively related to perceived professional development*. The results of the study showed there was a positive relationship between decentralized decision making and perceived professional development activity by nurses. All three independent variables representing decentralized decision making showed positive and statistically significant relationships to Professional Development at the .01 level. Hypothesis 2 was supported.

Both components of participation in group decision making had important effects on professional development. The Pearson correlation coefficient for Participation in Decision Making with Professional Development, .21, was a statistically significant result which is a moderate effect-size. The Pearson correlation coefficient for Unit Decision Making with Professional Development, .49, was a statistically significant result and, as well, represents a large effect-size.

Hierarchy of Authority also had an important and significant effect on professional development. The Pearson correlation coefficient for Hierarchy of Authority and Professional Development was .34 which reflects a moderate effect-size.

The three independent variables taken together were regressed on the variable Professional Development, R^2 was .25. The F test yielded an F -ratio of 34.24 with 3 and 316 degrees of freedom which was statistically significant at the .01 level. The model building process included only regression results demonstrating a statistically significant R^2 , and, since the extraneous variable Work Pressure did not contribute any variance to Professional Development it was not used in further analyses with this variable. The order of entry was based on the individual contribution of each independent variable to the dependent variable, Professional Development, from large to small.

Unit Decision Making contributed 24% of the variance to Professional Development. Although Hierarchy of Authority explained 11% of the variance when regressed on Professional Development, it only contributed an additional 1% (not significant) of the variance when added to a model with Unit Decision Making. Participation in Decision Making contributed only 4% of the variance in Professional Development when used alone in a regression model, and added nothing when placed in a model with Unit Decision Making and Hierarchy of Authority.

The relationships between the independent variables and Professional Development were moderated by a number of variables. In a model with all three

independent variables regressed on professional development, five subgroups resulted in an increase in the R^2 by .10 beyond the .25 for the total sample (Table 15).

Table 15

Moderated Relationships for Unit Decision Making,
Hierarchy of Authority, and Participation in Decision
Making Regressed on Professional Development

Group or Subgroup	N	R^2
Total	320	.25*
# Years in Current Position (3-4)	78	.42*
# Years in Current Position (5-10)	84	.37*
Nursing Education (BScN)	54	.37*
# Medical Specialties (1)	110	.40*
# RNs on Unit (>40)	120	.35*

Note. * Significant at .01 level.

In a model building process using Unit Decision Making, Hierarchy of Authority, and Participation in Decision Making added individually, similar to the

process used with the total sample. When Unit Decision Making was regressed on Professional Development, only two of the subgroups resulted in an increase in R^2 of at least 10%. Those subgroups were Nursing Education (BScN) and One Medical Specialty (Table 16).

Table 16

Moderated Relationships Between Unit Decision Making,

Hierarchy of Authority and Professional Development

Group or Subgroup	Unit Decision Making		Unit Decision Making and Hierarchy of Authority	
	N	R^2	R^2	R^2 Change
Total	320	.24 ^{**}	.24 [*]	.01
# Years in Current Position (3-4)	78	.33 [*]	.40 [*]	.07 [*]
# Years in Current Position (5-10)	84	.33 [*]	.33 [*]	.00
Nursing Education (BScN)	54	.37 [*]	.37 [*]	.00
# Medical Specialties (1)	110	.40 [*]	.40 [*]	.00
# RNs on Unit (>40)	120	.31 [*]	.35 [*]	.04

Note. * Significant at .01 level. ** Similarity due to rounding off values.

All but one of the five subgroups demonstrated an increase in R^2 of at least .10 when Hierarchy of Authority was added to a model with Unit Decision Making regressed on Professional Development. However, only one subgroup had a statistically significant R^2 change when Hierarchy of Authority was added to the model. That subgroup was the 3-4 Years in Current Position (Table 16). In the model for the subgroup of 3-4 Years in Current Position the R^2 increased to .40 when Hierarchy of Authority was added. The 7% increase in explained variance was statistically significant and compared to 1% for the total sample. The addition of Participation in Decision Making did not account for any more variance. For this subgroup, the most effective model would include Unit Decision Making and Hierarchy of Authority, unlike the total group in which the best model included only Unit Decision Making.

Hypothesis 3. It was hypothesized that *decentralized decision making is positively related to perceived innovativeness*. A positive relationship between decentralization of decision making and innovativeness was found. All three independent variables were positively and significantly related to Innovativeness at the .01 level of statistical significance. The Pearson correlation coefficient was .30 for Participation in Decision Making and Innovativeness which is a moderate effect-size (Cohen, 1992). Very large and large effect-sizes were evident in the relationships between Unit Decision Making and Hierarchy of Authority, $r = .73$ and $.48$ respectively. The hypothesis was supported.

When the three independent variables were regressed on the dependent variable Innovativeness, the R^2 was .55. The F test yielded an F -ratio of 121.77 with 3 and 293 degrees of freedom which is statistically significant at the .01 level. Based on the exploratory data analysis, variables with statistically significant R^2 values were used for further model building. An examination was made of the changes in R^2 for the independent variables, Participation in Decision Making, Unit Decision Making, and Hierarchy of Authority, in combination with the extraneous variable Work Pressure when regressed on the dependent variable Innovativeness. The independent variables were added to the model in sequence to determine their individual effects on Innovativeness, while controlling the extraneous variable, Work Pressure. The order of entry was based on the variance in common of each variable with the dependent variable, Innovativeness, from large to small. Statistically significant results are presented in Table 17. When Unit Decision Making is added to the model, it accounts for an extra 47% of the variance in Innovativeness. Hierarchy of Authority explained only another 1% of the variance which was not significant at the .01 level. Participation in Decision Making accounted for no additional variance in the dependent variable Innovativeness in a model with Unit Decision Making and Hierarchy of Authority, with the extraneous variable Work Pressure controlled statistically.

Table 17

Changes in R^2 for Unit Decision Making and the Extraneous Variable,
Work Pressure with Innovativeness

	R^2	R^2 Change	F test	F Change
Models				
1. Work Pressure	.06		22.03*	
2. Work Pressure and Unit Decision Making	.54	.47		323.92*

Note. * Significant at .01 level.

In a regression model with the three independent variables and Innovativeness, two moderating variable subgroups affected the relationship by increasing the R^2 at least .10 beyond the value in the total sample model. The subgroups were Part-time Work Status and 3-4 Years in Current Position (Table 18).

In the model building process with the three independent variables added one at a time and controlling for the extraneous variable Work Pressure, neither subgroup showed a statistically significant R^2 change when Hierarchy of Authority and Participation in Decision Making were added to the model with Unit Decision Making.

Table 18

Moderated Relationships for Unit Decision Making,
Hierarchy of Authority, and Participation in Decision
Making Regressed on Innovativeness

Group or Subgroup	<i>N</i>	<i>R</i> ²
Total	320	.55*
Work Status (Part-Time)	105	.65*
Years in Current Position (3-4)	78	.67*

Note. * Significant at .01 level.

The model building process to examine relationships with Innovativeness did resulted in a model with Unit Decision Making as the most effective and did not yield any different models specific to any of the moderating variable subgroups when compared to the total sample group.

Hypothesis 4. The fourth and final hypothesis was that *decentralized decision making is positively related to perceived peer relationships*. Results indicated there was a positive relationship between decentralization of decision making and perceived peer relationships. However, only two of the independent variables measuring

decentralization demonstrated relationships that were statistically significant at the .01 level. Pearson correlation coefficients were .30 and .28 for Unit Decision Making and Hierarchy of Authority respectively. The correlations of .30 and .28 were moderate effects-sizes (Cohen, 1992). The correlation coefficient for Participation in Decision Making and Peer Cohesion was .08 which was not statistically significant. The hypothesis was partially supported.

Based on the exploratory data analysis, variables with statistically significant results were used for further model building. Since Work Pressure and Participation in Decision Making did not have a statistically significant relationship with Peer Cohesion, they were not included in the model building process. Unit Decision Making and Hierarchy of Authority were added to the model in sequence to determine their individual effects on Peer Cohesion. The order of entry was based on the individual contribution of each variable to the dependent variable, Peer Cohesion, from large to small. When Unit Decision Making was added to the model, it accounted for 9% of the variance in Innovativeness which was statistically significant at the .01 level. Hierarchy of Authority added only another 2% of the explained variance which was not statistically significant.

In the model building process using Unit Decision Making and Hierarchy of Authority, three subgroups showed an increase in R^2 of at least .10 beyond the value for the total sample (Table 19). For critical care units and units with one medical specialty, the R^2 increased in a model with Unit Decision Making regressed on Peer Cohesion. However, the R^2 change was not significant when Hierarchy of Authority

was added to the regression models. For the subgroup of units with over 40 registered nurses, the R^2 change was .11 when Hierarchy of Authority was added to the model. This statistically significant result compares to .02 for the total sample when Hierarchy of Authority was added to the regression equation. For this subgroup, the most effective model would include unit decision making and authority for work decisions. This contrasts with the total group in which the most parsimonious model includes only unit decision making.

Table 19

Moderated Relationships Between Unit Decision Making,

Hierarchy of Authority and Peer Cohesion

Group or Subgroup	Unit Decision Making		Unit Decision Making and Hierarchy of Authority	
	<i>N</i>	R^2	R^2	R^2 Change
Total	320	.09*	.11*	.02
Medical Specialty (Critical Care)	81	.23*	.23*	.01
# Medical Specialties (1)	110	.26*	.26*	.00
# RN Staff (>40)	120	.11*	.22*	.11*

Note. * Significant at .01 level.

Summary

In this chapter, the results of the study were presented, including a discussion of the development of several models to represent the relationship between decentralization of decision making and nurses' perceived aspects of professional practice environment. In the next chapter a discussion of the study findings relative to the research questions and the identified problem is presented.

CHAPTER VI

Discussion

In this final chapter, a discussion of the study findings is presented. The implications of the results are discussed in relation to administrative practice, theory, and future research. The limitations of the study are noted.

Findings and Implications for Practice

The purpose of this study was to explore the relationship of decentralized decision making to selected aspects of professionalism in the work environment as perceived by clinical nurses. Four hypotheses were tested of which two were supported; hypotheses two and three related to professional development and innovativeness. Partial support was found for the remaining two hypotheses related to control over practice and peer relationships. Decentralization in the form of authority for work decisions was measured by the variable Hierarchy of Authority which was significantly and positively related to each of the four dependent variables; Control Over Practice, Professional Development, Innovativeness, and Peer Cohesion. Decentralization in the form of participation in group decisions has two components, participation in strategic decisions and participation in unit decisions. Both components of participation in group decisions were significantly and positively

related to Professional Development and Innovativeness. However, only the Unit Decision Making component was related to Peer Cohesion. Neither of the two variables was related to Control Over Practice.

The model building process showed that the most parsimonious model required only unit decision making when considering professional development, innovativeness, and peer relationships. However, in specific subsets of the sample, the model of choice has unit decision making and includes authority for work decisions in relation to professional development and peer relationships.

Decentralization and Control Over Practice

For clinical nurses, having authority to make work decisions may enhance feelings of control over the implementation and outcomes of decisions. This may explain the positive and moderate sized relationship observed between Hierarchy of Authority and Control Over Practice. Hierarchy of Authority measured the organizational level at which decisions involving the work or duties associated with each social position were made. Control Over Practice was defined as the degree to which staff have autonomy over their work lives within the work unit. The relationship between these variables adds empirical support to Lewis and Batey (1982) who noted that authority is a necessary precursor to autonomy or control over practice. While there is a certain logic to this relationship that is supported in the literature (Barhyte et al., 1987; Lewis & Batey, 1982; Porter O'Grady, 1991), the low reliability and validity concerns for Control Over Practice limits generalization of this finding and may explain the failure of the variable Hierarchy of Authority to

account for additional variance in the model building process when the extraneous variable Work Pressure was controlled. Felt pressure from work appears to have a small yet significant part in nurses' perceptions of control over practice. Even with decentralization, nurses may be too busy to assume control over their practice when the pressure of work is high. Perhaps as work pressure increases, even though one has decisional authority, it interferes with activities noted to be associated with control over work, for example, applying knowledge, implementing decisions, using one's best judgement (Lindsey & Attridge, 1989). Felt pressure from a high volume of work resulting from the nurse to patient ratio or from increased patient acuity may result in automatic or reactive approaches to delivery of care. Finding a balance between the degree of work pressure that equates to suitable productivity and that which permits control over practice is necessary. Authority for work decisions is operationalized by the nursing care delivery system which structures the authority for patient care decisions with the clinical nurses. In the study setting, the majority of units functioned within a Total Patient Care delivery system which provides clinical decision making authority for the duration of the nurses' shift. Perhaps with a delivery system that provided more complete authority, for example, primary nursing, decentralization would account for increased variance in control over practice. Primary nursing is a nursing care delivery system that adapts the decentralized decision making format by providing authority for work decisions for the duration of the patient's stay (Manthey, 1980).

The positive moderate sized relationship between Hierarchy of Authority and Control Over Practice contrasts with the relationship between the participation in group decision making variables and Control Over Practice. Neither variable which measured participation in decision making resulted in a statistically significant relationship with Control Over Practice. The Participation in Decision Making variable represented how much occupants of various positions participated in strategic decisions about the allocations of resources and the determination of organizational policies. Unit Decision Making was defined as the degree to which staff are encouraged by the nurse manager to participate in the unit decision-making process. Participation in these types of group decisions apparently is not associated with an individual's perception of control over practice to the degree that making decisions about one's own work is. Many of the concerns in an individual's clinical practice are between the nurse and the patient, and, for this reason, individual practice may be less directly influenced by the type of issues that are discussed in groups. It appears that participation in group decisions is associated with the overall work environment more than it is with the individual's freedom to practice within that environment.

An examination of the variables that had the potential to moderate the relationship between decentralization and control over practice showed none which resulted in an important difference from the total group. The failure to find differences with the subgroups may also relate to the psychometric limitations of the subscale or may have been due to chance or limited sample size.

Decentralization and Professional Development

When considering the three measures of decentralization together, decentralization of decision making was significantly and positively related to clinical nurses' perceptions of professional development. Also, each type of decision making was significantly and positively related to professional development. Professional Development was defined as the degree to which nurses are concerned about their work and committed to professional growth. In addition to statistical significance, the relationships between decentralization and professional development were important in terms of their moderate and large effects.

With regard to decentralization in the form of participation in group decisions, both types of participative decision making were associated with perceptions of professional development. The relationship between Unit Decision Making and Professional Development can be considered important due to the large effect-size. One possible explanation for these findings is that when nurses participate together in addressing issues of concern on their work unit, there is a milieu of openness and trust in which individuals feel free to ask questions and seek out answers from colleagues and through other professional development activities (Hargreaves & Dawe, 1991; Kagen, 1992). Also, problem solving around unit issues may require additional knowledge or stimulate more learning. Kram (1985) noted that peers act as mentors to each other to help solve problems.

These findings are consequential because this knowledge can assist administrators in designing structures that will foster continued learning and support

the professional development activities of staff. In the model building process, Unit Decision Making accounted for most of the variance. No significant additional variance was explained when the other independent variables were placed in the regression model. When administrators are faced with limited resources, establishing a simple unit decision making structure may be sufficient to result in enhancing perceptions of professional development. Use of this finding has the potential to prevent ineffective or costly practices from being initiated since it may not be necessary to implement complex organizational self-governance structures when the main administrative concern is the professional development of clinical nurses.

The moderate size found for the effect of Participation in Decision Making, which measured strategic decision making, on Professional Development leads one to suggest that when nurses have responsibilities for participating in decisions about resource allocation they may see a need for more professional development activities. The possibility exists that since few nurses engage in strategic decision making, there is a sense of importance attached which encourages increased professional learning activity because the individual has been singled out to participate. It is difficult to generalize from this finding, considering the limitations imposed by the reliability and validity information on the Participation in Decision Making subscale.

Decentralization in the form of authority for work decisions resulted in a moderate sized relationship with professional development. This finding provides empirical support for Althaus et al. (1981) who suggested that there was a relationship between decentralization and continued learning. Usually, increasing authority is

associated with increasing accountability. When the authority and affiliated accountability increases, it may motivate individuals to engage in professional development to acquire the knowledge to make the work decisions for which one has authority.

Four factors moderated the relationships between decentralization and professional development; the length of time a nurse was in the current position, nursing education, and the type and size of unit. Two subgroups from the variable length of time in the current position showed differences, 3-4 years and 5-10 years. When nurses have been in their position from 3 to 10 years, they are past the beginner stage of skill acquisition (Benner, 1984). In contrast to beginners who are in a very reactive stage of learning (Logan & Boss, 1993), nurses who have more experience are in a position to attend to their professional growth due to the extra time which results from their organizational skills. It appears that if these nurses are provided with authority for their work decisions and an opportunity to participate in group decisions (strategic and unit), they have increased perceptions of professional development.

The model building process showed that a model with unit decision making was most effective for the full sample, however, for administrators wishing to enhance professional development of nurses with 3-4 years experience in their current position, a structure that includes unit decision making and adds authority for work decisions may be most productive. This finding may be particularly useful in times of fiscal restraint and downsizing of organizations when nurses tend to remain in their

positions for longer periods of time.

The subgroup with a baccalaureate in nursing perceived more professional development activity than the total group when decentralization was present. This finding was consistent with Hage (1980) who posited that education affects the desire for different types of decision making. Generally, most nursing baccalaureate programs emphasize professional characteristics and the need for continued education which may account for this finding. In addition, many graduating from BScN programs are mature students including registered nurses who have returned to school for their degree. Of the BScN subgroup, 65% were in their 30's or 40's. This increased life and work experience may result in practitioners who expect more participation in decision making and who are prepared to continue learning in order to fully take advantage of decentralization.

Another moderating variable subgroup was the number of medical specialties on the unit. Units with only one medical specialty tend to be highly specialized, for example, oncology or coronary care, and the clinical specialty is often linked to opportunities for formal professional activities, such as specialty associations, meetings, and a certification process. These formal activities and the opportunity to specialize rather than attempting to master content and skills related to several patient populations may lead nurses to engage in more professional development activities in order to use their decision making authority and participation. A final variable which moderated the relationship between decentralization and professional development was unit size. Units with a sizable number of nursing staff (over 40) are essentially units

with either very sick or a large number of patients. Economic forces have reduced length of stay which in turn has increased in-patient acuity and has resulted in larger units with more diverse patient populations. Both of these factors have increased patient complexity and have increased the clinical nurses need to learn. The increased need to learn on the big units, added to the presence of decentralized unit decision making, may stimulate an increase in the degree of professional development activity perceived.

One interesting finding related to Professional Development was the lack of any variance accounted for by Work Pressure. Both the literature (Alexander, et al., 1982; Jenny, 1982; Norbeck, 1985; Scheller, 1993) and teaching experience have suggested the pressure of the work day interferes with opportunities to engage in continuing learning. It may be that the pressure from work duties, although present, was not sufficiently high to interfere with professional development. In addition, work pressure may interfere less with professional development from informal discussions with colleagues because this type of activity can be carried on while doing other tasks together, when on breaks, or during off-duty time. The subscale measured both informal and formal professional development activities.

Decentralization and Innovation Activity

All three measures of decentralization had significant and positive relationships with Innovativeness as perceived by clinical nurses. Innovativeness was defined as the degree to which variety, change, and new approaches are emphasized on the work unit. The results were not only statistically significant; they are important from a

practical perspective since they represent moderate and large effects. This finding is notable, when considering the pressing need for organizations to act in the face of continuous change. Organizations faced with continuous external environmental changes are challenged to find ways to encourage employees not only to respond to the changes, but to actively interact with the environment in the effort to achieve the organizational goals. Innovation activities to refine and extend practice are necessary for organizational survival (Drucker, 1992). Child (1973) found that centralization gave rise to conforming behaviour and the results of this study strengthen his conclusion.

Implementing changes or creating new approaches to practice are most highly associated with the participative unit decisions made by clinical nurses. The very strong association may be due to the fact that participation in unit decision making provides clinical nurses with the opportunity to contribute to discussions on problems or issues being faced in the immediate work environment. This allows for exchange of ideas and generation of solutions.

Although the degree of work pressure affected the relationship between participation in group decisions and Innovativeness, Unit Decision Making accounted for a very large additional amount of variance when placed in the model. Likely, it is prudent for administrators to consider work pressure when the need for innovative activity is high. Changes in practice take time and effort and a high degree of pressure from work is likely to interfere with opportunities to innovate since it is faster to do something in a well-known way.

While less important, participating in strategic decision making was related to perceptions of innovativeness. Perhaps when nurses are given the responsibility to be involved in decisions related to the allocation of resources, such responsibility establishes the view that change is possible.

When nurses have authority for their work decisions, they may be more likely to make changes in the way they practice as opposed to simply following routine, which may account for the result that Hierarchy of Authority was significantly related to Innovativeness with a large effect-size. When decisions have been made, there is a need to follow through with the implementation and assume responsibility for the outcomes. Such responsibility may have the potential to generate more need to change practice.

The relationship between decentralization and innovativeness was moderated by two factors. Work status and tenure in current position influenced the relationship. Nurses who worked part-time and those who had been in their position between three and four years perceived a higher degree of innovation activity with decentralized decision making than did the total sample. With part-time employment there is the possibility that an individual is less well integrated into unit activities due to the reduced amount of time spent at work. It may be that with decentralization, part-time nurses are more involved in their work and various unit issues and, therefore, perceive increased opportunity to make changes. Also, this finding possibly relates to the fact that part-time work may result in less fatigue and thus more energy to consider change. Part-time nurses may wish to be recognized as contributors to

effective service delivery and thereby earn them some sense of employment security.

A second factor that moderated the relationship between decentralization and innovation activity was tenure in the current position. Nurses with 3-4 years of experience on a unit are in a position to see more aspects of practice that they perceive require change and yet they may not be so used to the setting that things are taken for granted. Usually nurses who have been in their current position for 3-4 years have gained the knowledge and respect required to engage in innovation. Given decentralization, this group is likely to seek out opportunities to make changes.

The degree of work pressure affected the relationship between participation in group decisions and innovativeness. However, while trying to increase innovativeness, less attention to the pressure from work may be needed when considering units with only one medical specialty. For nurses from these units, work pressure did not have as large an effect on the relationships as for the total sample.

Much has been written about employee resistance to change; however, without an organizational structure that supports the change process, the innovation needed for organizational success will not become the norm (Manion, 1993). When nurses perceive that opportunities for change exist and are common practice, they may be more likely to engage in those activities. Such positive perceptions offset the notions that change is impossible. Findings from this study provide support for the idea that a decentralized organizational structure which promotes decision making at the unit level is associated with increased employee perception of innovation opportunities.

Decentralization and Peer Relationships

Two measures of decentralization of decision making were significantly and positively related to Peer Cohesion. Hierarchy of Authority and Unit Decision Making had moderate effect-size relationships with this dependent variable. Peer Cohesion was defined as the degree to which staff are friendly and supportive of each other. There are several possible explanations to account for the relationship between authority for work decisions and peer relationships. Even when nurses have authority for their own work decisions, they still remain somewhat dependent on peers to accomplish their clinical goals. This dependence may account for the relationship between authority for work decisions and peer relationships since nurses may find it necessary to collaborate in decision making and may find it easier to gain assistance implementing their work decisions when friendly supportive relationships have been established. Another interpretation is possible. Authors have noted the trying nature of nursing work (Benner, 1984; Lindsey & Attridge, 1989). With authority for decisions comes some clinical decisions relating to difficult patient situations, such as, patient suffering or dying. These decision-making situations tend to encourage peer support.

In the model building process, most of the variance was accounted for by Unit Decision Making when it was entered first into the regression model. The importance of unit decision making may be due to the possibility that participating in group decision making about issues of concern provides opportunities for nurses to support each other's ideas and to learn about each other in ways that are typically limited by the shift rotations worked.

Participation in Strategic Decisions with Peer Cohesion was a positive but not significant relationship. Participating in strategic decision making may not encourage the same type of peer support because the issues may not be seen as immediate in nature and may provoke less intense responses among the group.

Type and size of unit were the only factors to moderate the relationship between decentralization and peer relationships. Critical care units, units with one medical specialty, and units with over 40 nurses were the subgroups in which the independent variable accounted for more variance than it did in the total sample. There is considerable overlap between these types of units because many critical care units only have one medical specialty and also have a large number of staff, for example, the intensive care nursery unit or cardiac surgery unit. Critical care nurses are very dependent on each other to provide care to patients, particularly in terms of responsibility when the assigned nurse is absent from the bedside. Nurses who work in single specialty units are able to develop highly specialized knowledge. The interdependence of staff in critical care and the specialized knowledge may increase the cohesion when the group participates in decision making about unit issues or sharing of clinical information to insure continuity of care. Although unit decision making is the most important variable in model building for the total sample and for most of the subgroups, for large units with over 40 nurses, a model with both unit decision making and authority for work decisions should be considered. This type of model is likely to provide more effect when trying to enhance peer relationships on a large unit.

Summary of Findings

In summary, decentralization of decision making positively affects the perceptions of selected aspects of a professional practice environment. Within a university teaching hospital context, clinical nurses perceived a higher degree of control over practice, professional development, innovation activity, and peer relationships when they have authority for work decisions. Participation in unit decision making was related positively to perceptions of professional development, innovative activity, and peer relationships. Finally, participation in strategic decision making was associated with perceptions of professional development and innovativeness.

Note should be taken of the relative importance of the study predictors. Unit Decision Making was the most important variable when considering Professional Development, Innovativeness, and Peer Cohesion. With these dependent variables, Unit Decision Making accounted for the most variance, which was followed by Hierarchy of Authority and then Participation in Decision Making. The latter two variables failed to account for significant additional variance when added to models after Unit Decision Making. The limited impact of Participation in Decision Making may be due to the problem with reliability and validity of the subscale or it may be due to the limited opportunity for participation in resource allocation decisions by clinical nurses. This situation may be present due to a lack of interest on the part of clinical staff or it may arise because of restriction from the employee-employer contract. Hierarchy of Authority was the only independent variable associated with

Control Over Practice. Essentially the relationship was no longer significant when Work Pressure was considered. Again, this may be due to the reliability and validity problem with the measurement of Control Over Practice or there may be other unidentified variables that play a more important part in explaining the nature of control over practice as perceived by clinical nurses.

Furthermore, the findings indicate that some of the relationships may be altered based on individual and situational characteristics as well as the felt pressure from work. In a few subgroups, Hierarchy of Authority explained additional variance in the dependent variable.

Summary of Practice Implications

When considering the implications for practice, caution is urged related to the psychometric limitations imposed by the subscales for Control Over Practice and Participation in Decision Making. In addition, while findings from the analysis of individual and work characteristics suggest some practical implications, these results may be due to chance. With these considerations in mind, the study outcomes provide guidance to nurse administrators who are planning or are in the midst of organizational changes.

If the goal is to support important aspects of professionalism, given the strong relationship between some forms of decentralized decision making and the professional practice environment, establishing decentralization should prove to be very effective. For administrators who already have decided to implement decentralization, study outcomes provide support for that decision. Results of this

study provide evidence that increased professional development, innovativeness, and peer cohesion should be perceived by staff when decentralization is in place.

The relationships found in this study have not been demonstrated as causal. Decentralization may result in an enhanced professional practice environment or vice versa. However, because administrators have significant control over decisions about organizational structure, if neither decentralization nor a professional practice environment is in place, decentralizing the structure is a logical first step toward achieving a supportive environment for professional nurses. In other words, implementing decentralization is a more definitive step than trying an approach to increase professional development or innovativeness in the hope that change in these areas will increase decentralization of decision making.

The findings from the study model building guides administrators in setting priorities when planning an incremental implementation of the various aspects of decentralization. The clear finding that unit decision making is central in most of the models leads one to conclude that implementing innovative practices will be easier if the change is preceded by staff participation in unit decisions. If, for example, to increase continuity of care, a decision has been made to change to primary nursing thereby providing authority for work decisions, it should be implemented with more ease if this change follows upon implementation of some type of unit council structure designed to increase participation in decision making.

In particular, the study findings of the strong positive relationship between unit decision making and both professional development and innovativeness are of

significant importance to administrators because of the considerable challenges in health care today. Some of the major trends in health care organizations include significant restructuring to meet fiscal constraints, total quality management initiatives, and reduction in length of stay in acute care institutions. These trends give rise to the need to stimulate continuous learning and abilities to change. Results of this study provide evidence that implementing some type of unit decision making structure should support these needs for learning and innovating.

The findings related to the individual and situational moderating variables permit administrators to plan implementation strategies with increased precision. It is judicious to assess specifically what types of decisions staff wish to make before implementing structural change. Taking time to learn as much as possible about what types of decisions nurses want to make and which nurses want to make them is prudent. Experienced career minded nurses likely have different interests than beginners or those who have a lower commitment to nursing for whatever reason. Establishing the types of decisions various groups want to make will prevent administrators from trying to implement a decentralized structure beyond the interests or abilities of staff. A decision making structure that is tailored to the needs of the majority of nurses in various groups will meet with less resistance during the implementation period.

When selecting areas to pilot decentralization, use of the moderating variable findings should augment chances of a positive result. For example, beginning with a unit with a single medical specialty or units on which the majority of nurses have

three to four years experience should achieve a more obvious result when decentralization is implemented because these two subgroups account for more variance in several aspects of the professional practice environment. Careful selection of units should ease the implementation process and reduce the stress associated with the first wave of a change.

A final implication from the results is related to work pressure. It can be interpreted from the results of this study that administrators need to be mindful of the effect of work pressure on nurses' perception of control over practice and innovation activity. Nurses' perceptions of the degree of pressure from their work plays a role in their perceptions of control over practice and innovativeness. If nurses are to feel in control of their professional work and able to make changes, administrators must determine the optimal workload. Once found, the workload should be altered appropriately by increasing it during times of stability and decreasing it during periods of extensive unit change.

Implications for Research and Theory

The study results help provide an answer to the research question posed about the nature of the relationship between decentralized decision making and selected aspects of a professional practice environment. This is important because when the organizational environment is precisely defined, a more accurate understanding of behaviour in organizations is possible (Child, 1973).

Nursing Administration Research and Theory

Although a contribution to knowledge on the study topic has been achieved, no conclusions regarding cause and effect relationships can be made. Research, using experimental designs, is needed to provide evidence of causality among these relationships. Experimental research of this type is particularly difficult to undertake in hospital settings. The rate of change on the clinical units makes it unlikely that experimental or control units would remain unchanged for a sufficient period of time to implement a decentralized decision making structure and examine the effects over time. Given the difficulty of conducting experimental trials on this topic, implementation research and program evaluation are critical. Barriers to implementation of decentralization have been noted (Ringerman, 1993). Some members of both the clinical and managerial groups may not accept the shift of decision-making responsibility that occurs when changing from a highly centralized structure. This will necessitate learning new skills and attitudes. Many questions remain concerning the learning and other preparation required for clinical staff to equip them for the shift in responsibility of decision making. Research is needed on the most effective approaches to education for decentralization. Qualitative studies may be useful to describe the experience of learning to work within a decentralized environment and learning to exercise more professional behaviours. In future research, investigations should be conducted over time because the single point in time captured by the questionnaire used in this correlational design may reflect perceptions swayed by temporary situations and the immediacy of various difficulties.

Also, studies are needed on selection of staff who are willing and able to make sound decisions.

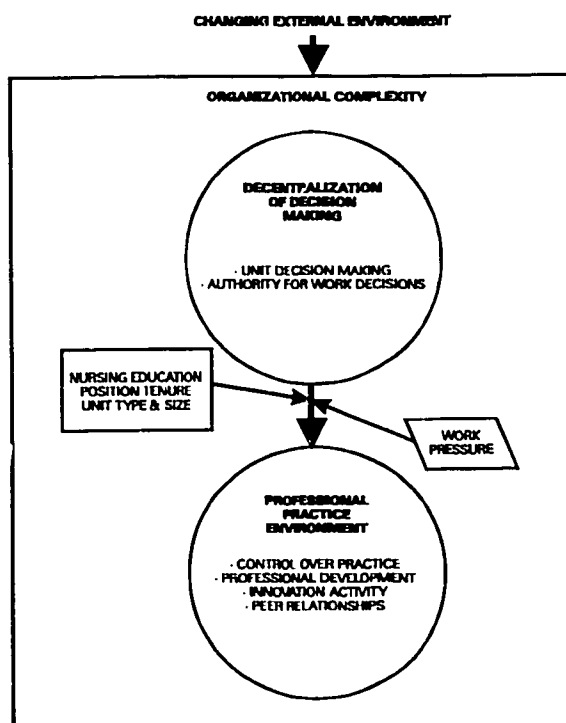
The study should be replicated in other settings where different contextual factors may exist since the lack of diversity within the study institution used is a limitation that affects the ability to generalize from the findings. As well, studies are needed to compare nurses' perceptions of the situation with objective measures to test the reality of perceptions, for example, perceptions of work pressure compared to data from a work-load measurement tool or perceptions of professional development compared to documented involvement in educational activities.

Administrative theory within nursing is limited at this time and the conclusions from this inquiry contribute to its development. Nursing studies on decentralization have focused primarily at the nurse manager level (Di Angi, 1989; Przestrzelski, 1987; Ringerman, 1990; Synowicz, 1987) and on job retention or job satisfaction as outcomes (Jones, 1993; Ringerman, 1990; Shoemaker & El-Ahraf, 1983). Findings from this study on professional practice environment add to the missing link between decentralized decision making and organizational outcomes. Although Ringerman (1990) examined the relationship between decentralization and professional practice climate for nurse managers, this study adds knowledge on the relationship between the two variables for the clinical staff level. Unlike the clinical nurse sample used by Barhyte et al. (1987) in which 80 percent of participants had a nursing baccalaureate or higher, this study provides information about a more typical sample of nurses (only 17 percent had a nursing degree) who work in university teaching hospitals.

Based on the model building process and research findings, a modification to the conceptual framework presented in Figure 1 is suggested (Figure 2). When operationalizing decentralization, participation in decision making may be simplified to include only participation in unit decisions. Until further work is undertaken to examine the need for participation in strategic decisions at the clinical level, it may be prudent to eliminate this variable.

Figure 2

Modified Conceptual Framework



Participation in strategic decisions may be appropriate to settings with a large proportion of very senior staff or with lengthy decentralization experience which is in need of extension.

Several of the individual and situational variables may be eliminated without loss of important content. Age and Tenure as a Nurse may be less important variables than Nursing Education and Tenure in Current Position. Probably gender is not a fruitful variable, since the number of male nurses continues to be too small to provide generalizable findings. The type and size of the unit appear to be useful variables which have potential to moderate the relationship between decentralization and aspects of the professional practice environment.

Three potential model subsets are possible depending on what aspect of the professional practice environment is most important from the administrative or research perspective.

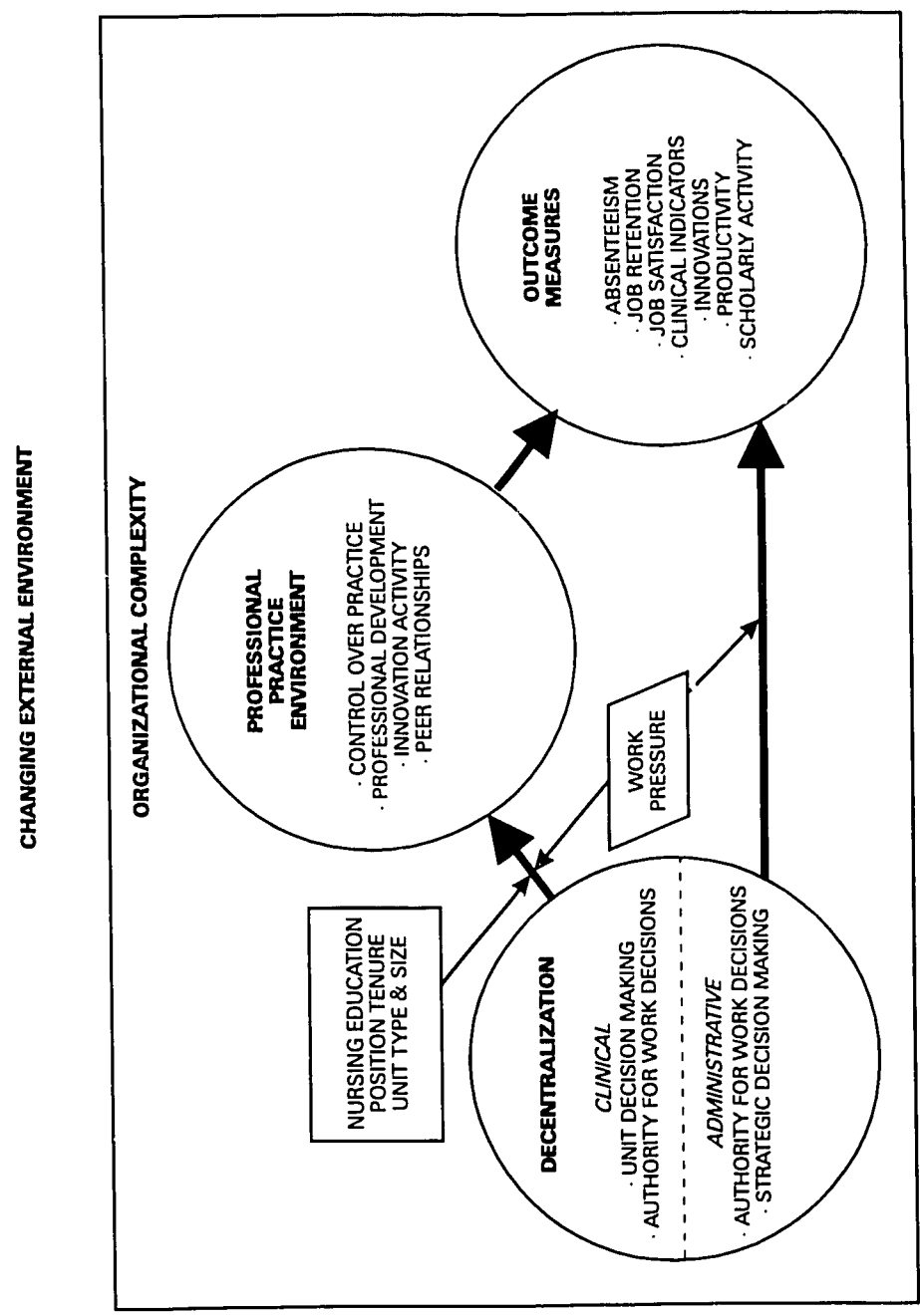
1) When concerned with control over practice, the best model may include only authority for work decisions as the decentralization variable. This model is dependent on the development of an improved measure for control over practice. Including a variable to measure the felt pressure from work appears to be useful when examining control over practice.

2) When considering professional development, innovativeness, and peer relationships, the model need only include unit decision making to represent decentralization. Work pressure is an appropriate concern when examining innovation activity.

3) The final model may be most useful in the presence of one or more of the following; staff with nursing baccalaureates, 3-4 years experience in their current position, and large units. This model consists of variables for unit decision making participation and adds authority for work decisions when considering control over practice, professional development, innovation activity, and peer relationships. The various models could be more functional when one or more outcome variables are added. Suggested outcomes to examine are job absenteeism, satisfaction, and retention, number and types of innovations, work productivity, clinical effectiveness indicators, and scholarly activities by staff.

A conceptual framework to direct future research is proposed (Figure 3). The Changing External Environment and the associated Organizational Complexity have been described in Chapter III and those relationships remain as described. The Decentralized Decision Making circle has been divided in two, half for clinical and half for administrative staff. Examination of the administrative group at the same time as the clinical group permits comparison and better interpretation. In the presence of a decentralized organizational structure, a lack of decisional participation and authority may arise from administrative behaviours at the unit level or at a higher level in the organization. Within the clinical half circle is participation in unit decision making and authority for work decisions. Based on findings from this study, the strategic decisions have been left out of the clinical section. The administrative portion of the circle includes authority for work decisions and participation in strategic decision making.

Figure 3
Proposed Conceptual Framework for Future Research



The work decisions for which nurse administrators have authority include activities such as staffing, budgeting, and standard setting related to their own units. It seems reasonable to include participation in strategic decision making for the managerial group since these nurses are in possession of a broader view of the organizational enterprise than the clinical staff who give the patient care.

The Professional Practice Environment remains as described in Chapter III. As members of the nursing discipline, nurse administrators have the same general professional responsibilities as the clinical staff and, in addition, have administrative obligations. Given that nurse administrators also can have their practice constrained by their environment, the selected aspects of professionalism are suitable for administrators as well as for clinical staff.

The relationship between Decentralized Decision Making and the Professional Practice Environment for clinical nurses may be moderated by Nursing Education, Work Status, Tenure in Current Position, Number and Type of Medical Specialties, and Unit Size. Synowiez (1987) found that nurse managers increased their sense of autonomy with increased educational preparation. Ringerman (1990) noted that tenure as a nurse manager in the current organization was the only tenure variable to show a significant difference. Her measurement of education compared Masters in Nursing with Masters in Health Administration degrees which showed no significant difference. However, Canadian hospitals have only a small number of first-line nurse administrators prepared at the Masters level. Thus, it seems prudent to consider education as a possible moderating variable for this group.

The Outcome Measures portion of the model includes several different types of possible effects. Job absenteeism, retention and satisfaction (Barhyte, et al. 1987; Jones, 1993; Ringerman, 1990; Shoemaker & El-Ahraf, 1983) are useful human resource issues which have significant economic impact. Clinical indicators are necessary to determine the effectiveness of nursing actions (Hegyvary, 1992). The effects of decentralization and enhanced professional practice environments on patient outcomes require study since very little evidence exists on these relationships. Hage (1965) noted the need for innovativeness and productivity outcome measures. Productivity is also a central concern of nurse administrators. With a suitable practice environment that supports professionalism, the number of scholarly activities, such as, research, presentations, and publications, should increase. This type of activity is of particular importance in university teaching hospitals which have research and education as part of the organization's mission. In Figure 3, the arrows join the Decentralized Decision Making circle directly to the Outcome Measures circle and indirectly to it through the Professional Practice Environment circle. With appropriate research methodology, the direct and indirect effects may be determined.

Work Pressure is an extraneous variable that should be controlled for both the clinical and managerial groups. It can be posited that probably it plays a role in both direct and indirect ways on the relationships in the model. Hence, the arrows join Work Pressure to both the arrows leading from Decentralized Decision Making to Professional Practice Environment and to Outcome Measures.

In organizations dependent on professionals, knowledge provided by this study and future research should assist investigators and administrators interested in the link between decentralization and professional practice environment as a means to improving important organizational outcomes.

Organizational Research and Theory

In addition to supplementing nursing administration theory, a contribution to the theory and research on organizational structure has been made. Specifically, this inquiry furnishes an extension to understanding decentralization within a complex organization. The university teaching hospital is one example of a complex organization (Zuckerman et al., 1990). Complex organizations are associated with decentralization (See for example, Hage & Aiken 1967a; Glisson, 1978; Pugh et al., 1968a, 1968b). In contrast to Hage (1965), who implied that professionals behave in similar ways regardless of the type of organization, Holdaway et al. (1975) suggested that measures of centralization varied across widely diverse organizations. This study provides evidence to support the latter conclusion. The various types of decentralized decision making, the two components of participative decision making and the authority for work decisions, were associated with different aspects of professionalism as perceived by clinical nurses. For example, a significant finding of this examination was the important relationship of participating in unit decisions and perceptions of Professional Development, Innovativeness, and, to a lesser extent, Peer Cohesion; also notable was the lack of a significant relationship between participative decision making and Control Over Practice. Only decentralization in the form of authority for

work decisions was significantly related to Control Over Practice. These conclusions also add support to those researchers and theorists who suggested that the type of decision making makes a difference (Conway, 1976; Dwyer, et al., 1992; Grinyer & Yasai-Ardekani, 1980; Hage, 1980). More inquiry is needed to understand the types of decisions that staff wish to make and what decisions are appropriate for individuals at different organizational levels. Investigation to create reliable and valid instruments to measure the effects of different types of decision making and the factors moderating them are needed.

Organizational research has linked decentralization to other structural elements (Hage, 1965; Hage & Aiken, 1967a, 1967b; Pugh et al., 1968a, 1968b), contextual factors (Hage & Aiken, 1969; Mansfield, 1973; Pugh et al., 1968a, 1968b, 1969), organizational processes (Child, 1973; Hage & Aiken, 1967a), and outcomes (Child, 1973; Conway, 1976; Hage & Aiken, 1967b). Hage's (1965) Axiomatic Theory of Organizations, which is one of the explicit theoretical formulations on the topic, did not address the internal environment of the organization. The lack of empirical attention to the practice environment made it difficult to draw definitive conclusions about the relationship of structure to outcomes. Hall (1968) and Synowicz (1987) examined attitudes toward professionalism in the context of organizational structure. Generally a negative relationship was found to exist between centralization and professionalization (Blau et al., 1966; Hall, 1968; Synowicz, 1987). The positive relationship between decentralization and aspects of professional practice environment lends support to these findings, even though different characteristics of

professionalism were measured. The focus of this inquiry was on those aspects of professionalism that are useful for administrators with responsibility for organizational effectiveness. There exist in the literature many different lists of professional characteristics (Benveniste, 1987; Darling-Hammond, 1989, Greenwood, 1966; Hall, 1968; Sovie, 1983). The contribution to theory made by this inquiry includes a beginning set of those aspects of a professional practice environment of particular interest to administrators. While Goode (1969) noted that specialized knowledge was one of two main attributes of professionalism, the interest has been in the type and length of formal education programs. These are of less interest to an administrator whose concern lies with the continued professional learning necessary to keep up with, and make changes.

In this study several subscales from the Professional Practice Environment Scale were demonstrated to be useful in the measurement of some aspects of professionalism important from an administrative point of view. This provides a starting point to develop valid and reliable instruments to measure the total professional practice environment. Although the subscale Control Over Practice had suitable reliability and validity when used with a teacher sample, the results in this study were disappointing. There is a need to develop methods and instruments to study nurses' control over their practice, taking into consideration the particular circumstances of their shared responsibility for patient care. While results showed that unit decision making is a strong predictor of professional development and innovativeness, the amount of unexplained variance, especially with peer

relationships, requires additional examination to identify variables of significance which may add knowledge about these important professional topics. While findings from this investigation answer some questions about the importance of peer relationships among staff in a university teaching hospital setting, questions remain about the high interrelationships among peer relationships, professional development, and innovativeness in a nursing context as well as in other professional organizations. Sergiovanni (1992) noted the value of teacher collegiality in promoting better working conditions, improving practice, and getting better results. Research is required to determine if other dimensions of these constructs exist, and to identify other themes or factors which may represent professional nursing practice within an organizational context.

Conclusion

Given the predictions of significant change that will occur in patient populations, nursing practice, and sites of care, organizations must establish structures that encourage professional staff to innovate. Boyle, Engelking, and Harvey (1994) predict a patient/family profile characterized by individuals of advanced age and diverse ethnic backgrounds, persons living in poverty, and by those who wish a greater role in health care related decision making. Also it has been proposed that three needs will be served by hospitals in the future: major operating room procedures, critical care, and emergency/trauma treatment (Billie & Wright, 1987; Goldsmith, 1989). University teaching hospitals will undergo enormous transformation as some or all of these projections come to be. The strong relationship between unit decision making and innovation activity found in this study would suggest that

decentralizing decisions may be conducive to supporting professionals in their efforts to make changes. Future research is essential to extend the knowledge generated from this study by identifying the most effective structures to increase participation in decision making and examining types of innovation activities and their relationship to outcomes.

This study provides an answer to the research question about the nature of the relationship of decentralization to professional practice environment. Decentralization appears to be essential for a rapid organizational response to a complex environment and, as such, it requires further study to analyze its effects on various processes and outcomes that are important to organizational success and survival. Several models and a conceptual framework for future research have been proposed. Some information which is necessary to proceed with studies on the effect of a professional practice environment on organizational effectiveness and efficiency is proposed. Finally, the findings provide administrators with knowledge to guide their activities to ensure a suitable response to increased organizational complexity and the rapidly changing environment. The results will enable administrators to assess the need for other structural or system changes that may be necessary in order to take full advantage of decentralization as a means to increase the speed and quality of the organizational response to change.

REFERENCES

- Alexander, C. S., Weisman, C. S., & Chase, G. A. (1982). Determinants of staff nurses' perceptions of autonomy within different clinical contexts. Nursing Research, 31, 48-52.
- Althaus, J. N., Hardyck, N. M., Pierce, B. P., & Rodgers, M. S. (1981). Nursing decentralization: The El Camino experience. Rockville, MD: Aspen.
- Apple, W. W. (1986). Are teachers losing control of their skills and curriculum? Journal of Curriculum Studies, 18, 177-184.
- Attridge C., & Callahan, M. (1990). Nurses' perspectives of quality work environments. Canadian Journal Nursing Administration, 3(3), 18-24.
- Attridge, C., & Callahan, M. (1989). Women in women's work: Nurses, stress and power. Recent Advances in Nursing 25, 41-69.
- Babbie, E. R. (1986). The practice of social research (4th ed.). Belmont, CA: Wadsworth.
- Barhyte, D. Y., Counte, M. D., & Christman, L. P. (1987). The effects of decentralization on nurses' job attendance behaviours. Nursing Administration Quarterly, 11(4), 37-46.
- Barnes, L. W. C. S. (1975). The changing stance of the professional employee. Kingston, Ontario: Industrial Relations Centre.
- Bentler, P. M. & Bonnet, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. Psychological Bulletin, 88, 588-606.
- Blegen, M. A. (1993). Nurses' job satisfaction: A meta-analysis of related variables. Nursing Research, 42, 36-41.
- Beletz, E. E. (1990). Professionalization - A license is not enough. In N. L. Chaska (Ed.), The nursing profession: Turning points (pp. 49-52). St Louis: Mosby.
- Bennis, W. G. (1966). Changing organizations. New York: McGraw-Hill.
- Benner, P. (1984). From novice to expert: Excellence and power in clinical nursing practice. Menlo Park, CA: Addison-Wesley.

- Benveniste, G. (1987). Professionalizing the organization: Reducing bureaucracy to enhance effectiveness. San Francisco: Jossey-Bass.
- Billie, D. A., & Wright, J. E. (1987). Professional nurses in the year 2000: Committed, conscious colleagues. Nursing Administration Quarterly, 11(2), 13-16.
- Blau, P. M., Hydebrand, W. V., & Stauffer, R. E. (1966). The structure of small bureaucracies. American Sociological Review, 31, 179-191.
- Bollen, K. A. (1990). Overall fit in covariance structural models: Two types of sample size effects. Psychological Bulletin, 107, 256-259.
- Bollen, K. A. (1989). Structural equations with latent variables. New York: Wiley.
- Bolman, L. G., & Deal, T. E. (1991). Reframing organizations: Artistry, choice, and leadership. San Francisco: Jossey-Bass.
- Boyle, D. M., Engelking, C., & Harvey, C. (1994). Making a difference in the 21st century: Are oncology nurses ready? Oncology Nurses Forum, 21, 53-55.
- Brown, N. J. (1989). The relative contribution of organizational climate, supervisory leadership, and peer leadership to job satisfaction, performance, and retention. Unpublished doctoral dissertation, University of Denver, Colorado. (University Microfilms No. 9004056)
- Canadian Nurses Association. (1992). Highlights of 1991 nursing statistics. Ottawa: CNA.
- Caldwell, T., & Weiner, M. F. (1981). Stresses and coping in ICU nursing: A review. General Hospital Psychiatry, 3, 119.
- Calkin, J. D. (1984). A model for advanced nursing practice. Journal of Nursing Administration, 14(1), 24-30.
- Cervero, R. M. (1985). Continuing professional education and behavioral change: A model for research and evaluation. Journal of Continuing Education in Nursing, 16, 85-88.
- Child, J. (1972). Organization structure and strategies of control: A replication of the Aston studies. Administrative Science Quarterly, 17, 163-177.

- Child, J. (1973). Strategies of control and organizational behaviour. Administrative Science Quarterly, 18, 1-17.
- Clifford, J. (1990). Professionalising a nursing service: An integrated approach for the management of patient care. In J. C. Clifford & K. J. Horvath (Eds.), Advancing professional nursing practice (pp. 30-50). New York: Springer.
- Cohen, J. (1992). A power primer. Psychological Bulletin, 112, 155-159.
- Conway, J. A. (1976). Test of linearity between teachers' participation in decision making and their perceptions of their schools as organizations. Administrative Science Quarterly, 21, 130-139.
- Corley, M. G., Selig, P., & Ferguson, C. (1993). Critical care nurse participation in ethical and work decisions. Critical Care Nurse, 13, 120-128.
- Corwin, R. G. (1965). Professional persons in public organizations. Education Administration Quarterly, 1(3), 1-22.
- Corwin, R. G. (1961). The professional employee: A study of conflict in nursing roles. American Journal of Sociology, 66, 604-615.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. Psychometrika, 16, 297-334.
- Cudeck, R., & Browne, M. W. (1983). Cross-validation of covariance structures. Multivariate Behavioral Research, 18, 147-167.
- Darling-Hammond, L. (1989). Accountability for professional practice. Teachers College Record, 91(1), 59-80.
- Darlington, R. B. (1990). Regression and Linear Models. New York: McGraw-Hill.
- Deane, R. (1991). Autonomy and governance. In S. A. Ziebarth (Ed.), Feeling the squeeze: Middle management in Canadian health care facilities (pp. 6-9). Ottawa: Canadian Hospital Association.
- Deer, C. E. (1980). Measuring organizational climate in secondary schools. The Australian Journal of Education, 24(1), 26-43.
- Dewar, R. D., Whetten, D. A., & Boje, D. (1980). An examination of the reliability and validity of Aiken and Hage scales of centralization, formalization, and task routineness. Administrative Science Quarterly, 25, 120-127.

- Di Angi, P. R. (1989). Nursing decentralization: A contingency model of assessment. Unpublished doctoral dissertation, Case Western Reserve University, Cleveland. (University Microfilms No. 9002686)
- Donaldson, L., Child, J., & Aldrich, H. (1975). The Aston Findings on Centralization: Further Discussion. Administrative Science Quarterly, 20, 453-460.
- Drucker, P. F. (1992). The new society of organizations. Harvard Business Review, 70(5), 95-104.
- Drucker, P. F. (1988). The coming of the new organization. Harvard Business Review, 66(1), 45-53.
- Dwyer, D. J., Schwartz, R. H., & Fox, M. L. (1992). Decision-making autonomy in nursing. Journal of Nursing Administration. 22(2), 17-23.
- Etzioni, A. (1969). The Semi-Professions and Their Organization. New York: The Free Press.
- Fowler, F. J., Jr. (1985). Survey research methods. Beverly-Hills, CA: Sage.
- Forsyth, P. B., & Daniesiewicz, T. J. (1985). Toward a theory of professionalization. Work and Occupations. 12(1), 59-76.
- Fraenkel J., & Wallen, N. (1990). How to design and evaluate research. Toronto: McGraw-Hill.
- Gersick, C. J. G. (1991). Revolutionary change theories: A multilevel exploration of the punctuated equilibrium paradigm. Academy of Management Review, 16(1), 10-36.
- Ghiselli, E. E., Campbell, J. P., & Zedeck, S. (1981). Measurement theory for the behavioral sciences. San Francisco: W. H. Freeman.
- Giddings, G. J., & Dellar, G. B. (1990). The development and use of an instrument for assessing the organizational climate of schools. Paper presented at the Annual Meeting of the American Educational Research Association (AERA), Boston, MA, April 15-20.
- Glisson, C. A. (1978). Dependence of technological routinization on structural variables in human service organizations. Administrative Science Quarterly, 23, 383-395.

- Goldsmith, J. (1989). A radical prescription for hospitals. Harvard Business Review, 89(3), 104-111.
- Good, L. R., & Nelson, D. (1973). Effect of person-group and intragroup attitude similarity of perceived group attractiveness and cohesiveness. Psychological Report, 33, 551-560.
- Goode, W. J. (1969). The theoretical limits of professionalization. In A. Etzioni (Ed.), The semi-professions and their organization (pp. 266-313). New York: The Free Press.
- Goodman, P. S., & Pennings, J. M. (1977). Perspectives and issues: An introduction. In P. S. Goodman & J. M. Pennings (Eds.), New perspectives on organizational effectiveness (pp. 1-12). San Francisco: Jossey-Bass
- Gott, M., & O'Brien, B. (1990). The role of the nurse in health promotion: Policies, perspectives and practice. Department of Health and Social Welfare, The Open University: Milton Keynes.
- Gouldner, F. H., & Ritti, R. R. (1967). Professionalization as Career Immobility. American Journal of Sociology, 72, 489-502.
- Grabowski, S. (1983). How educators and trainers can ensure on-the-job performance. New Directions for continuing education: Strengthening connections between education and performance, No. 18. San Francisco: Jossey-Bass.
- Greco, R. B. (1992). From the classroom to the corner office. Harvard Business Review, 70(5), 54-63.
- Greenwood, D. (1957). Attributes of a profession. Social Work, 2(2), 44-55.
- Greenwood, D. (1966). The elements of professionalization. In H. Vollmer, & D. Mills (Eds.), Professionalization (pp. 9-19). Englewood Cliffs, NJ: Prentice Hall.
- Grinyer, P. H., & Yasai-Ardekani, M. (1980). Dimensions of organizational structure: A critical replication. Academy of Management Journal, 23, 405-421.
- Hage, J. (1965). An axiomatic theory of organizations. Administrative Science Quarterly, 10, 289-320.
- Hage, J. (1980). Theories of organizations: Form, process, and transformation. New York: Wiley.

- Hage, J., & Aiken, M. (1967a). Relationship of centralization to other structural properties. Administrative Science Quarterly, 12, 72-92.
- Hage J., & Aiken M. (1967b). Program change and organizational properties. American Journal of Sociology, 72, 503-519.
- Hage, J., & Aiken, M. (1969). Routine technology, social structure, and organizational goals. Administrative Science Quarterly, 14, 366-376.
- Hage, J., Aiken, M., & Marrett, C. B. (1971). Organization structure and communications. American Sociological Review, 36, 860-871.
- Hage, J., & Dewar, R. (1973). Elite values versus organizational structure in predicting innovation. Administrative Science Quarterly, 18, 279-290.
- Hagerty, B. M. K. (1992). Development of the applied liberal education competencies scale. Nursing Research, 41, 132-137.
- Hall, R. H. (1968). Professionalization and bureaucratization. American Sociological Review, 3, 92-104.
- Hall, R. H. (1986). Organizations: Structure and process (4th ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Hargreaves, A., & Dawe, R. (1991). Paths of professional development: Contrived collegiality, collaborative culture, and the case of peer coaching. Teaching and Teacher Education, 6, 227-241.
- Haverman, H. A. (1992). Between a rock and a hard place? Organizational change and performance under conditions of fundamental environmental transformation. Administrative Science Quarterly, 37, 48-75.
- Henderson, H. V., & Velleman, P. F. (1981). Building multiple regression models interactively. Biometrics, 37, 391-411.
- Hegyvary, S. T. (1992). Outcomes research: Integrating nursing practice into the world view. Patient Outcomes Research: Examining the Effectiveness of Nursing Practice, Proceedings of the State of the Science Conference sponsored by the National Center for Nursing Research, September 11-13, 1991. Public Health Service, NIH Publication No. 93-3411.
- Hoelter, J. W. (1983). The analysis of covariance structures: Goodness-of-fit indices. Sociological Methods & Research, 11, 325-344.

- Holdaway, E. A., Newberry, J. F., Hickson, D. J., & Heron, R. P. (1975). Dimensions of organization in complex societies: The education sector. Administrative Science Quarterly, 20, 30-58.
- Houle, C. O. (1980). Continuing learning in the professions. San Francisco: Jossey-Bass.
- Huberty, C. J. (1989). Problems with stepwise methods - better alternatives. Advances in Social Science Methodology, 1, 43-70.
- Hughes, M. G. (1990). Educational administration: International trends and issues. The Canadian Administrator, 30(2), 1-8.
- Jenny, J. L. (1982). Issues affecting nurses' hospital employment: A discussion paper. Toronto: Canadian Hospital Association.
- Johns, C. (1990). Autonomy of primary nurses: The need to both facilitate and limit autonomy in practice. Journal of Advanced Nursing, 15, 886-894.
- Jones, C. B., Stasiowski, S., Simons, B. J., Boyd, N. J., & Lucas, M. D. (1993). Shared governance and the nursing practice environment. Nursing Economics, 11, 208-214.
- Kagan, D. M. (1992). Professional growth among preservice and beginning teachers. Review of Educational Research, 62, 129-169.
- Kram, K. E., & Isabella, L. A. (1985). Mentoring alternatives: The role of peer relationships in career development. Academy of Management Journal, 28, 110-132.
- Kramer, M., & Schmalenberg, C. (1988a). Magnet hospitals: Part 1, Institutions of Excellence. Journal of Nursing Administration, 18(1), 13-24.
- Kramer, M., & Schmalenberg, C. (1988b). Magnet hospitals: Part 2, Institutions of Excellence. Journal of Nursing Administration, 18(2), 11-19.
- Lewis, F. M., & Batey, M. V. (1982). Clarifying autonomy and accountability in nursing service: Part 2. Journal of Nursing Administration, 12(10), 10-15.
- Lindsey, E., & Attridge, C. (1989). Staff nurses' perceptions of support in an acute care workplace. Canadian Journal of Nursing Research, 21(2), 15-25.
- Logan, J., & Boss, M. (1993). Staff nurse learning patterns. The Canadian Nurse, 89(1), 18-22.

- Lowe, S., & Northcott, H. C. (1986). Under pressure: A study of job stress. Toronto: Garamond.
- Manion, J. (1993). Chaos or transformation? Managing innovation. Journal of Nursing Administration, 5(5), 41-48.
- Mansfield, R. (1973). Bureaucracy and centralization: An examination of organizational structure. Administrative Science Quarterly, 18, 477-488.
- Manthey, M. (1980). The practice of primary nursing. Boston: Blackwell Scientific.
- Marsh, H. W., Balla, J. R., & McDonald, R. P. (1988). Goodness-of-fit indexes in confirmatory factor analysis: The effect of sample size. Psychological Bulletin, 101, 391-410.
- McCloskey, J. C., & Grace, H. K. (1990). Defining and refining nursing knowledge. In J. C. McCloskey & H. K. Grace (Eds.), Current issues in nursing (3rd ed.) (pp. 42-44). St Louis: Mosby.
- McClure, M. L., Poulin, M. A., Sovie, M. D., & Wandelt, M. A. (1983). Magnet hospitals: Attraction and retention of professional nurses. Kansas City: American Nurses' Association.
- Meltz, N. M. (Ed.), (1988). The shortage of registered nurses. Toronto: Registered Nurses' Association of Ontario.
- Miller, M. E. B. (1986). Factors influencing nursing care delivery system effectiveness in acute care hospitals. Unpublished doctoral dissertation, University of Colorado, Colorado. (University Microfilms No. 8624185)
- Moloney, M. M. (1986). Professionalization of nursing. Philadelphia: Lippincott.
- Monnig, G. (1978). Professionalism of nurses and physicians. In N. Chaska (Ed.), The nursing profession: Views through the mist (pp. 25-35). New York: McGraw-Hill.
- Moos, R. H. (1979). Evaluating educational environments: Procedures, measures, findings and policy implications. San Francisco: Jossey-Bass.
- Moos, R. H. (1974a). The social climate scales: An overview. Palo Alto, CA: Consulting Psychologist Press.
- Moos, R. H. (1974b). Health and social environments. Lexington, MA: D. C. Heath.

- Moore, W. E. (1970). The professions: Roles and rules. New York: Russell Sage.
- Mulaik, S. A., James, L. R., Van Alstine, J., Bennett, N., Lind, S., & Stillwell, C. D. (1989). An evaluation of goodness of fit indices for structural equation models. Psychological Bulletin, 105, 430-455.
- Muller, C. W., & McClosky, J. C. (1990). Nurses' job satisfaction: A proposed measure. Nursing Research, 39, 113-117.
- Norbeck, J. S. (1985). Coping with stress in critical care nursing: Research findings. Focus On Critical Care, 12(5), 36-39.
- Nunnally, J. C. (1978). Psychometric theory (2nd ed.). New York: McGraw-Hill.
- Pedhazur, E. J. (1982). Multiple regression in behavioral research (2nd ed.). New York: Holt, Rinehart, & Winston.
- Pedhazur, E. J., & Schmelkin, L. P. (1991). Measurement, design, and analysis: An integrated approach. Hillsdale, NJ: Lawrence Erlbaum.
- Pennings, J. M. (1992). Structural contingency theory: A reappraisal. Research in Organizational Behaviour, 14, 267-309.
- Perrow, C. W. (1967). A framework for the comparative analysis of organizations. American Sociological Review, 32, 194-208.
- Porter-O'Grady, T. (1991). Shared governance for nursing, Part I: Creating the new organization. AORN Journal, 54, 458-466.
- Power, D. J. (1988). Anticipating organizational structures. In J. Hage (Ed.), Futures of organizations (pp. 67-79). Lexington, MA: Lexington Books.
- Przestrzelski, D. (1987). Decentralization: Are nurses satisfied? Journal of Nursing Administration, 17(11), 23-28.
- Pugh, D. S., Hickson, D. J., Hinings, C. R., & Turner, C. (1968a). Dimensions of organizational structure. Administrative Science Quarterly, 13, 65-105.
- Pugh, D. S., Hickson, D. J., Hinings, C. R., & Turner, C. (1968b). The context of organizational structures. Administrative Science Quarterly, 14, 91-114.
- Pugh, D. S., Hickson, D. J., & Hinings, C. R. (1969). An empirical taxonomy of structures of work organizations. Administrative Science Quarterly, 14, 115-125.

- Rajkumar, I. (1990). Health care white paper. Health Care, 32(2), 12-21.
- Rentoul, A. J., & Fraser, B. J. (1983). Development of a school-level environment questionnaire. The Journal of Educational Administration, 21(1) 21-39.
- Ringerman, E. S. (1990). Characteristics associated with decentralization experienced by nurse managers. Western Journal of Nursing Research, 12, 336-346.
- Ringerman, E. (1993). Decentralization and the nurse educator, research, responsibilities, and barriers. Journal of Nursing Staff Development, 9(1), 20-23.
- Rodney, P., & Starzomski, R. (1993). Constraints on the moral agency of nurses. Canadian Nurse Journal, 89(9), 23-26.
- Rostowsky, R. D. (1980). Beneficial by-products of decentralization. Hospital Topics, 58(1), 6-8.
- Schattschneider, H. (1992). Ethics for the nineties. The Canadian Nurse, 88(10), 16-18.
- Scheller, M. K. S. (1993). A qualitative analysis of factors in the work environment that influence nurses' use of knowledge gained from CE programs. Journal of Continuing Education in Nursing, 24, 114-122.
- Scott, W. R. (1979). Professionals in hospitals: Technology and the organization of work. In B. Georgopolous (Ed.), Organizational research in health institutions (pp. 59-71). Ann Arbor: Institute of Social Research.
- Sergiovanni, T. J. (1992). Moral leadership: Getting to the heart of school improvement, San Francisco: Jossey-Bass.
- Sergiovanni, T. J. (1992). Moral authority and the regeneration of supervision. In C. D. Glickman (Ed.), Supervision in transition (pp. 203-214). Washington, DC: ASCD.
- Shoemaker, H., & El-Ahraf, A. (1983). Decentralization of nursing service management and its impact on job satisfaction. Nursing Administration Quarterly, 7, 69-75.
- Simpson, R. L., & Simpson I. H. (1969). Women and bureaucracy in the semi-professions. In A. Etzioni (Ed.), The semi-professions and their organization (pp. 192-265). New York: The Free Press.

- Slater, P., & Bennis, W. (1990). Democracy is inevitable. Harvard Business Review, 68, 167-176.
- Sovie, M. (1983). Fostering professional nursing careers in hospitals: the role of staff development. Part 2. Journal of Nursing Administration, 13(1), 30-33.
- Stevens, J. (1986). Applied multivariate statistics for the social sciences. Hillsdale, NJ: Lawrence Erlbaum.
- Synowicz, B. B. (1987). The relationship of educational preparation, management experience, and organizational structure to nurse managers attitudes toward professionalism. Unpublished doctoral dissertation, University of Pennsylvania, Pennsylvania. (University Microfilms No. 8804968.)
- Tatsuoka, M. M. (1982). Statistical methods. In H. E. Mitzel (Ed.), Encyclopedia of educational research (pp. 1780-1808). New York: Free Press.
- Thompson, J. D. (1967). Organizations in action. New York: McGraw-Hill.
- Thompson, J. E. (1990). Conflicting loyalties of nurses working in bureaucratic settings. In J. E. Thompson & H. O. Thompson (Eds.), Professional ethics in nursing (pp. 57-68). Malabar, FLA: Robert E. Krieger.
- Torres, D. L. (1988). Professionalism, variation, and organizational survival. American Sociological Review, 53, 380-394.
- Tregunna, K. (1991). Preparing for the future. In S. A. Ziebarth (Ed.), Feeling the squeeze: Middle management in Canadian health care facilities (pp. 371-379). Ottawa: Canadian Hospital Association.
- Valentine, K. (1992). Strategic planning for professional practice. Journal of Nursing Care Quality, 6(3), 1-12.
- Vollmer, H., & Mills, D. (1966). Professionalization. Englewood Cliffs, NJ: Prentice Hall.
- Von Glinow, M. A. (1988). The new professionals: Managing today's high-tech employees. Cambridge, MA: Ballinger.
- Wandelt, M. A., Pierce R. M., & Widdowson, R. R. (1981). Why nurses leave nursing and what can be done about it. American Journal of Nursing, 81, 72-77.
- Warmuth, J. (1987). In search of the impact of continuing education. Journal of Continuing Education in Nursing, 18(1), 4-7.

Weber, M. (1947). The theory of social and economic organization. (M. Henderson & T. Parsons, Trans.), Glencoe, ILL: The Free Press.

Wellington, M. (1986). Decentralization: How it affects nurses. Nursing Outlook, 34(1), 34-36.

Wells, G. T. (1990). Influence of organizational structure on nurse manager job satisfaction. Nursing Administration Quarterly, 14(4), 1-8.

Wilensky, H. (1964). Professionalization of everyone? American Journal of Sociology, 70, 137-158.

Zelauskas, B., & Howes, J. (1992). The effects of implementing a professional practice model. Journal of Nursing Administration, 22(7/8), 18-23.

Zimmerman, D. W., & Zumbo, B. D. (1993). Correction for nonindependence of sample observations in ANOVA *F* tests. Journal of Experimental Education, 60, 367-381.

Zuckerman, H. S., D'Aunno, T. A., & Vaughan, T. E. (1990). The strategies and autonomy of university hospitals in competitive environments. Hospitals and Health Services Administration, 35, 103-120.

APPENDIX A

Information Letter to Subjects

Letterhead

Date.

Dear Colleague:

You have been selected by a random chance process to participate in a nursing study. Thank-you for taking the time to consider participation in this research. Let me introduce myself and briefly describe the study to you.

I am a nurse in the doctoral program at the University of Ottawa, Faculty of Education. For my thesis, I am studying the relationship between decision making and aspect of the professional practice environment of clinical staff nurses. It is important to learn more about the work environment of clinical nurses in order to develop unit structures and programs which will allow nurses to practice in the professional way that is satisfying to them and best for patients.

Procedure

Should you agree to participate in this study, you are requested to fill out the attached questionnaire. The questionnaire will measure the degree of decision making you experience in your job as well as some elements of professional practice on your unit. In addition, some information about you and your work unit are required. The questionnaire should take about 25 minutes to complete.

Voluntary Participation

Your participation in this study is voluntary. Your right to decline will be respected without any jeopardy to you or to your employment.

Risks and Benefits

There is no risk involved in filling out the questionnaire. All responses are anonymous and there are no questions pertaining to your identity. Only a research assistant and I will see the completed questionnaires. I do not know the names of those individuals who have been asked to participate and confidentiality is assured.

There are no direct benefits to you as a participant in the study. However, your participation may assist in adding to the knowledge about professional practice in nursing.

- 2 -

Questions

If you have any comments or questions about participation in this study, please contact me at xxx-xxxx or call the Nursing Research Department, 761-4976. You may also call Dr. I. Dow, my faculty advisor at 564-4224 if you have questions. If you wish information concerning the results of the study, please feel free to contact me.

Consent

If you consent to participate, please complete the questionnaire at your convenience within the next few days. It is important that you answer all items. Please answer them candidly. Return the completed questionnaire in the enclosed stamped, addressed envelope by xx.

As a clinical nurse, your views are welcomed and important to a better understanding of how we can improve the practice environment of professional nurses. Your cooperation and involvement in my study are greatly appreciated.

Sincerely,

Jo Logan, RN, BScN, MEd,
Doctoral Candidate,
University of Ottawa,
Faculty of Education.

APPENDIX B

Index of Centralization

Instructions

These questions relate to decision making at work. Please read the following questions and circle the number which most closely characterizes your job.

	Never	Seldom	Sometimes	Often	Always
1) How frequently do you usually participate in the decision to hire new staff?	1	2	3	4	5
2) How frequently do you usually participate in the decisions on the promotions of any of the professional staff?	1	2	3	4	5
3) How frequently do you usually participate in decisions on the adoption of new policies?	1	2	3	4	5
4) How frequently do you usually participate in the decision on adoption of new programs?	1	2	3	4	5
Please read the following statements and circle the answer that best characterizes your job.	Definitely False				Definitely True
5) There can be little action taken here until a supervisor approves a decision.		1	2	3	4
6) A person who wants to make decisions would be quickly discouraged here.		1	2	3	4
7) Even small matters have to be referred to someone higher up for a final answer.		1	2	3	4
8) I have to ask my boss before I do almost anything.		1	2	3	4
9) Any decision I make has to have my boss's approval.		1	2	3	4

APPENDIX C

Professional Practice Environment Scale

This section contains a number of statements about things that occur on some nursing units. After reading each of the statements carefully, indicate to what extent you agree or disagree that each of these statements **actually** applies to **your nursing unit**.

Some statements in this section are fairly similar to other statements. Don't worry about this - simply **circle** the response which best describes your agreement or disagreement with the statement

Please respond to all the statements but do **not** circle more than **ONE** response for each.

SD = strongly disagree		D = disagree		U = uncertain		A = agree		SA = strongly agree	
		SD	D	U	A	SA			
1)	Nurses actively promote their unit in the hospital.	1	2	3	4	5			
2)	Nurses frequently discuss nursing methods.	1	2	3	4	5			
3)	There is constant pressure to keep working.	1	2	3	4	5			
4)	The nurse manager alone makes decisions on matters of unit policy.	1	2	3	4	5			
5)	Nurses do not go out of their way to help a new nurse feel comfortable.	1	2	3	4	5			
6)	There is little emphasis placed on following nursing policies.	1	2	3	4	5			
7)	Nurses are encouraged to be innovators on this unit.	1	2	3	4	5			
8)	There is little group spirit among nurses on this unit.	1	2	3	4	5			
9)	Nurses avoid talking about nursing issues with each other.	1	2	3	4	5			
10)	There are seldom deadlines to be met.	1	2	3	4	5			
11)	The nurse manager encourages staff to be involved in seeking solutions to nursing problems.	1	2	3	4	5			
12)	Nurses mix freely, there are no cliques.	1	2	3	4	5			
13)	The nurse manager expects all nurses to follow directions correctly.	1	2	3	4	5			
14)	Doing things in a different way is valued on this unit.	1	2	3	4	5			
15)	The morale of the staff is high.	1	2	3	4	5			
16)	Professional development matters are seldom discussed by staff.	1	2	3	4	5			

		SD	D	U	A	SA
17)	Nurses cannot afford to relax on this unit.	1	2	3	4	5
18)	Nurses have minimal say in the running of the unit.	1	2	3	4	5
19)	Nurses can rely on colleagues for support and assistance if needed.	1	2	3	4	5
20)	Individual nurses are free to establish their own nursing techniques.	1	2	3	4	5
21)	It is difficult to change anything on this unit.	1	2	3	4	5
22)	Nurses take pride in this unit.	1	2	3	4	5
23)	Nurses are keen to learn from their colleagues.	1	2	3	4	5
24)	The staff on this unit do not work too hard.	1	2	3	4	5
25)	Staff meetings allow all staff members to participate in major decisions affecting this unit.	1	2	3	4	5
26)	Nurses do not mix socially with each other.	1	2	3	4	5
27)	Nurses are allowed to do almost as they please in their own area.	1	2	3	4	5
28)	Variety and change is not considered important on this unit.	1	2	3	4	5
29)	There is little sense of unity among nurses on this unit.	1	2	3	4	5
30)	Many nurses attend inservice and other professional development courses.	1	2	3	4	5
31)	There is no time pressure on this unit.	1	2	3	4	5
32)	Participation in decisions affecting nursing is open to members of the staff.	1	2	3	4	5
33)	Nurses have many friends among their colleagues at work.	1	2	3	4	5
34)	Rules concerning the duties of staff are frequently enforced.	1	2	3	4	5
35)	New information and nursing methods are frequently implemented on this unit.	1	2	3	4	5
36)	Nurses' loyalty to the unit is not considered important	1	2	3	4	5
37)	Nurses show considerable interest in the professional activities of their colleagues.	1	2	3	4	5
39)	It is hard to keep up with your workload.	1	2	3	4	5
40)	Nurses rarely eat lunch together.	1	2	3	4	5

		SD	D	U	A	SA
41)	Senior staff seldom observe nurses or supervise them closely.	1	2	3	4	5
42)	New approaches to things are rarely tried.	1	2	3	4	5
43)	Nurses go about their work with enthusiasm.	1	2	3	4	5
44)	Nurses show little interest in nursing procedures used on other units.	1	2	3	4	5
45)	You can take it easy and still get your work done on this unit.	1	2	3	4	5
46)	Nurses are encouraged to contribute suggestions about the running of the unit.	1	2	3	4	5
47)	Nurses who hold differing opinions from others on the unit tend not to get on with each other.	1	2	3	4	5
48)	The nurse manager monitors closely the activities of nurses on the unit.	1	2	3	4	5
49)	There is a great deal of resistance to proposals for nursing change.	1	2	3	4	5
50)	Nurses hold a shared sense of purpose on this unit.	1	2	3	4	5
51)	Nurses on this unit are not committed to staying abreast of current developments in their nursing speciality.	1	2	3	4	5
52)	Nurses have to work hard to keep up with the work load.	1	2	3	4	5
53)	The nurse manager does not ask nurses to participate in decisions concerning administrative policies and procedures.	1	2	3	4	5
54)	Nurses readily co-operate with other members of staff on joint activities.	1	2	3	4	5
55)	Nurses are expected to follow the established procedures and customs of the unit.	1	2	3	4	5
56)	This unit is among the first to try out new and interesting ideas.	1	2	3	4	5

APPENDIX D**Demographic Information Form**

Finally, information about you and your unit is needed to complete the data. Please check the most appropriate response.

1. What is your sex?
 - 1) ☐ female
 - 2) ☐ male

2. What is your age?
 - 1) ☐ 20-29
 - 2) ☐ 30-39
 - 3) ☐ 40-49
 - 4) ☐ 50-59
 - 5) ☐ 60 or over

3. What is your employment status?
 - 1) ☐ Full-time
 - 2) ☐ Part-time

4. How long have you been employed on your current unit?
 - 1) ☐ Less than 6 months
 - 2) ☐ 6 months - 2 years
 - 3) ☐ 3-4 years
 - 4) ☐ 5-10 years
 - 5) ☐ Over 10 years

5. How long have you been a registered nurse?
 - 1) ☐ Less than 6 months
 - 2) ☐ 6 months - 2 years
 - 3) ☐ 3-4 years
 - 4) ☐ 5-10 years
 - 5) ☐ Over 10 years

6. What is your highest nursing degree?
 - 1) ☐ Diploma
 - 2) ☐ Bachelors
 - 3) ☐ Masters
 - 4) ☐ Doctorate

7. What is your highest non nursing degree?
 - 1) ☐ Bachelors
 - 2) ☐ Masters
 - 3) ☐ Doctorate
 - 4) ☐ None of the above

8. What type of nursing care delivery system is used on your unit?
 - 1) ☐ Total Patient Care
 - 2) ☐ Primary Nursing
 - 3) ☐ Other

9. What is your nursing unit specialty?
- 1) ☐ Medicine
 - 2) ☐ Surgery
 - 3) ☐ Maternal-Child
 - 4) ☐ Critical care
 - 5) ☐ Short stay eg. clinic, same day surgery, operating room
 - 6) ☐ Other
10. How many medical specialties regularly admit patients to your unit?
- 1) ☐ 1
 - 2) ☐ 2-3
 - 3) ☐ 4-5
 - 4) ☐ Over 5
11. How many registered nursing staff work on your unit?
- 1) ☐ Less than 5
 - 2) ☐ 6-15
 - 3) ☐ 16-25
 - 4) ☐ 26-40
 - 5) ☐ 41-60
 - 6) ☐ Over 60

APPENDIX E**First Follow-Up Letter**

Letterhead

Date.

Dear Colleague:

I want to extend my sincere appreciation for your consideration of my research questionnaire practice environment of clinical nurses.

If you have not been able to complete the questionnaire as yet, but are still interested in doing so, it is not too late. I would welcome any additional responses. If the questionnaire has accidentally been misplaced, you can obtain a replacement by calling the Nursing Research Department at 761-4976.

Many participants have returned a completed questionnaire and I want to say thank you for the time taken and the assistance given to complete my research.

Thank you for your support.

Sincerely,

Jo Logan, RN, BScN, MEd,
Doctoral Candidate,
University of Ottawa,
Faculty of Education.

APPENDIX F

Second Follow-Up Letter

Letterhead

Date.

Dear Colleague:

I am contacting everyone for this final notification regarding taking part in my study of the relationship between decision making and the professional practice environment of clinical staff nurses. This is necessary because the questionnaires are anonymous and I do not know who has or has not participated. This study is my thesis work for the doctoral program at the University of Ottawa Faculty of Education.

If you have not already participated, you are requested to fill out the attached questionnaire. The questionnaire will assess the degree of decision making you experience in your job as well as some elements of professional practice on your unit. This is followed by a short section on information about you and your unit. It will take you approximately 25 minutes to complete the questionnaire.

Your participation in this study is voluntary. There is no risk involved in filling out the questionnaire. All responses are anonymous and there are no questions pertaining to your identity.

There are no direct benefits to you as a participant, however, your participation may add to the knowledge about professional practice and how we can improve the practice environment of clinical nurses.

If you consent to participate, please complete the questionnaire within the next few days. Return the completed questionnaire in the enclosed addressed envelope.

Once again, I want to express my sincere thanks to those of you who have already participated. If you have any questions about participation in this study, please contact me at xxx-xxxx or call the Nursing Research Department at 761-4976.

Sincerely,

Jo Logan, RN, BScN, MEd,
Doctoral Candidate,
University of Ottawa,
Faculty of Education.