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UNIVERSITY OF SAN DIEGO
Philip Y. Hahn School of Nursing
DOCTOR OF NURSING SCIENCE

DEVELOPMENT AND TESTING OF AN
EXPLANATORY MODEL OF REGISTERED NURSE EMPOWERMENT

by

Marilyn D. Klakovich, MSN, RN, CNAA

A dissertation presented to the
FACULTY OF THE PHILIP Y. HAHN SCHOOL OF NURSING
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DEVELOPMENT AND TESTING OF AN
EXPLANATORY MODEL OF REGISTERED NURSE EMPOWERMENT

Abstract

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Recent innovations in patient care delivery and nursing governance require an empowered workforce. However, little is known about what combination of organizational, leadership, and personal characteristics maximize the prediction of registered nurse empowerment. The purpose of this study was to develop and test an explanatory model of registered nurse empowerment. The predictor variables included personal characteristics of registered nurses (age, experience, organizational tenure, education, and position level of clinical and/or management responsibility), perceptions of organizational culture, and connective leadership.

The study was conducted in a tertiary-care hospital in Southern California. A total of 113 registered nurses completed the Organizational Culture Inventory (Cooke & Lafferty, 1989), the connective leadership measure (Achieving Styles Inventory [Lipman-Blumen, 1991]), the Klakovich Reciprocal Empowerment Instrument (Klakovich, 1994b), and a demographic

questionnaire designed to elicit personal characteristics.

Regression analysis was performed to identify the variables which significantly predicted registered nurse empowerment. Constructive organizational culture (Beta=.47), connective leadership (Beta=.29), and defensive organizational culture (Beta=-.30) combined to explain 45% of the variance in empowerment, with each of the variables making a statistically significant ($p < .001$) contribution to the regression equation. Although there were no significant relationships between the personal characteristics and organizational culture or empowerment, there was a relationship between position and connective leadership ($r = .27$, $p = .002$) and between highest educational level and connective leadership ($r = .27$, $p = .002$).

The results support previous studies which have emphasized the important relationships of organizational culture and leadership to empowerment. Implications for professional practice and education are addressed. Further theoretical development, empirical testing, and refinement of the Registered Nurse Empowerment Model is recommended. It is proposed that, with further refinement, this model can assist nurses to deal effectively with the major changes challenging them in the rapidly transforming health care delivery system.

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Marilyn D. Klakovich

DEDICATION

I would like to dedicate this dissertation to the memory of two very special people: my Dad and Betty Mottet.

When he was unable to talk due to his tracheostomy, my Dad's enthusiastic "thumbs up" in response to each of my accomplishments in doctoral studies really kept me going. I got to know him better in those last few months and I'll always treasure that time we had together.

And to Betty, who first inspired me with her commitment to nursing and to doctoral study at an open house at USD. She continued to inspire me during my first year of coursework when she kept up with full-time doctoral study while undergoing surgery and chemotherapy for cancer. She maintained her positive outlook as she juggled her commitment to her family and to her studies with the demands of her illness. Her work with autonomy, accountability, and empowerment challenged me to pursue further investigation of empowerment.

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TABLE OF CONTENTS

	<u>PAGE</u>
Dedication	ii
Acknowledgements	iii
List of Tables	vii
List of Illustrations	viii
List of Appendices	ix
 CHAPTER 1. INTRODUCTION	 1
Purpose	3
Research Question	4
Conceptual Framework	4
Registered Nurse Characteristics	6
Organizational Culture	8
Connective Leadership	10
Empowerment	12
The Registered Nurse Empowerment Model	14
Summary	15
 CHAPTER 2. REVIEW OF THE LITERATURE	 16
Registered Nurse Characteristics	16
Organizational Culture	18
Connective Leadership	23
Empowerment	28
Reciprocity	28
Synergy	34
Ownership	36
Summary	39

	<u>PAGE</u>
CHAPTER 3. METHOD	41
Design	41
Sample	42
Setting	42
Subjects	44
Instrumentation	48
Organizational Culture Inventory	48
Achieving Styles Inventory	52
Klakovich Reciprocal Empowerment Instrument ...	55
Demographics	60
Procedures	61
Data Analysis	64
Summary	66
CHAPTER 4. RESULTS	67
Data Reduction	67
Data Aggregation	67
Descriptive Results	70
Model Testing	73
Analysis for Multicollinearity	74
Test of Model Assumptions	77
Bivariate Relationships of Model Variables	77
Contextual Regression Analysis	78
Jackknife Analysis	82
Commonality Analysis	83
Revised Registered Nurse Empowerment Model ..	85
Post Hoc Analyses	85
Cascading Effects of Connective Leadership and Empowerment	85
Self-Report Data Analysis	89
Additional Analyses for Connective Leadership ...	91
Summary	94

	<u>PAGE</u>
CHAPTER 5. DISCUSSION	95
Interpretation of Model Testing	95
Bivariate Relationships	95
Contextual Regression Analysis	96
Revised Reciprocal Empowerment Model	98
Post Hoc Findings	99
Limitations	106
Internal Validity	106
External Validity	108
Implications for Education	109
Implications for Professional Practice	110
Implications for Theory Development	113
Implications for Research	115
CONCLUSION	117
REFERENCES	119
APPENDICES	133

LIST OF TABLES

	<u>PAGE</u>
Table 1 Sample Characteristics and Comparison to Population Figures: Level of Clinical and/or Management Responsibility in Current Position and Shift Assignment	47
Table 2 Psychometric Properties of Instruments	49
Table 3 Reliability Analysis: Empowerment (KREI)	57
Table 4 Rotated Factor Loadings for Klakovich Reciprocal Empowerment Instrument	59
Table 5 Major Characteristics of Sample by Group	68
Table 6 Correlation Matrix of Model Variables	75
Table 7 Contextual Regression Analysis with Individual Variables Controlled, Empowerment (KREI) Scores Regressed on RN Personal Characteristics, Perceptions of Organizational Culture, Connective Leadership, and Group Perceptions of Organizational Culture	80
Table 8 Contextual Regression Analysis with Group Variables Controlled, Empowerment (KREI) Scores Regressed on RN Personal Characteristics, Perceptions of Organizational Culture, Connective Leadership, and Group Perceptions of Organization Culture	81
Table 9 Results of Jackknife Analysis	83
Table 10 Cascading Effects of Connective Leadership and Empowerment	88

LIST OF ILLUSTRATIONS

		<u>PAGE</u>
Figure 1	An Explanatory Model of Registered Nurse Empowerment	5
Figure 2	Organizational Culture Inventory Circumplex: Comparison of Current Sample to "Ideal"	71
Figure 3	Revised Explanatory Model of Registered Nurse Empowerment	86

LIST OF APPENDICES

	<u>PAGE</u>
Appendix A Sample Items for each Factor by subscale on the Organizational Culture Inventory	134
Appendix B Sample Items for each Domain by subscale on the Achieving Styles Inventory - Form 13 (ASI)	136
Appendix C Sample Items for each Subscale on the Klakovich Reciprocal Empowerment Instrument (KREI)	138
Appendix D Demographic Profile	139
Appendix E Informed Consent/Introduction Letter	141
Appendix F University of San Diego Committee on the Protection of Human Subjects Project Action Summary	142

Chapter 1

Introduction

Nursing administrators are constantly challenged to enlist the creative energies and powers of staff nurses in designing delivery systems which assure quality, efficiency of resource utilization, and both provider and consumer satisfaction. The primary goal for nursing administration is the delivery of safe, efficient, cost-effective nursing care to patients (American Nurses' Association, 1988). In order to accomplish this goal, given the complexity of the current health care system and the turmoil inherent in major health care reform, a committed and empowered work force is needed.

A rapidly changing environment places changing demands on both leaders and followers. Lippitt (1986) identified trends that present significant challenges for leaders **and** followers: the double bind of maintaining quality with reduced resources, expectations of shared power and responsibility, increased interdependence requiring collaboration and more open communication, and the need for renewal and continuous new competency development.

With health care reform, there is a move toward collaboration instead of competition, community care networks, and managed cooperation. With the move to patient-focused care, patient care services in health care organizations

are increasingly interconnected. Care is being provided by cross-functional teams where departmental boundaries have been blurred or eliminated. Nursing leadership which connects individuals with each other and with the organization may be the critical variable which mediates the organizational culture of health care organizations while providing the environment for empowered, caring practice. Nursing leaders at all levels will be pivotal in the successful transformation of health care organizations.

Many of the recent innovations in patient care delivery and nursing governance require an empowered workforce: patient-focused care (Tornabeni & DeBaca, 1991), case management (Del Tugno-Armanasco, Olivas, & Harter, 1989), and shared governance (Porter-O'Grady, 1992). However, Conger and Kanungo (1988) assert that the contexts most appropriate for empowerment and the actual management practices that foster empowerment are poorly understood. They view empowerment as a form of influence which may have potential for inducing and managing organizational change and believe that research in this area could contribute significantly to the understanding of effective leadership.

In order to promote the empowerment of nursing staff in today's health care environment, a new leadership theory is needed. This theory must allow nursing leaders to function effectively within the organization's culture while empowering nursing staff through the provision of a caring, professional practice environment. Furthermore, the theory must be congruent with a new

leadership paradigm in order to guide the nursing profession into the twenty-first century.

Consumers are calling for a much larger role in health care decisions. They want to have access to information and to be involved in quality definitions and monitoring (American Organization of Nurse Executives, 1994). Empowered nurses will be needed in order to in turn empower patients to assume this larger role (Benner, 1984).

The aforementioned trends suggest that both leaders and followers are being challenged by the changing health care and global environment. The world is going through a radical transformation, society's values are radically changing, and society must have leaders **and** followers who are able to help organizations transform as well to meet the challenges. These changes occurring in health care and in the world require a new kind of leadership: flexible networks to replace hierarchies, empowered workers who make their own decisions, and the acceptance of loving and caring as legitimate workplace motivators (Rose, 1990). There is a vital need for studies which identify organizational characteristics, personal characteristics, and leadership strategies that contribute to an empowered nursing staff.

Purpose

Meleis and Jennings (1989) advised that leadership models adapted from other fields should be assessed before applying them to nursing. They also argued for the development of nursing administration models that can be utilized in research, practice, and education. While the importance of

empowerment is extensively discussed in the theoretical literature, there is a dearth of empirical evidence regarding what combination of organizational, leadership, and personal characteristics maximize the prediction of registered nurse empowerment.

Accordingly, the purpose of this study was to test an explanatory model of registered nurse empowerment in an acute health care organization. This model incorporated a leadership model from a non-nursing field and was formulated to specify the variables hypothesized to predict empowerment. The model was formulated to predict relationships hypothesized to exist among organizational culture, connective leadership, and characteristics of registered nurses (position, age, experience, tenure, and education), and empowerment (see Figure 1).

Research Question

In order to test the explanatory model of Registered Nurse Empowerment, the question to be examined was: What combination of registered nurse characteristics, perceived organizational culture type, contextual effects of group organizational culture type, and connective leadership levels maximize the prediction of registered nurse empowerment?

Conceptual Framework

The conceptual framework which guided this investigation is rooted in three theoretical domains: organizational culture, leadership, and empowerment. The theoretical rationale for postulating the relationship among

Figure 1. An Explanatory Model of Registered Nurse Empowerment

these three domains and their relationship to registered nurse personal characteristics will be explained in this section. Conceptual and operational definitions for the key concepts are also included. The review is sequenced to correspond with the relationships depicted among the variables in Figure 1.

Registered Nurse Characteristics

After testing her theoretical model of intent to stay in pediatric nurses, Urden (1989) recommended incorporation of additional variables (age, educational level, professional and organizational tenure, specialty, shift) to provide a more complete theoretical model. In keeping with her recommendation, personal characteristics of registered nurses were selected for inclusion in the model based on findings in previous empowerment studies (Klakovich 1994b; Stratton, 1990, Webb, 1992). These studies found that age, education, experience, and tenure were significantly related to empowerment. Furthermore, Cooke and Szumal (1993) asserted that age, education, and organizational level potentially are related systematically to perceptions of organizational culture.

Nurse leaders evolve as a result of many factors. Educational background is assumed to be one of the multiple factors contributing to the development of a leadership style. Older, more experienced nurses should be able to draw on professional and personal experiences which broaden their options in terms of leadership strategies.

Empowerment is a complex, multifaceted network of forces. Personal characteristics of leaders and followers interact in the perception of and

reaction to task demands and to each other (Chemers, 1984). Stichler (1990) suggested that the interpersonal valuing and reciprocal sharing of expertise that occurs in collaborative relationships is more likely to occur with experienced nurses. This finding is particularly relevant to the personal characteristic variables in the Registered Nurse Empowerment Model.

Similarly, Keller's (1991) ethnography of empowerment demonstrated the following personal characteristics that potentiated empowerment: self confidence, competence, self directedness. Moreover, based on their work with magnet hospitals, Kramer and Schmalenberg (1993) confirmed that competence, confidence, and high valuation of self are necessary precursors for empowerment. While no attempt will be made to measure these characteristics in the current study, it is assumed that those in positions of greater responsibility, with higher levels of education, work experience, and life experience, would have greater self confidence, competence and self directedness. These individuals are thus predicted to have higher levels of connective leadership and empowerment.

On the basis of the theoretical and empirical literature and assumptions, the following personal characteristics were selected for inclusion as variables in the Registered Nurse Empowerment Model: age, education (highest educational level attained), experience (years of experience as a registered nurse), tenure (months in current position within organization), and position (level of clinical and/or management responsibility).

Organizational Culture

Organizational culture is based on shared behavioral expectations which reflect the basic assumptions held in common by organizational members. These shared expectations thus form a group or organizational culture (Cooke & Szumal, 1993). Therefore, it is important to not only consider individual perceptions of organizational culture but the contextual effects of group organizational culture as well. Wallerstein (1992) asserted that empowerment can never be measured in isolation from the social setting. Therefore, the contextual effects of organizational culture were considered important variables in the Registered Nurse Empowerment Model.

Schein (1992) contended that leadership is the fundamental process by which organizational cultures are formed, maintained and changed, and that individual and organizational performance cannot be understood without a clear appreciation of the underlying organizational culture. Organizational cultures provide a sense of purpose and bring worth and dignity to human activity within organizations. Leaders are responsible for interpreting and enhancing meanings, for articulating key cultural values, and for linking organizational members to them (Sergiovanni, 1986). Organizational culture establishes "the parameters and the constraints that embellish and restrict the form of leadership" (Henrickson, 1989, p. 552).

Cooke and Lafferty (1989) have identified three unique culture types based on twelve underlying cultural styles. The styles are defined by two underlying dimensions: concern for people versus concern for tasks, and

styles directed toward fulfillment of higher-order needs versus those directed toward protecting and maintaining one's security. The twelve styles represent distinct normative beliefs which guide behaviors of organizational members and determine which behaviors are rewarded or inhibited (Cooke & Szumal, 1993).

Constructive cultures are those in which members are encouraged to interact with others and approach tasks in ways that will help them meet their higher-order needs. Constructive cultures are based on achievement, self-actualization, encouragement of humanism, and affiliation norms.

Passive-defensive cultures are cultures in which members believe they must interact with people in ways that will not threaten their own security. These cultures are based on needs for approval, conservatism, dependency, and avoidance norms. Aggressive-defensive cultures are cultures in which members are expected to approach tasks in forceful ways to protect their status and security. Aggressive-defensive cultures are based on opposition, power, competition, and perfectionism norms (Cooke & Lafferty, 1989).

Previous studies have demonstrated that constructive cultures are positively related to desirable outcomes such as members' satisfaction and negatively related to undesirable outcomes such as turnover.

Passive-defensive and aggressive-defensive cultures have demonstrated the opposite relationships (McDaniel & Stumpf, 1993; Rousseau, 1990; Shortell, Rousseau, Gillies, Devers, & Simons, 1991).

The importance of organizational culture to empowerment is evident in the following statement. "The robustness of the organization, in terms of empowerment, depends to a large extent on the degree to which the context is clear and understood" (Bennis, 1986, p. 67).

In the current study, organizational culture was defined as "the shared beliefs and values guiding the thinking and behavioral styles of members" (Cooke & Rousseau, 1988, p. 245). The Organizational Culture Inventory (OCI) (Cooke & Lafferty, 1989) was used to operationalize the culture variable. The OCI assesses twelve distinct normative beliefs which focus behaviors and the extent to which behaviors are rewarded or inhibited.

Building an effective organization is ultimately a matter of meshing the different subcultures by encouraging the evolution of common goals (Schein, 1992). Over a decade ago, Deal, Kennedy, and Spiegel (1983) stated that welding together the subcultures in hospitals (physicians, nurses, support staff, administration) and channeling their efforts in a common direction "is a challenge that few hospitals can meet successfully" (p. 25). Perhaps, connective leadership, which is described in the next section, can provide the glue that holds the organization together.

Connective Leadership

Health care is moving "from its present fragmentation toward a seamless, continuum of services" (Moeller & Johnson, 1992, p. 28). The culture, structure, and systems of tomorrow's health care organizations, in

concert with global interdependence require a new, integrative model of leadership (Lipman-Blumen, 1992; Moeller & Johnson, 1992).

Leaders must often exceed the bounds of their given authority in order to bridge the gaps and divisions in organizations (Byrd, 1987). Byrd emphasized the need for a leader to cope with the conflicting requirements of multiple constituencies. Health care organizations, in particular, exist within diverse communities (ethnic, religious, fraternal, geographic) which are all relevant to their performance and effectiveness. Additionally, the constituencies involved in complex health care organizations include many different occupations, many professions, lay governance, and volunteer service providers (Vladeck, 1992).

Connective leadership is a complex set of strategies, behaviors, and characteristics that connect "leaders to constituents and to other leaders to form a community of shared actions, values and responsibilities" (Lipman-Blumen, 1994, p. 3-3). The most distinctive quality of connective leaders is their use of a wide combination of strategies to accomplish objectives.

In healthcare and in nursing, there is a need for leadership at every level. Connective leaders excel at recognizing and nurturing strengths in others and thus include a broad range of individuals in the leadership process and foster their ability to work synergistically. This increases leadership strength at every level (Lipman-Blumen, 1992). In order to effectively address

health care reform while preserving caring practice, connective leadership should be considered as a viable leadership model for nursing.

For the purpose of this study, connective leadership was defined as a multi-faceted influence process that utilizes a wide range of implementation strategies to mobilize diverse constituencies toward the achievement of mutual goals (Lipman-Blumen, 1992). Connective leadership was operationalized by the Achieving Styles Inventory (ASI-Form 13) which describes strategies for accomplishing tasks or feelings about particular ways of achieving goals (Lipman-Blumen, 1991).

Empowerment

Empowerment is conceptualized as both process and outcome. Empowerment is transactional in that it involves interactions and relationships with others. An outcome reflects a quality or property which results from the process of empowerment (Gibson, 1991). Keller (1991) distinguished between empowerment as a dynamic relational process that enables power to flow and expand among people, and being empowered as a condition of being that enabled people to use personal power and abilities to take action for the betterment of themselves and the organization. Webb (1992) provided an eloquent description of the distinction between empowerment as process and empowerment as outcome. "Only employees themselves can transform their consciousness, beliefs, attitudes, and actions thereby increasing their sense of self-efficacy, while only management can start the process of sharing

information, material resources, and power which will create genuine opportunities for employees to practice new skills and competencies" (p. 18).

In this study, empowerment is comprised of three major dimensions. The first two dimensions focus on the empowerment process and the last dimension is focused on the outcome of empowerment. The first dimension, reciprocity, is heavily focused on the leadership role with emphasis on leader behaviors such as sharing power, support, and information. However, the two-way flow of resources between the leader and follower is also highlighted. The second dimension, synergy, focuses on the formation and communication of a vision. The follower role in contributing to the development of the vision and the long range direction of the organization is emphasized. The third dimension, ownership, reflects the internalization of the vision and commitment to the organization.

In this study, empowerment was defined as a reciprocal leader-follower influence process which is used to align and advance both individual and organizational goals through the sharing of information, power, resources, and support leading to commitment, confidence and ownership (Klakovich, 1993). Empowerment was operationalized by the Klakovich Reciprocal Empowerment Instrument (KREI) which measures perceptions of the interactive process between the leader and follower (reciprocity and synergy) and perceptions of the outcome of empowerment (ownership) (Klakovich, 1994b).

The Registered Nurse Empowerment Model

In a paper on the importance of organizational culture in health care organizations, Sovie (1993) highlighted the critical relationships among the variables in the Registered Nurse Empowerment Model consistent with the conceptualization in this study. She stated that "It is a major responsibility of each of the individual hospital's leadership to create and maintain a culture that will enable the organization to execute its mission effectively and cope successfully with its environment" (p. 69). Leaders who create cultures and practices that help their organizations succeed will include three basic elements. They will create a partnership for care and an organizational structure and philosophy of shared ownership and participation, redesign roles and responsibilities of managers and caregivers, empower staff and commit to continuous learning. She further argued that organizations must create opportunities for interdisciplinary and interdependent collaboration and communication. Barriers between and among departments, disciplines, and services must be eliminated (Sovie, 1993).

In their studies of magnet hospitals, Kramer and Schmalenberg (1993) look for evidence of "autonomous, empowered behavior and then . . . look backward to see what facilitated that behavior and forward to see results of the behavior" (p. 59). The focus in the current study is on those aspects theorized to facilitate empowered behavior. Personal characteristics of registered nurses believed to be related to organizational culture, leadership, and empowerment were included in the model.

Organizational culture provides the context within which the empowerment process occurs. Connective leadership is the interactive process through which the values of the organization are transmitted and aligned. Both leaders and followers enact connective leadership strategies to engage in the empowerment process (reciprocity and synergy) which results in ownership (outcome).

Summary

Recent innovations in patient care delivery and nursing governance require an empowered workforce. However, not enough is known about which contextual and attribute variables maximize the prediction of registered nurse empowerment. An explanatory model of Registered Nurse Empowerment was formulated to incorporate key variables in the theoretical and empirical literature which have demonstrated a relationship to empowerment. The purpose of this study was to test the predictive power of the model. This initial test of the model was essential prior to using the model to conduct research in multiple sites. It is proposed that this model can assist nurses to deal effectively with the major changes challenging them in the rapidly transforming health care delivery system.

Chapter 2

Review of the Literature

Theoretical perspectives and research applicable to the major variables in the Registered Nurse Empowerment Model are presented in this chapter. As described in chapter 1, the model suggests that organizational culture and nursing leadership at all levels are critical components in the creation and preservation of an environment for empowered, professional nursing practice. Additionally, personal characteristics of registered nurses are important components to consider in this model. Therefore, the review that follows will focus on personal characteristics of registered nurses which have been associated with empowerment in previous research, organizational culture, connective leadership, and empowerment.

Registered Nurse Characteristics

In their study of chief nurse executive (N=206) involvement in decision-making in multi-hospital systems, Harrison and Roth (1987) found that the chief nurse executive's age was the most significant personal characteristic related to involvement in decision-making ($r = .12, p < .05$). Age ($r = .15, p < .05$) and experience ($r = .16, p < .05$) were related to preferred level of involvement in decision-making. Involvement in decision-making is considered a critical aspect of empowerment (Klakovich, 1994b) and thus these two

personal characteristics are considered important in an evaluation of the relationship to empowerment.

Similarly, Webb (1992) included age as a variable in her causal model which was developed to investigate the relationship between interpretive styles, empowerment, and transformational leadership in university leaders (N=114). Although age was not significantly related to any of the interpretive styles, mean empowerment scores increased gradually with age. Webb suggested that future empowerment models should include age as a contributing factor. Astin and Leland (1991) also found that the feminist leaders in their study who were older and more experienced became mentors and role models for the younger leaders and contributed to their empowerment.

In a qualitative study to explore the experience of empowerment, content analysis revealed that the core category was a sense of self which included self-confidence (Klakovich, 1994b). Self-confidence was associated with higher education, experience, and skills.

In contrast to the above studies, in a study of organizational culture and leadership, Kratina (1990) found no significant differences based on age, length of service, or education in relationship to culture, job satisfaction, and turnover. However, she collected data on age and length of service in large categories (e.g., for age 20-34, 35-49, 50 or greater) which may have limited the variability in the sample.

Stratton's (1990) study on organizational climate and empowerment produced similar results. She hypothesized that as level of nursing education

increased, the more enabling the organizational climate. Only one organizational climate subscale (intimacy) was significantly different based on analysis of variance. However, Stratton collapsed climate scores into a dichotomous enabling versus not enabling and thus may have failed to capture the true relationship between education and climate. Similar results were obtained with level of nurse education and peer culture. Additionally, when organizational climate subscales and peer culture were regressed on nurse experience, findings were not significant.

Organizational Culture

Organizational culture provides meaning, direction, and purpose for staff at all levels. The culture maintains the organization's boundaries and provides members with a sense of community, loyalty, and commitment (Bass, 1985).

According to Hollander and Offermann (1990), leadership style is affected by organizational culture. Conversely, Peters and Waterman (1982) observed that well-managed companies have strong cultures and that these strong cultures are usually the consequence of leaders who consistently instill cultural beliefs through messages to their organizations. The articulation of organizational purpose and the maintenance of a consonant organizational culture are central responsibilities of health care leaders (Vladek, 1992). Organizational culture can facilitate or hinder accomplishment of desired objectives (Kilmann, 1988).

In her ethnography of nurse empowerment in an organizational setting, Keller (1991) found that an environment of freedom and a contagious flow of

energy and power were key organizational components related to nurse empowerment. She concluded that organizational culture is an important context for studying, understanding, and creating work environments that support empowering nurses.

Kratina (1990) conducted a study of organizational culture and head nurse leadership and their relationship to job satisfaction and turnover in hospital settings. She used Wallach's Organizational Culture Index to operationalize the culture variable. This index identifies three types of cultures: bureaucratic (hierarchical, based on control and power, cautious), innovative (exciting, dynamic, creative, filled with challenge and risk), and supportive (warm, friendly, fair, trusting, collaborative). Her sample (N=299) included nurses representing four different hospitals from medical, surgical, and special care units. She found that correlations between job satisfaction and innovative cultures ranged from .30 to .63 in the four hospitals. The correlations between job satisfaction and supportive cultures ranged between .44 and .74. Pooled sample consideration leadership behaviors were correlated with innovative cultures ($r=.43$) and supportive cultures ($r=.54$). All of the above correlations were significant at the $<.05$ level. Based on the high intercorrelations between the innovative cultures and supportive cultures, Kratina suggested that a more sensitive measure of organizational culture was needed.

The following studies all used the Organizational Culture Inventory (OCI) (Cooke & Lafferty, 1989) which was also used in the current study to operationalize the culture variable. Based on factor analysis, Cooke and

Lafferty (1989) have described three distinct culture types: constructive, passive-defensive, and aggressive-defensive. The constructive culture may represent a combination of the innovative and supportive cultures described above. Research by Cooke and Rousseau (1988) indicated that organizations characterized as excellent or ideal take the form of constructive cultures.

Two studies demonstrated a relationship between organizational culture and positive outcomes. Rousseau (1990) studied 32 units of a nationwide voluntary service organization. Results revealed that satisfaction or team-oriented culture (constructive culture) subscales correlated moderately to strongly and positively with role clarity ($r=.40-.52$), fit with the organization ($r=.38-.52$), satisfaction ($r=.53-.60$), propensity to stay ($r=.35-.42$), and recommendation of the organization to others ($r=.51-.61$). Of the passive-defensive and aggressive-defensive culture subscales, all but the oppositional subscale had negative correlations ($-.21$ to $-.52$) with each of the above items. All of the above correlations were significant at the $<.001$ level. The quantitative findings were supported by participants in focus groups. Since high managerial control, intragroup competition, and hierarchical decision making were associated with poorer organizational outcomes (fund-raising level), Rousseau (1990) suggested that effective performance was associated with empowered staff. However, empowerment was not a variable in this study.

A national study of 42 intensive care units (Shortell et al., 1991) indicated that a team-satisfaction (constructive) culture was consistently

associated with quality of care ($r=.41$), ability to meet family member needs ($r=.27$), and nursing turnover ($r=-.31$). Nursing and physician leadership practices were measured with two separate scales which focused on emphasizing standards of excellence, communicating clear goals and expectations, responding to changing needs and situations, and awareness of unit members' perceptions and concerns. Leadership practices were associated with constructive cultures ($r=.31, .49$), quality of care ($r=.48, .41$), ability to meet family members needs ($r=.32, .27$), and nursing turnover ($r=-.29, -.31$). The leadership practices had the reverse association with the passive-defensive ($r=-.30, -.18$) and aggressive-defensive cultures ($r=-.18, -.14$). All of these correlations were significant at the $<.05$ level.

The Shortell et al. (1991) study reported not only quantitative findings, but went on to confirm the findings through a qualitative study which included direct observation of actual practices in nine intensive care units. The authors indicated that the observation sites were randomly selected based on their likely performance- high, medium, and low, but they failed to indicate what criteria were used for selection.

Semistructured interviews were conducted with physicians, nurses, and administrators and direct patient care was observed for evidence of culture, leadership, communication, and problem-solving. Based on the findings from the quantitative and qualitative components, Shortell and colleagues (1991) concluded that organizational culture and leadership provided effective communication, coordination, and problem-solving which resulted in increased

team cohesiveness. This, in turn, facilitated the performance of complex, interdependent tasks resulting in higher quality patient care.

To describe the ideal culture for nursing, staff nurses ($n = 26$) representing several hospitals completed the OCI in terms of behaviors that should be expected to maximize organizational performance, quality of care, and individual motivation and satisfaction (Thomas, Ward, Chorba & Kumiega, 1990). The culture they described emphasized members higher-order or "satisfaction" needs. The findings from this small sample were used for descriptive purposes only. Surveys of staff nurses ($N = 56$) in a single organization (Thomas et al., 1990) revealed a weak culture with no strong expectations for any of the cultural styles.

McDaniel and Stumpf's (1993) study of organizational culture in seven acute care hospitals also revealed weak cultures where staff nurses were unclear about valued organization norms or shared expectations. Transformational leadership was unrelated to an aggressive-defensive culture ($r = .00$), negatively related to a passive-defensive culture ($r = -.21$, $p < .01$), and strongly related to a constructive organizational culture ($r = .37$, $p < .001$). Based on this positive relationship, McDaniel and Stumpf (1993) suggested that transforming leaders in constructive cultures can facilitate the empowerment of staff. However, empowerment was not included as a variable in the study. Also, the investigators did not indicate if any of the work redesign or empowerment strategies they recommended were already in place in any of the study sites.

Theoretical and empirical literature on organizational culture is congruent with Schein's (1992) view of the reciprocal relationship between organizational culture and leadership. The influence of both variables will determine the nature of the practice environment for nursing staff.

In McDaniel and Stumpf's (1993) study, even though transformational leadership was strongly related to organizational culture, the moderate transformational leadership scores of the nursing leaders in conjunction with the weak culture profiles suggests that transformational leadership may not be the ideal leadership approach for building strong cultures in nursing organizations. Strong, effective leadership is required to transmit the culture to the staff and ensure positive organizational outcomes. Connective leadership, which is described below, may be what is now needed in nursing.

Connective Leadership

The growing trend is for chief nurse executives (CNEs) to assume responsibility for additional areas that touch upon patient care (home care, ambulatory care, medical records, quality assurance, social services) and support services (housekeeping, transport) (Anderson, 1994). CNEs must coordinate and facilitate multidimensional patient care services (Flarey, 1991). The CNE must facilitate a change in beliefs and values about other services to move health care organizations from "merely a grouping of localized competing services to a coordinated and integrated high-performing patient care organization" (O'Malley, 1992, p. 5).

Given this complex and interdependent environment, connective leadership would seem to have great merit for nurse administrators. Connective leadership is an integrative leadership model developed by Jean Lipman-Blumen (1992) based on extensive research with her Achieving Styles Model. "Connective leadership, which connects individuals creatively to their tasks and visions, to one another, to the immediate group and the larger network, empowering others and instilling confidence, represents a crucial set of strategies for success, not only in the workplace, but in our interdependent world community" (Lipman-Blumen, 1992, p.187).

In the increasingly interconnected healthcare environment, connective leadership is needed to be responsive to diverse communities and constituencies. Connective leaders use a broad range of behavioral strategies to reach out beyond their own constituencies and take a system-wide perspective, using mutual goals to create group cohesion (Lipman-Blumen, 1994). This versatility allows them to respond appropriately to diverse constituencies and complex situations. Connective leaders:

- Deal with implementation in flexible ways, either by working with others sometimes as leaders, contributors to others' tasks, or collaborators in team efforts; entrusting others to carry out their vision, acting as a mentor and taking pride in the accomplishments of others, and focusing on long term goals.

- Connect others to the leader's vision by bringing them into the leadership process. Connect to the visions of others by respecting their needs and convictions.
- Envision new ways of doing things and invite others to participate in developing and implementing innovations.
- Reach out beyond expected constituencies to nontraditional supporters. Establish and maintain relationships with a wide range of associates.
- Articulate and promote positive, community- or system tracing values. Use mutual problems and goals to create cohesion and purpose.
- Transcend personal needs for domination and power by negotiating, mediating, and persuading.
- Commit selves to challenging tasks and envision value- based goals. Set high personal standards of performance and demonstrate willingness to sacrifice selves for the cause.

Connective leadership seems particularly suited to nursing leaders. "It is quite possible that women as leaders will find it easier to accept a whole range of methods for arriving at solutions. . ." (Schein, 1992, p. 367). In response to the interconnected world, connective leaders sense that alliances and connections must take precedence over competition, power and independence in order to succeed in the increasingly complex environment (Lipman-Blumen, 1992).

Connective leadership emphasizes interdependent action between the leader and followers, as well as the leadership contributions of followers and other leaders. It is no longer considered sufficient to have leaders solely at the

top organizational levels (Burns, 1978; Clifford, 1991; Foster, 1986; Gardner, 1989; Rost, 1991)). In her ethnography of nurse empowerment in organizations, Keller (1991) found that leadership characteristics did not apply exclusively to people in formal leadership positions. "Organizations today require people at every level to act powerfully and offer their initiative, energy, and intelligence" (Nixon, 1992, p. 34).

Unfortunately, most data on leadership behavior focuses on individuals whose positions are linked to leadership. In the current study, leadership will be examined at all organizational levels. "We must know more about the hitherto nameless persons who comprise the followers of leaders if we are to develop adequate understanding of the reciprocal relationship" (Burns, 1978, p. 61). Scott et al. (1990) described effective leadership as a co-intentional process that "emerges from meaningful connections with others" (p. 1). Leaders must see internal connections and connection to the external environment. They must understand interdependencies (Senge, 1990).

Although connective leadership has not yet been empirically studied (J. Lipman-Blumen, personal communication, 9/23/93), several studies were identified which reported findings consistent with connective leadership. Allen (1990) described an emerging paradigm of organizations, power, and leadership based on her field study of diverse voices of leadership. Leaders in the emergent power paradigm used strategies such as negotiating credibility (trust, rapport, respect), forming inclusive visions, and empowering diverse participants. Power was defined as an empowering process that created a

sense of independence. Leadership was creating a shared vision and empowering in order to achieve success. Leadership had to be ethical, connected and responsible to the world.

Based on her study, Allen (1990) developed the following leadership dimensions. The first dimension was moral and included core values, respect for life and individuals, concern for the development of a sense of community, connection to something larger than self interest in making a difference, drive to develop others, and the value of connectedness and mutual relationships.

The second dimension was relationship which was seen as the key to leadership. Each individual is unique and must be viewed holistically. Relationships of trust and mutual caring were the basis for respect, caring, collaboration, and empowerment.

Additional dimensions included a focus on process; development and renewal; drive, meaning and vision; connections; and power as empowerment for the many. The final dimension was leadership from a care perspective which included the theme of connection and interest in developing others through participation and collaboration. Allen (1990) asserted that the primary implication of her study is that leadership in the emerging paradigm is better understood by leaders who represent diversity such as women.

A study of excellent CNE (N = 85) leadership (Dunham & Fisher, 1990) demonstrated key characteristics which are consistent with connective leadership. The CNE fostered interdisciplinary respect and cooperation by simultaneously considering the needs and problems of others while

continuously representing nursing's unique needs. CNEs interacted with multiple constituencies: the medical staff, the board, hospital administrators, nursing staff, other departments, and the public.

Murphy and DeBack's (1991) in-depth interviews with 13 nurse administrators considered to be nursing care delivery change agents also revealed qualities of connective leadership. These leaders had mastered interdependence by creating strategic alliances, discouraging competition, and encouraging cooperation among all stakeholders in the change process.

The results of these studies, taken together, suggest that connective leadership may have great merit as a model for providing leadership in nursing and healthcare organizations in today's environment (Klakovich, 1994a). Research which investigates connective leadership and its relationship to other important variables is needed.

Empowerment

Empowerment has been investigated in the context of women, the elderly, minorities, religion, education, health care, management, and community action (Vincenz, 1990). For the purpose of this review, literature which explored the empowerment process between leaders and followers in management and health care settings (reciprocity and synergy) and outcomes of empowerment (ownership) provided the primary focus.

Reciprocity. Reciprocity is the two-way exchange of resources, power, information, creativity, and support (Klakovich, 1994b). In his studies on the evolution of cooperation, Axelrod (1984) demonstrated that coping in an

environment of mutual power requires less competitiveness, optimism about the responsiveness of the other side, and clarity that elicits long-term cooperation. Cooperation consistently resulted in receiving mutually rewarding outcomes.

Cialdini's (1984) research on influence highlighted the rule for reciprocation: one should try to repay in kind what another person has provided. This sense of future obligation within the rule makes possible the development of various kinds of continuing relationships, transactions, and exchanges that are beneficial to society. Reciprocity creates a cluster of interdependencies that bind individuals together into highly efficient units.

Scott and colleagues (1990) developed a leadership model which highlights the reciprocal nature of empowerment. Mutual empowerment is an interactive process attained and maintained between leader and follower. Empowerment is viewed as the "currency" or energy exchanged between leader and followers which provides the momentum for collective action. In this model, at times, the leader may function as a group member and a group member may emerge as a new leader. There is recognition that there are many innovative individuals willing to participate in the process of leadership if provided the opportunity to do so.

Scott et al. (1990) asserted that if leaders use their individual power to empower others, they become empowered themselves. Once empowered, leaders remain empowered and continually refine their leadership capabilities by their connectedness with the group. Those who have been empowered by the leader may become new leaders.

Keller's (1991) ethnography of empowerment demonstrated that the process of empowerment is a two-way street with give and take based on interdependency. "Empowering, as a mutually interdependent process, was reciprocated by energy flowing freely throughout the organization: downward, upward, and horizontally" (p. 170).

The relationship between organizational climate, peer culture, empowerment, and client outcome was investigated in a large teaching hospital (Stratton, 1990). Nurse empowerment was defined as those qualities that enable nurses to achieve nursing objectives for the client. Primary nurses (N=158) completed three measures of empowerment (participation in decision-making, collaboration, and assertiveness). Data were extracted from 6533 patient records for the outcome variables. With empowered nurses, and controlling for medical conditions, both hospital and nurse variables accounted for significantly larger variation (15-45%) in all client outcome measures (dependency, length of stay, and complications) than with nurses who were not empowered (3-7%).

The major strength of Stratton's (1990) study was the large client data set and the examination of both hospital and nurse variables as they related to client outcomes. However, this design would only be feasible in organizations with primary nursing. Also, the indicants chosen for empowerment (participation in decision-making, collaboration, and assertive behavior) may not reflect the key dimensions of empowerment. The single measure chosen for peer culture (support for assertiveness) may have falsely increased correlations with assertive behavior. Furthermore, Stratton opted to use an

organizational climate measure with low reliability scores on two subscales. These instrumentation issues limit the confidence that can be placed in the findings.

A causal model which linked transformational and transactional leadership disposition to the process of empowerment was tested utilizing data gathered from a sample (N=384) of subordinates of a manufacturing organization in Spain (Weber, 1991). Factor analysis of subordinates' perceptions of management practices revealed four behavior domains: rewards and encourages, communicates, responds, and delegates. Transformational leadership disposition was negatively correlated with the four management practices ($r = -.32, -.39, -.48, -.37$), and with feelings of empowerment ($r = -.43$). Weber suggested that perhaps other factors such as organizational culture and structure influenced the findings and recommended future research to incorporate those variables.

In several studies involving the relationships between ministers and parishioners, Roberts and Thorsheim (1991) determined that the key to empowerment was the opportunity to reciprocate support. This finding evolved from studies which focused on one-way support and were unsuccessful in achieving the desired aims. When opportunities for two-way support were incorporated, both ministers and parishioners reported positive outcomes. Roberts and Thorsheim described empowering leadership as enabling others to contribute through their involvement in activities. They believe leaders must also be able to ask others for help and support for themselves.

In an earlier study involving a large nursing sample, Pearlin (1962) reported similar findings. He studied work alienation in a group of nursing personnel (N=1315) in a mental hospital. He found that alienation was intensified when the authority relations limited the reciprocal influence of subordinates.

Chandler (1991) used Kanter's (1977) seminal organizational theory to examine the relationship between nursing work environment and empowerment. Based on the theory, employees who have access to opportunities for increasing skills and knowledge, for career advancement, recognition, rewards, developing policy, and self governance will have high aspirations, self-esteem, and be committed to organizational goals and values.

Chandler's (1991) study was conducted in two nursing organizations with a sample of 247 staff nurses. The Effective Work Conditions Questionnaire (EWCQ) was used to measure empowerment. This 34-item questionnaire included five subscales (opportunities, supplies, job activities, information, and support). Factor analysis revealed only three factors for an effective work environment: support, information, and opportunity. Support was defined as problem-solving advice, and help in gaining access to people. Information was defined as knowledge about the suprasystem (administration), systems (other departments), and subsystems (consumers). Opportunity was defined as the chance to grow and develop within or beyond the present position. The three factors were empirically validated by statistical analysis and by interviews.

Although the empowerment scores were very low, support, information, and opportunity were perceived to be very important for an empowering work environment. Strengths of the study included the high return rate (92%) and the qualitative follow-up to assist with data interpretation. In the hospital with significantly higher levels of support, the CNE made daily rounds, gave frequent positive feedback, tolerated mistakes, aggressively pursued interdepartmental relationships, and disseminated extensive information. These behaviors are consistent with some of the connective leadership implementation strategies. The low empowerment scores may have resulted from the lack of the use of strategies which would provide opportunities for the staff nurses to reciprocate for the resources they were given.

Lazzari (1991) developed an operational definition of empowerment based on an exploratory study with social work field instructors and students. This definition emphasized that empowerment is an interactive process of trust between leaders and followers. Trust was described as both a state of being confident, and as a way to express confidence. The dimensions of trust were mutuality, or shared roles and mutual benefit; facilitation of a sense of personal and professional competence; and support in acquiring new skills and learning to take charge.

In a Delphi study to elicit leader functions from a group of recognized nurse leaders, empowerment was identified as one of the eleven major conceptual areas (Burlingame, 1991). The panelists identified and achieved consensus on the following empowerment functions: creating a climate where

others can actualize talents, enhancing human potential, inspiring others, mentoring, encouraging aspirations and goal setting, sharing leadership, challenging, and providing opportunities for professional growth. These empowerment functions of leaders are all consistent with connective leadership.

Synergy. Synergy is the mutual development of a shared vision (Klakovich, 1994b). Bennis (1986) defined vision as a statement which "clarifies the current situation and induces commitment to the future" (p. 64). Empowerment is a bidirectional process which moves toward actualization of a shared vision (Scott et al., 1990). Schmieding (1993) described a shared vision as a contextual whole that creates a unity of purpose. The vision allows individuals to view situations or events in connection to the whole. The shared vision or collective purpose unites leaders and followers.

Building a shared vision is one of the five disciplines of a learning organization (Senge, 1990). The shared vision fosters genuine commitment and enrollment rather than compliance. If people do not share a common vision, empowering can be counterproductive for the organization. It will increase organizational stress and the burden of management to maintain coherence and direction. Shared vision creates a sense of commonality that permeates the organization and gives coherence to diverse activities.

Senge (1990) clearly highlighted the benefits that can accrue from the ability of connective leaders to connect their vision with the vision of others in the organization. When people truly share a vision they are connected, bound

together by a common aspiration. People with a strong sense of personal direction can join together to create a powerful synergy. "It is not truly a 'shared vision' until it connects with the personal visions of people throughout the organization" (Senge, 1990, p. 214). He believed that the desire to be connected to a larger purpose and to one another underlies the need for a shared vision. When a group of people function as a whole, resonance or synergy develops.

A three stage path model was created to test a cognitive model of empowerment through a survey of participants (N=114) in a university leadership academy (Webb, 1992). Two interpretive styles (envisioning [$\beta=.31$] and evaluative [$\beta=.33$]) were positively related to empowerment at a statistically significant level ($p<.05$). Webb concluded that empowerment leads to action only if the organizational vision makes sense to employees and if they believe that the organization will reward their support. This suggests the need for a strong organizational culture to transmit and reinforce these beliefs.

In a similar vein, Astin and Leland (1991) conducted a field study of feminist leaders in which they defined power as empowerment. Power was considered an expandable resource that is produced and shared through interaction by leader and followers alike. Leadership was defined as a process by which members of a group are empowered to work together synergistically toward a vision that will create change, transform institutions, and improve quality of life. Strategies for empowerment included: clarifying values and providing vision, establishing trust and demonstrating integrity, listening to and

empowering others, and using interpersonal, value-oriented influence rather than power.

Ownership. Ownership is defined as internalization of the vision and commitment to the organization (Klakovich, 1994b). In their work with organizational change, Dalziel and Schooner (1988) found that when employees felt included and involved in plans, decisions, and outcomes, they developed a sense of ownership. DePree (1989) defined owners as those who invest their lives and gifts in the organization, not just those who invest "mere cash" (p. 81). He stressed that hierarchical leaders must share ownership of problems with "roving leaders" who participate by having a say in their jobs, by influencing the management of organizational resources, and by accepting responsibility (p. 42). According to Lipman-Blumen (1994), creativity and ownership flourish with connective leadership.

Chandler (1992) qualitatively examined staff nurse empowerment in five acute care organizations. The key sources of empowerment for the nurses (N = 56) originated from within and were derived from interaction with patients, families and physicians. Empowerment usually occurred in the context of teaching, counseling, comforting, or collaborating in patient care decisions. Empowerment resulted predominantly from internal motivation. This study suggested that to facilitate empowerment, CNEs need to give staff nurses a voice in what is important to them, and provide the resources for staff to be involved in empowering situations.

Cantor and Bernay (1992) developed a leadership equation based on their field study of successful women in political leadership roles: Competent Self + Creative Aggression + WomanPower = Leadership. They advanced that womanpower is a caring kind of power which empowers others. They further held that leaders inspire their followers to excel by creating an atmosphere where people feel good about the place they work and what they do.

To explore the actual experience of empowerment, thirteen informants were interviewed for their impressions of qualities, behaviors, and processes that exemplify empowerment (Klakovich, 1993). The sample consisted of staff nurses, nurse managers, educators, a citizen participant in community activities, and a parent of an autistic child. Content analysis revealed that the core category was a sense of self. This included self-acceptance, self-confidence, comfort, compassion, and validation of self and others.

Inherent in this perspective was a sense that each individual is unique and is free to make choices. Empowered individuals were assertive, and they could create more alternatives or different ways to arrive at an outcome. At the same time, the empowered were connected to others and served as models, mentors, or coaches to facilitate the empowerment of others. Empowered individuals felt in control of their lives and they were doing what they truly wanted to do.

Empowerment as a process was a predominant theme: a growing, developing, and continuous learning process. Another theme was the need to

provide resources in order to empower. Empowerment as delegation by the leader resulting in meaningful participation of followers in important aspects of their jobs was consistently expressed by the nurse managers and staff nurses as a reciprocal process.

However, the respondents in Klakovich's (1993) study offered some guidelines for empowering delegation. Leaders should not just delegate what they do not want to do. Leaders must set realistic visions that reflect the true needs of patients and nurses and align the goals of the nurse with the organization. They need to "get out of their office and see the real issues". Once a decision is delegated, leaders should not "pull back". This results in demoralized staff and the loss of credibility for the leader. Empowerment must be constantly reinforced in specific terms and staff should be rewarded for empowerment. Leaders must listen to their staff and find out what is empowering to each follower individually. Leaders and followers must both understand the other and the limitations that may need to be placed on decisions.

The last key theme that emerged was empowerment as a sense of ownership resulting from internalization of the vision by followers. Ownership was demonstrated in pride in their unit, doing additional things because they care, and really feeling that they were an important part of the organization (Klakovich, 1993).

Summary

The purpose of this chapter was to review the literature relevant to the major variables in the Registered Nurse Empowerment Model. Although the variables in the model, singly, in dyads, or in various combinations, have been the focus of previous studies, the complexity of influences on empowerment can be assessed best if multiple variables are studied simultaneously. The primary purpose of the present study was to test the usefulness of the multivariate model in explaining registered nurse empowerment.

The studies cited supported the proposed relationships between the variables in the model. A synthesis of the organizational culture, leadership, and empowerment literature and associated personal characteristics of registered nurses clearly suggested that connective leadership has great potential for empowering nursing staff and influencing positive outcomes for patients, nurses, and for the organization. With the appropriate organizational culture and leadership strategies there is potential to provide a professional practice environment with empowered nursing staff, promote collaboration among health care disciplines, and increase contributions nursing makes to health care policy and delivery system changes.

ANA standards (1988) described the CNE's responsibilities consistent with connective leadership and empowerment. CNEs provide leadership and vision for the nursing department's development and advancement while fostering a climate which enhances productivity and job satisfaction. CNEs must create a work environment that facilitates involvement of nursing staff in

decision-making. Urden's (1989) study of job satisfaction and intent to stay in pediatric nurses revealed that an environment which fostered and encouraged risk-taking and entrepreneurship allowed for the growth and development of both in individuals and groups and resulted in commitment, ownership, and pride. This lends support for the hypothesized relationship between organizational culture and empowerment.

McDaniel (1990) endorsed multisite-multivariate analyses of a comparative nature "to enhance our understanding of the influences of nursing administration on cost, personnel, delivery of care, and the placement of nursing in the totality of the health care system" (p. 193). Little systematic research exists on the complex linkages among organizational, leadership, and registered nurse variables as they relate to empowerment. The current multivariate study tested an explanatory model of registered nurse characteristics, organizational culture, connective leadership, and registered nurse empowerment in a single setting. Based on the explanatory power of the model, future multisite research may be possible.

Chapter 3

Method

This study investigated the relationships among personal characteristics of registered nurses, organizational culture, connective leadership, and empowerment in registered nurses. The study was conceived as an initial step in testing an explanatory model of registered nurse empowerment. To test the explanatory power of the model, registered nurses in an acute health care organization completed measures on the major variables in the model. Regression and correlational analyses were used to test the model. The specific methods used to conduct this study are detailed in this chapter.

Design

A predictive correlational design was used to test the explanatory model of registered nurse empowerment (see Figure 1). This design was used to explore the relationships between the variables and determine which combination of variables explained the greatest amount of variance in empowerment (Waltz & Bausell, 1981). The predictor variables included group and individual perceptions of organizational culture, connective leadership, and registered nurse responsibility level in current position, age, highest educational level, total experience as a registered nurse, and tenure in current position. The criterion variable was registered nurse empowerment.

The predictive correlational design was selected because the goal was to test the model in a natural setting without experimentally manipulating the variables of interest (Burns & Grove, 1993). By identifying the major variables and determining their relative importance to empowerment, there is greater potential for creating the conditions conducive to empowerment in the future (Pedhazur, 1982). Connective leadership has not yet been empirically studied (J. Lipman-Blumen, personal communication, 9/23/93); therefore, a predictive design to test the explanatory model was the appropriate research strategy.

Sample

Setting. The study was conducted in a 265-bed tertiary-care hospital in Southern California. This hospital is part of a for-profit chain, and is affiliated with a prominent university. The nursing department of this hospital was the focus for this study. The description of the nursing department that follows highlights key characteristics described by Havens and Mills (1992) and Schmieding (1993) that relate to empowerment in registered nurses. Specifically, these characteristics represent structural features "that empower staff nurses by positioning them in activities that influence practice" (Havens & Mills, 1992, p. 59).

Although the hospital does not have a formal affiliation with a school of nursing, nursing, medical, and allied health students have educational rotations in this facility. The nurses are not represented by a collective bargaining unit. The chief nurse executive for the nursing department reports to the chief operating officer but has a close working relationship with the chief executive

officer. Case management has been in place since the hospital opened, and nursing committees are currently working to develop a shared governance model.

The current nursing administrative structure is decentralized with only one formal management level between the chief nurse executive and the staff nurse. This level consists of the Directors of Nursing most of whom are responsible for more than one nursing department. There are also charge nurses who assist with the day to day operations of the nursing units. Their responsibilities vary by unit and director. The philosophy of the nursing department emphasizes active involvement of staff nurses in decision making and a focus on the delivery of improved patient care.

An acute care hospital was selected because even though health care is shifting to outpatient, home, and alternative settings, about two-thirds of the nation's 2.2 million nurses are still employed in hospitals (American Nurses Association, 1993). Also, because of the major shift in healthcare, the acute settings are those that are experiencing the greatest need for work redesign and could potentially benefit most from positive organizational cultures, connective leaders and an empowered registered nurse staff.

A single setting was selected because of the exploratory nature of this study. In Urden's (1989) test of an intent to stay model in pediatric nurses, post hoc analysis demonstrated significant differences across three study sites. Urden suggested that more meaningful findings could be obtained by conducting singular studies specific to each institution. Additionally, by

studying a clearly delineated organization, it is possible to pinpoint the structures, role sets, or processes that contribute to empowerment (Pearlin, 1962).

Subjects. In order to adequately test the model, sampling focused on the entire population of registered nurses employed at the hospital who met the sampling criteria. The only inclusion criteria for the registered nurses were that they must have been employed a minimum of 16 hours per week and must have worked for the facility a minimum of six months. The length of service requirement was derived from literature which suggested that organizational culture develops over some period of time (Schein, 1992). Both length of service and minimum hours per week criteria were included to ensure that there had been enough time for the nurses to assess the organizational culture, and for the organizational culture and leadership variables to have had an impact on each other and on empowerment (Irurita, 1988; Kratina, 1990).

A total departmental listing revealed that 245 registered nurses met the inclusion criteria. All eligible nurses were included in the sample. Of these nurses, 113 returned completed packets for a response rate of 46%. Power analysis indicated that, with a sample size of 113, a power of greater than .95 was derived for the study based on an R^2 of .45, alpha level of .05, and 12 predictor variables (Cohen, 1988).

Response rates less than 50% are considered problematic in terms of representativeness of the sample (Burns & Grove, 1993; Waltz, Strickland, & Lenz, 1991). To assess representativeness, information on the total population

of registered nurses eligible to participate in the study was obtained for comparison purposes. Information was obtained from the computerized staffing/scheduling system used by the nursing department. If not available through that system, the Human Resources department supplied average figures. The description of the sample which follows includes a comparison to population figures if they were obtainable.

As expected, most respondents were female (N=106, 94%). In the total population, 89% of the nurses were female. The respondents ranged in age from 23 to 54, with one-half of the respondents between the ages of 31 and 40. The mean age for the sample was 36.2 as compared to an average age of 30 in the population. The respondents were predominantly Caucasian (N=75, 66%). However, Asian-Americans (N=21, 19%), African-Americans (N=5, 4%), and Hispanics (N=5, 4%) were also represented. This ethnic distribution is fairly comparable to the overall distribution of working nurses in the state of California for African-Americans (5%), and Hispanics (4%). In this sample, Caucasian nurses represented a smaller proportion compared to state figures (78%), and Asian nurses represented a higher proportion than the state average (13%)(RN Special Advisory Committee, 1990).

Forty-one percent of the nurses (N=46) received their basic nursing education in an associate degree program. Diploma nurses comprised 20% (N=22) of the sample while the remaining 40% (N=45) of the nurses were educated at the baccalaureate level. A number of the nurses in the sample had attained higher educational degrees. Twelve of the nurses (11%) had

obtained non-nursing baccalaureate degrees. Forty-two percent (N=47) of the nurses now reported the BSN as their highest degree. Sixteen (14%) of the nurses were masters prepared in nursing and two (2%) nurses had non-nursing masters degrees. Compared to the target population which had 27% BSN and 6% MSN prepared nurses, nurses with higher levels of education were overrepresented in the sample as compared to the population.

The mean years of practice was 10.8 (SD = 6.5). The nurses had been employed by the current organization an average of 26.4 months (SD = 11.8) and had been in their current position within the organization for an average of 22.7 months (SD = 12.2). Because this organization had only been in existence for a little over three years, there was no opportunity for lengthier employments, thus the variability in the last two figures (months employed, months in current position) was limited by that factor. The only comparison figure available in the target population was months employed with a mean of 24.5.

Information was also gathered on the specific position held by each individual which was then translated to a corresponding level of clinical and/or management responsibility. Even though 49% (N=55) of the sample were staff nurses, as can be seen in Table 1 , nurses with higher levels of responsibility were overrepresented in this sample.

Data were collected on shift assignment and average hours worked primarily to determine the representativeness of the sample compared to the

Table 1. Sample Characteristics and Comparison to Population Figures: Level of Clinical and/or Management Responsibility in Current Position and Shift Assignment				
Position	Sample		Population ^a	
	N	%	N	%
1 Staff nurse	55	48.7	164	67
2 Case manager Preceptor Crisis nurse Charge nurse	36	31.9	53	22
3 Lead case manager Nurse coordinator Nursing Admin. Supervisor Clinical Nurse Specialist Educators Information Systems Coord.	16	14.2	20	8
4 Department Director	5	4.4	7	.03
5 Chief Nurse Executive	1	.9	1	.004
<u>Shift Assignment:</u>				
Days (8 hour)	33	29.0	55	22
PMs (8 hour)	4	3.5	5	2
Nights (8 hour)	2	1.8	5	2
Days (12 hour)	45	40.0	96	39
Nights (12 hour)	28	24.8	94	38
(1% missing)				
^a Population figures obtained from Staffing/Scheduling Reports.				

overall population. As shown in Table 1, the percentages of nurses on each shift in the sample were fairly comparable to the corresponding percentages for the population. However, with 29% of the individuals working eight-hour day shifts responding as compared to 22% holding these positions in the overall population, this group was overrepresented in the sample. This group was comprised predominantly of individuals in management positions or clinical positions with broad responsibilities. It was expected that these nurses were the most likely to participate in a study of this nature and is congruent with the information reported above. It is less clear why the nurses working twelve-hour night shifts were underrepresented (25% in sample as compared to 38% in total population).

The figures for full-time status versus part-time status were obtained by including all nurses who worked 72 hours or more every two weeks in the full-time category. All other nurses, whether per diem or regularly scheduled part-time nurses, were included in the part-time category. Seventy-three percent of the nurses in the sample reported full-time work status based on hours worked while 80% of the population had full-time status.

Instrumentation

The instruments used to measure the study variables and their related psychometric properties are summarized in Table 2. A description of each instrument and its related properties is presented in the following sections.

Organizational Culture Inventory (OCI). The OCI was used to measure three specific organizational culture types: constructive, passive-defensive,

Table 2. Psychometric Properties of Instruments					
Concept	Measure	Reference	Validity	Reliability	Current Study Reliability
Organizational Culture	Organizational Culture Inventory	Cooke & Lafferty (1989)	Construct: Factor Analysis	.75 - .92 ^a	.74 - .92 ^a
Constructive					.95 ^b
Passive-Defensive					.95 ^b
Aggressive-Defensive					.94 ^b
Connective Leadership	Achieving Styles Inventory - Form 13	Lipman-Blumen (1991)	Construct: -Discriminant Function Analysis -Factor Analysis	.82 - .91 ^a	.81 - .91 ^a .95 ^c
Empowerment	Klakovich Reciprocal Empowerment Instrument	Klakovich (1994b)	Content Convergent Divergent Construct: Factor Analysis	.84 - .89 ^a .91 ^c	.77 - .89 ^a .92 ^c
^a Subscale scores ^b Factor scores ^c Total scale scores					

and aggressive-defensive. Each culture type is based on four cultural styles which are conceptually organized around a circumplex in which the distance between them indicates degree of similarity and correlation (Cooke & Szumal, 1993).

The OCI is a 120-item inventory with a Likert-type scaling format (Cooke & Lafferty, 1989). The 12 culture styles are each measured by ten items which describe behaviors that might be expected of members of the organization (see Appendix A). The OCI can be completed in under 20 minutes. The response format is on a scale ranging from 1 (not at all) to 5 (to a very great extent). At the individual level, the respondent reports on the extent to which behaviors associated with each style help people to fit in. Items are worded to elicit individual perceptions of organizational expectations.

Shared behavioral expectations are based on aggregated responses at the unit level or at the organizational level. Responses by members of the same organization or subunit can then be averaged to generate an aggregated or composite cultural profile. Group perceptions are based on the extent to which members of the group agree about expectations. In organizations or work groups where "norms are highly crystallized, these shared behavioral norms reflect a strong organizational culture and well-defined pattern of underlying values" (Cooke & Szumal, 1993, p. 1300). Thus, both individual perceptions and group or contextual effects can be assessed using the OCI.

Scores on each style subscale range from 10 to 50. Subscale scores are plotted on a circumplex which has been normed to correct for social

desirability response bias. The 12 subscales form three factors which each depict a major cultural type. Factor scores range from 40 to 200.

Cooke and Szumal (1993) summarized extensive research which provided empirical justification for using the factor scores for the OCI in the present study. This research included studies based on principle components analyses, cluster analyses, and smallest space analyses utilizing different data sets. Furthermore, clinical analyses of organizations including studies based on critical incidents supported the clustering of norms for the twelve culture styles into the three major culture types. In addition, Cooke and Szumal (1993) reported on a principle component analysis with varimax rotation ($N=859$) in which the three factors explained 73% of the variance in organizational culture with constructive culture, aggressive-defensive culture, and passive-defensive culture explaining 27%, 25%, and 22% respectively. Eigenvalues for the three factors were not reported.

In the current study, the summated scores for each factor were treated as interval-level data. Culture scores were analyzed both at the individual and the group level.

Internal consistency reliabilities for the OCI have ranged from .75 to .92 for the subscale scores ($N=661$). In the current study, internal consistency reliability coefficients were determined for each of the three factors of the OCI and for each subscale (Table 2). The Cronbach's Alphas for the constructive factor (.95), passive-defensive factor (.95), and aggressive-defensive factor (.94) were well above acceptable limits (Nunnally, 1978).

The OCI has demonstrated stable factor solutions across more than ten samples representing a variety of service and industrial organizations (Cooke & Szumal, 1993). This instrument is one of the most widely used quantitative measures of organizational culture (Rousseau, 1990).

Achieving Styles Inventory (ASI-Form 13). Connective leadership is measured by achieving styles (Lipman-Blumen, 1991) which are the implementation strategies which individuals use to achieve goals. The Achieving Styles Model (Lipman-Blumen, 1991), which underlies the development of the ASI, identifies three domains of achieving styles. Each domain has a characteristic primary orientation.

The three direct styles are focused on accomplishing one's own task. The intrinsic direct style focuses on task mastery. The competitive direct style focuses on individual performance relative to others'. Power direct achievers are characterized by taking charge and controlling others related to task accomplishment.

The second domain is comprised of instrumental styles which focus on group dynamics, human interaction, social process, and social systems. Personal instrumental achievers use aspects of the self to further goals. The social instrumental style entails using relationships with others as the means to achievements. The entrusting instrumental style is characterized by empowering others to assume responsibility for task completion.

The third domain consists of relational styles which focus on the group or others' tasks. The collaborative relational style is characterized by

accomplishing tasks through group efforts. Contributory relational achievers contribute actively to another's task. Vicarious relational achievers nurture or mentor others to achieve their objectives.

In her work with the Achieving Styles Model, Lipman-Blumen (1994) noted that there are certain leaders who can use virtually all nine achieving styles in various combinations and settings. These leaders understand the complexity of today's environment, and use the entire spectrum of achieving styles to deal with it. This, in turn, gives them more flexibility and opportunities to achieve goals. Lipman-Blumen calls these leaders connective leaders. Because they have high access to and use a broad repertoire of styles, they should have a high cumulative mean score on the ASI-Form 13 (J. Lipman-Blumen, personal communication, 9/23/93).

The ASI-Form 13 is a self-report, 45-item inventory, describing strategies for accomplishing tasks or feelings about particular ways of achieving goals (see Appendix B). The response format is a seven-point Likert-type scale ranging from 1 (never) to 7 (always). Each style is measured by a five-item scale. Scores are reported as means for each style and a test-item mean (mean for the total 45-item scale) which range from 1 to 7.

Connective leadership is based on having high scores on the majority of the subscales reflecting high access to the different achieving styles. This produces a high cumulative mean (5.0 or higher). However, since connective leadership is so new, it is too early to be definitive on a specific number. Since connective leaders tend to achieve goals in relational or instrumental

ways they should score higher than traditional leaders on those achieving styles. However, their scores should reflect that they have access to the direct styles as well since they use these styles in times of crisis although they probably score lower on these styles than traditional leaders (personal communication, J. Lipman-Blumen, 1/18/94).

The test-item mean score on the ASI-13 was used for the connective leadership variable and was measured and analyzed at the individual level. Time required to complete the ASI Form 13 is approximately ten minutes.

In previous studies, internal consistency reliabilities with Cronbach's Alpha have ranged from .82-.91 ($N = 3,758$). In the current study, Cronbach's alpha for the total scale was .95. Subscale reliabilities ranged from .81 to .91 (see Table 2).

Discriminant function analyses using the ASI-Form 13 items as predictors have demonstrated substantial predictive capabilities by predicting gender (62.6% of the time) and level within organization (66.3% of the time). This supported the predictive criterion validity of the instrument based on the underlying assumptions of the Achieving Styles Model which suggested that socialization and experience contribute to the development of achieving styles (Lipman-Blumen, 1991). However, the ASI-Form 13 was not as effective at predicting age (37.9% of the time). Construct validity of the ASI-Form 13 was supported by principle components analysis with an oblique rotation with factor loadings ranging from .56 to .87 for the appropriate underlying achieving style.

Klakovich Reciprocal Empowerment Instrument (KREI)

Empowerment was measured with the KREI which elicits perceptions of the interactive process between the leader and the follower (reciprocity and synergy) and perceptions of the outcome of empowerment (ownership). The KREI is a self-report, 24-item instrument (see Appendix C). The response format is a Likert-type five-point scale ranging from 1 (not at all true) to 5 (extremely true). A summated score is obtained for the total scale.

In the current study, the summated score for the total scale was used and was treated as interval-level data. Empowerment was measured and analyzed at the individual level. The KREI can be completed in approximately five minutes.

Review of the instrument by a panel of five content experts supported the content validity of the KREI. A content validity index of .97 was obtained after deleting items which did not meet the minimum criterion of .80 (Waltz, Strickland, & Lenz, 1991).

In a pilot study (N= 220) conducted to establish the psychometric properties of the KREI (Klakovich, 1994b), internal consistency reliability using Cronbach's alpha was .91 for the total scale. Subscale reliabilities ranged from .84 to .89. The intercorrelations among the subscales were significant and moderately correlated ($r=.41$ to $.53$). This suggested that while the subscales were closely related, they each measured a different aspect of empowerment.

In the current sample, item-total correlations and mean inter-item correlations in addition to Cronbach's alpha for internal consistency reliability

were obtained (see Table 3). The Cronbach's alphas for the subscales (Reciprocity, .85; Synergy, .89; Ownership, .77) and for the total scale (.92) were within acceptable limits for a newly developed scale (Nunnally, 1978).

The .77 alpha for the ownership subscale was considerably lower than in the previous administration (.84) of the KREI. An examination of the corrected item-total correlations revealed that item 19's correlation was only .18 in comparison to the remaining items ranging from .41 to .58. For the total scale, the communality for this item was only .06 in comparison to .47 to .72 for the remaining items. This item states "I have control over my life." Since the KREI is intended to measure empowerment in organizational settings, this item may relate more closely to overall empowerment rather than empowerment in the context of leader-follower relationships. However, deleting this item only raises the scale alpha to .78. Since the cumulative score for the total scale was used in this study, subscale reliabilities were not considered critical.

Convergent validity was investigated by correlating the KREI with the short form of the Vincenz Empowerment Scale (1990). Pearson's correlations ranged from .21 to .41 ($p < .01$) for the subscales and total scale. Divergent validity was investigated by correlating the KREI with Dean's Alienation Scale (1961) with correlations ranging from $-.14$ ($p < .05$) to $-.20$ ($p < .01$) for the subscales and total scale. Freedom from social desirability response bias was enhanced by deleting items which significantly correlated ($p < .01$) with the Marlowe-Crown Social Desirability Scale (Crown & Marlowe, 1960).

Table 3. Reliability Analysis: Empowerment (KREI)

	Alpha	Mean Inter-Item Correlation	Minimum Inter-Item Correlation	Maximum Inter-Item Correlation	Corrected Item-Total Correlations
REC	.85	.41	.19	.68	.48 - .80
SYN	.89	.53	.40	.86	.59 - .79
OWN	.77	.29	.01	.66	.18 - .58
KREI (Total)	.92	.34	-.10	.87	.16 - .75
REC = Reciprocity SYN = Synergy OWN = Ownership KREI = Empowerment total					

The investigator-developed instrument to measure empowerment was based on an empirical study and theoretical assumptions about the leader-follower relationship in organizational settings. Construct validity was supported by a principle components analysis with varimax rotation. This analysis resulted in a three factor solution which explained 55.8% of the variance in empowerment and supported the underlying theoretical dimensions of empowerment. Each factor forms a subscale in the KREI.

To determine if the factor structure of the KREI was stable in comparison to the pilot study (Tinsley & Tinsley, 1987), principle components factor analysis with varimax rotation was performed with the current sample. An initial analysis was performed without specifying a specific number of factors to extract. Six factors emerged from this analysis. Even though the eigenvalues for factors 4 (1.29), 5 (1.09), and 6 (1.01) exceeded the minimum acceptable requirement of 1, these factors had only 1 to 3 items and were difficult to interpret.

A second analysis was performed specifying a three-factor solution. The first factor to emerge included all of the original synergy items. In addition, it included two items each from the reciprocity and ownership subscales. The second factor consisted of the remaining six items from the reciprocity subscale. The third factor included three items from the ownership subscale. Five items were problematic with this factor solution. Item 10 was almost evenly split between factors one and three while items 7 and 23 loaded highly on both factors one and two (see Table 4). Item 16 loaded highly on

Table 4. Rotated Factor Loadings for Klakovich Reciprocal Empowerment Instrument (n=113)				
Factors	Synergy I	Reciprocity II	Ownership III	Communality
Item				
15	.77			.64
2	.75			.61
18	.75			.68
5	.72			.58
11	.72			.63
21	.70			.54
3	.68			.58
8	.67			.50
9	.66			.56
23	.61	.45		.58
24	.60			.48
7	.52	.51		.58
14	.50			.32
10	.49		.49	.48
22		.75		.73
12		.74		.61
6		.71		.54
20		.69		.50
13		.62		.45
16		.60	.51	.72
4			.83	.73
1			.77	.66
17			.73	.54
19			.22	.06
Eigen values	9.29	2.33	1.7	
Pct of Var	38.7	9.7	7.1	
Cum Pct	55.5			

both factors two and three. Item 19, which was discussed above, failed to load highly on any factor. Since the minimum acceptable loading is typically .40 or higher (Waltz et al., 1991), this item should probably be dropped from the scale.

The high intercorrelations among the subscales (.56, .64, .71) supported using the total score for the KREI in this study. The three factors which emerged in the factor analysis corresponded to the theoretical dimensions in the underlying conceptual framework for the KREI. This supported the construct validity of the KREI for this study. However, instability in the factor structure suggested the need for further refinement of this instrument prior to further use.

Demographics. Personal characteristics were collected with a demographic questionnaire designed by the researcher (see Appendix D). Characteristics collected included age, ethnicity, gender, education, experience, and tenure in current position. Data were also gathered on unit and shift assignment, full-time/part-time status and position title. Some of these characteristics were collected to describe the sample and to compare the respondents to the non-respondents to evaluate representativeness of the sample (Burns & Grove, 1993). The position title was used to assign each individual to a level of clinical and/or management responsibility which was treated as an ordinal variable (see Table 1). The highest educational level variable was also treated as an ordinal variable and scored in the following manner:

RN diploma	= 1
Associate Degree	= 2
Other Baccalaureate	= 3
Baccalaureate, Nursing	= 4
Other Masters	= 5
Masters, Nursing	= 6
Doctorate	= 7

Procedures

Initial support for this study was obtained from the CNE of an acute care hospital in Southern California. The researcher attended a nursing management meeting and a preceptor meeting to be introduced, to explain the purpose of the study, and to discuss data collection procedures. The researcher collaborated with the Director of Nursing responsible for staffing and scheduling to identify the registered nurses who met the inclusion criteria.

Informed consent procedures included a brief letter accompanying the protocol packet explaining the purpose of the study. The letter addressed anonymity of responses, the use of only grouped data for publications, and potential risks and benefits of participation in the study (see Appendix E). Return of the completed survey indicated agreement to participate in the study. In previous studies, personalized materials have been shown to raise response rates between 7-8% (Anderson, 1970). Therefore, each letter was personally addressed to each participant and was hand signed by the researcher. Also, to encourage participation, participants were given the option of providing a

self-identifying code with their responses so they could obtain a personal leadership profile at the completion of the study.

Estimated duration of subject participation was approximately 30 minutes per subject. The data were collected over a three-month period. There were no apparent risks to the volunteer subjects. Potential benefits to subjects included increased knowledge of the qualities, behaviors, and processes of empowerment in the context of the leader-follower relationship. This could enhance their understanding of their personal perceptions of empowerment and the role of empowerment in the professional practice of nursing. The potential benefits to subjects were anticipated to outweigh the potential risks.

All data were stored in a locked file in the office of the researcher. Coding information was stored in a separate locked file. There was no expense to subjects beyond their time to complete the survey packet. Each packet was accompanied by a postpaid return envelope so that respondents were aware that no hospital personnel had access to their responses. The proposal for this study was reviewed and approved by the Committee for the Protection of Human Subjects at the University of San Diego (see Appendix F). Administrative approval was obtained from the agency. No other agency approval process was required since the study did not involve patients.

Each respondent was asked to complete the measures for organizational culture (OCI), connective leadership (ASI-Form 13), and empowerment (KREI). All participants were also asked to complete a

demographic questionnaire. Each respondent was requested to return the questionnaires within two weeks.

The cover letter, instruments, and demographic questionnaire were combined in a packet. The researcher made rounds to each nursing unit and personally distributed the packets to each nurse's individual in-house mailbox. Response rates are likely to be higher with personal contact (Waltz, Strickland, & Lenz, 1991). Packets were not coded until they were returned to assure respondent anonymity.

A plan for monitoring the return of questionnaires was implemented to determine the appropriate timing for follow-ups based on declining daily responses (Babbie, 1973; Baker, 1985). An initial follow-up reminder was distributed two weeks after the onset of data collection since only 24% of the sample (N=58) had returned packets. Since it was not known which subjects participated, follow-up reminder notices were placed in each sampled individual's in-house mailbox indicating that the data collection period had been extended and encouraging participants to return their completed packets. A second follow-up reminder was distributed four weeks later due to diminishing returns. At that point 33% (N=84) of the sample had returned their packets. Update notices were also provided to the Chief Nurse Executive on a biweekly basis indicating the percentage return by nursing unit. With this information, she encouraged her directors to remind staff to return their packets.

Information was retained (unit, shift, tenure, age, education, gender, part-time/ full-time status) on the total group of sampled nurses to evaluate potential selection bias. Some of this information was available on the computerized staffing/scheduling report used to identify the sample. If not available on that report, the Human Resources Department supplied the researcher with average figures for the nursing department. Also, the date when the questionnaire was returned was recorded to assess differences between early and late responders (Waltz, Strickland, & Lenz, 1991).

Data Analysis

Data obtained from the OCI, KREI, ASI-13, and demographic questionnaires were entered directly from the forms into the VAX mainframe computer system at the University of San Diego. The researcher entered all data. A second person was used for a data cleaning procedure to ensure accuracy of data entry prior to analysis. This was accomplished by one person reading from the forms and the second person verifying accuracy of input on a printout of the data entry. The Statistical Package for the Social Sciences (SPSS) was used for all data analysis. The level of statistical significance established for this study was $p < .05$. Missing data were handled by using listwise deletion.

Descriptive statistics in the form of mean, standard deviation, percentage, frequencies, distribution, median, and range were obtained to describe the characteristics of the sample and the major variables. To test the research question to determine which variables maximized the prediction of

registered nurse empowerment, stepwise multiple regression analysis was performed. Output was examined for standardized beta weights, significance level, amount of variance explained (R squared) and adjusted R squared to account for sample size. Collinearity diagnostics and residual analysis were assessed. Assumptions for multiple regression including homoscedasticity, linearity, and independence were met (Waltz & Bausell, 1981). Two of the variables were measured at the ordinal level and were not normally distributed. However, regression has been demonstrated to be a robust procedure and can thus be used when some assumptions are not met if measurements are fairly reliable and the correct regression model is used (Dawson-Saunders & Trapp, 1994).

For the analysis of bivariate correlations, Pearson's r was used for the interval-level variables which all met the assumptions for normal distribution and linearity. For the ordinal-level variables with abnormal distributions, the nonparametric Kendall's tau was used. Independent samples t-tests and analysis of variance (ANOVA) were used to test for differences between or among subgroups within the overall sample. Normally distributed, interval-level variables were used as the dependent variables in these analyses. The Student-Newman-Keuls test was used as the post hoc test for the ANOVAs since the comparisons were being made among groups with unequal numbers.

Summary

Data were collected from a sample of registered nurses on personal characteristics, organizational culture, connective leadership, and empowerment in a large, tertiary acute care hospital. Data were analyzed to determine the relationship among these variables and other key demographic variables. The goal was to find the best equation for predicting registered nurse empowerment. This analysis plus additional post hoc analyses are described in the following chapter.

Chapter 4

Results

Data were analyzed through a process of data reduction, model testing which included regression analysis, testing of assumptions, and post hoc analyses. A summary of all statistical analyses is presented in this Chapter. Data reduction procedures including data aggregation to prepare for the contextual regression analysis are described. Multicollinearity diagnostics and tests of model assumptions in preparation for testing the Registered Nurse Empowerment Model are then presented. Results are reported for the contextual regression analysis used to test the model. Additional post hoc analyses are also detailed.

Data Reduction

Prior to any statistical analysis, data were reduced by computing summative scores for each OCI subscale and factor, mean scores for each ASI-13 subscale, domain, and total, and summative scores for each KREI factor and total.

Data Aggregation

For the purposes of determining if there were group effects of organizational culture on empowerment, the sample was first grouped into ten individual nursing units. Table 5 presents some of the major characteristics of the sample by group and mean scores on the major variables.

Table 5. Major Characteristics of Sample by Group										
	AGE	YRSPRAC	MOSPOS	POS	PAS	AGG	CONS	ASI	KREI	% Responses
1 n=23	35.8	8.5	26.2	56% Staff Nurse	91.2	84.5	165.1	4.02	96.5	52%
2 n=13	38.8	14.0	28.6	70% SN	104.5	97.1	142.4	4.13	84.6	42%
3 n=7	39.0	13.6	21.9	43% SN	108.6	92.6	148.3	4.76	87.4	44%
4 n=11	36.0	8.7	24.8	36% SN	103.4	92.1	165.4	4.55	100.3	48%
5 n=12	38.2	13.8	30.2	0% SN	106.7	97.6	155.9	4.83	87.7	75%
*6 n=3	33.0	11.0	11.3	0% SN	131.0	126.7	142.3	4.98	77.7	100%
7 n=8	35.3	10.5	18.7	50% SN	101.1	94.5	166.5	4.71	88.0	42%
8 n=12	37.7	13.6	15.5	59% SN	101.3	93.0	152.3	4.36	83.4	36%
9 n=13	32.5	6.2	24.0	54% SN	105.5	95.6	162.7	4.38	86.5	36%
10 n=10	32.6	10.2	16.2	70% SN	104.9	100.7	144.5	4.42	83.4	42%
YRSPRAC	-	Years of experience as a Registered Nurse								
MOSPOS	-	Tenure in current position								
POS	-	Level of clinical and/or management responsibility								
PAS	-	Passive-Defensive Organizational Culture								
AGG	-	Aggressive-Defensive Organizational Culture								
CONS	-	Constructive-Defensive Organizational Culture								
ASI	-	Connective Leadership								
KREI	-	Empowerment								
* The Director of this small department does not report to the chief nurse executive but the staff are all RNs.										

In cross-level research, typically, the dependent variable is at the individual level and some independent variables are global variables attached to higher levels. In such cases, where correlational analyses are conducted, all individuals in the same unit should be assigned the same global score and correlations should be computed at the individual level. This approach allows effects of unit characteristics on lower level responses to be assessed at the level where those effects are hypothesized to occur (Rousseau, 1985). Each nursing unit was considered a "homogeneous organizational subunit within which shared assignment of meaning can be inferred" (Hughes & Anderson, 1994, p. 83).

In this study, the criterion variable (empowerment) was conceptualized and measured at the individual level. One of the predictor variables (organizational culture) was hypothesized to have a contextual or group effect. Consistent with Rousseau's (1985) recommendations, group scores were calculated for each of the organizational culture types and assigned to individuals based on group membership. The group organizational culture variables consisted of the mean unit score for each of the OCI factors: Group Constructive (GCONS), Group Passive (GPAS), and Group Aggressive (GAGG).

To avoid committing a cross-level fallacy due to erroneous aggregation of independent observations, analysis of variance (ANOVA) was performed to determine if unit membership explained sufficient variance in the OCI factors to permit aggregation. The Constructive factor was the only variable to produce

a significant F ratio ($F = 2.57, p = .01$). Since each group contained a different number of members, the Student-Newman-Keuls test was used to determine differences among the groups. This test indicated that group one was significantly different from group two ($p < .05$).

Hughes and Anderson (1994) suggested using the eta-squared coefficient to detect between-groups variation when the sample is fairly homogeneous as in nursing systems research. The eta-squared coefficient for this analysis was .18. Although a definitive value for determining appropriateness of aggregation has not been reported in the literature (Forbes & Taunton, 1994), Shortell and colleagues (1991) used eta-squared coefficients ranging from .08 to .22 as evidence of perceptual agreement. Therefore, it was determined that only the constructive factor scores could be safely aggregated to the group level to determine contextual effects of organizational culture.

Descriptive Results

The OCI subscale scores for this sample were plotted on the OCI circumplex (see Figure 2) and compared to the scores of a small sample ($N=26$) of registered nurses representing several hospitals who were asked to describe an "ideal" organizational culture (Thomas et al., 1990). Because of the small sample in the Thomas study, which was obtained strictly for descriptive purposes, the findings were used for a comparison only. As can be seen in Figure 2, the constructive subscale scores for the current sample are slightly lower than the ideal scores, and the passive-defensive and

Figure 2. Organizational Culture Inventory Circumplex Comparison of Subscale Scores of Current Sample to "Ideal" Scores.

(Form © Human Synergistics, 1989. Reproduced by permission)

aggressive-defensive scores are slightly higher for the current sample than the ideal.

For the connective leadership measure, scores for each of the achieving styles and for the total scale for the current sample were compared to norms ($n=3165$) that have been established for the ASI-Form 13. The diverse sample for the normed data included first-line managers, mid-level managers, and senior executives from major corporations, non-profit health care and educational organizations, and smaller businesses. Also included were engineers, secretaries, therapists, full-time homemakers, students, and retired people (Lipman-Blumen, 1988). Norms were reported for the group as a whole and by gender.

For the current study, achieving style scores were compared to the norms for the entire sample and by gender. Scores were also compared by position level to assess whether a closer approximation in mean years of education would result in closer achieving styles scores as compared to the database. In all of the nursing subsamples and total sample, there was a narrower age range and a lower educational level than in the normative database sample. The nurses in the total sample scored lower on all of the direct and instrumental achieving styles although the entrusting instrumental achieving style was almost identical to the database score. The nurses scored higher on the collaborative relational and contributory relational achieving style and lower on the vicarious relational achieving style.

The small subsample of nurses with position levels 3, 4, or 5 represented the nurses anticipated to be most likely to exhibit connective leadership. Indeed, their scores were higher on the intrinsic direct style but lower on the other two direct styles than in the database sample. They only scored slightly higher on the entrusting instrumental style and lower on the other two instrumental styles. On all three relational styles, their scores were markedly higher. Their test-item mean of 4.91 approached the 5.0 suggested minimum test-item mean for connective leadership.

Since the Klakovich Reciprocal Empowerment Instrument (KREI) was a newly developed instrument whose only prior use was in the pilot study for instrument development, the figures for that study were the only ones available for comparison. The mean score for the KREI was 89.1 (SD = 15.1) for the entire sample in the current study. In the pilot study, staff nurses and nurses in management positions working in hospital and community health settings were included. The mean empowerment score in that subsample (N=149) was 82.5 (SD = 15.4). These two groups were significantly different in terms of mean empowerment scores ($t=4.125$, $p<.001$).

Model Testing

This study employed multiple regression in order to explore whether registered nurse personal characteristics, organizational culture, and connective leadership were able to explain variance in registered nurse empowerment. To determine if organizational culture had a contextual or group effect in addition to an individual effect, contextual regression analysis

was performed. This involved running two separate regressions which permitted the assessment of group effects versus individual effects.

Analysis for Multicollinearity. Multicollinearity was important to this study because of the complex interrelationships of the variables included in the theoretical development of this model (Shroeder, 1990). The individual organizational culture variables consisted of the individual's score for each of the OCI factors: Constructive (CONS), Passive-Defensive (PAS), and Aggressive-Defensive (AGG). A preliminary inspection of the correlation matrix for the proposed regression variables (see Table 6) revealed that PAS and AGG were strongly correlated ($r = .82, p < .001$).

Since bivariate correlations fail to provide information about interrelationships among multiple predictor variables, separate regressions were performed regressing each predictor variable on all other predictor variables (Berry & Feldman, 1985). The R squares for AGG (.71) and PAS (.67) were considered high enough for concern. Since PAS and AGG were strongly correlated, they were summed to create a new variable (AGGPAS) which represented defensive organizational cultures. For the remainder of the dissertation, the new variable will be referred to as defensive culture. The R squares for CONS and GCONS were .32 and .19 respectively.

The only other variable pair that seemed a likely candidate for causing multicollinearity problems was age and years of practice ($r = .59, p < .001$). The R square for age was .37 while the R square for years of practice was .48 with age being the predominant predictor. Since it was believed that years of

Table 6. Correlation Matrix of Model Variables

	Age	Education ^a	Experience	Tenure	Position ^a	ASI TOT	CONS	PAS	AGG	GCONS	GPAS	GAGG
Age	1.0											
Education ^a	.04	1.0										
Experience	.59***	.20**	1.0									
Tenure	.29***	.09	.32***	1.0								
Position ^a	.07	.17*	.22**	.10	1.0							
ASI TOT	-.01	.20**	.13	.14	.25**	1.0						
CONS	.07	-.02	-.05	.11	.03	.16	1.0					
PAS	.06	.06	.13	.08	-.09	.31***	-.28**	1.0				
AGG	-.04	.11	.10	.16	-.02	.38***	-.32***	.82***	1.0			
GCONS	-.12	-.00	-.29***	.06	.05	.05	.38***	-.08	-.11	1.0		
GPAS	.07	-.00	.23**	-.05	.25**	.27**	-.20*	.23**	.20*	-.47***	1.0	
GAGG	.02	.15	.24**	-.04	.19*	.23**	-.27	.25**	.26**	-.56***	.91***	1.0
ASI TOT = Total connective leadership CONS = Constructive culture PAS = Passive-defensive culture AGG = Aggressive-defensive organizational culture GCONS = Group constructive culture GPAS = Group passive-defensive culture GAGG = Group aggressive-defensive organizational culture												
^a Kendall's Tau * < .05 ** ≤ .01 *** ≤ .001												

practice was theoretically the more important variable, age was dropped from the regression equation. The other variables included in the equation were: connective leadership (ASITOT, $R^2 = .34$), months in current position (MOSPOS, $R^2 = .10$), highest educational degree (HIED, $R^2 = .09$), and level of clinical and/or management responsibility in the nurse's position (POSITION, $R^2 = .15$).

An inspection of the collinearity diagnostics including tolerances, variance inflation factors (VIFs) and condition indexes suggested that there may be potential problems with multicollinearity in the equation which included the group variable (GCONS). Tolerance indicates the proportion of variability in independent variables not explained by other independent variables. The tolerances were all within acceptable range (.70 -.81) easily exceeding the minimum acceptable criterion of .01. The VIFs which indicate the degree to which the precision of the model is degraded by multicollinearity were well below the level for concern (>10) ranging from 1.2 to 1.4 (Schroeder, 1990).

Ferketich and Verran (1991) described a method for determining the magnitude and location of linear dependencies using the condition index and variance decomposition proportion for each independent variable. When both are of sufficient magnitude, collinearity may be affecting parameter estimation. Although the figures for diagnosing this problem are sample specific, a condition index which exceeds 30 usually indicates that regression coefficients are unstable and their magnitude and sign can be expected to change over repeated samples. The GCONS variable had a condition index of 55. The condition indices for the individual variables ranged from 10 to 25.

Tests of Model Assumptions. Waltz and Bausell (1981) recommended a ratio of 30 subjects per variable for a ratio of .03. In this study, after listwise deletion for missing data, there were 3 variables in the equation for 109 subjects for a ratio of .027. Assumptions for linearity, fixed independence, random variance, and normal distribution of the residuals were met as described by Verran and Ferketich (1987).

Bivariate Relationships of Model Variables. Based on previous research with the OCI, it was predicted that the registered nurse characteristics would be positively related to perceptions of constructive organizational culture and negatively related to passive-defensive and aggressive-defensive cultures. However, the correlations were extremely small (-.05 to .17), many were not in the expected direction, and none of the correlations were statistically significant.

With this initial use of the ASI as a measure of connective leadership, correlations between the registered nurse characteristics and connective leadership were of great interest. Highest educational level ($r = .27$, $p = .002$) and position ($r = .27$, $p = .002$) were the only personal characteristics of registered nurses to be positively related to connective leadership. Also of interest were correlations between connective leadership and the OCI. The small correlation between the constructive culture and connective leadership ($r = .13$) was not statistically significant. Although passive-defensive ($r = .30$) and aggressive-defensive ($r = .38$) cultures were significantly related to connective leadership, the relationship was not in the predicted direction.

None of the registered nurse characteristics were significantly correlated with the criterion variable, empowerment. As predicted, empowerment was strongly positively related to constructive culture ($r=.61$) and moderately negatively related to passive-defensive ($r=-.36$) and aggressive-defensive ($r=-.33$) cultures. Also as predicted, connective leadership was positively related to empowerment although the relationship was relatively weak ($r=.24$, $p=.012$).

Contextual Regression Analysis. Since the Registered Nurse Empowerment Model incorporated variables measured at both the individual and the group level, contextual regression analysis was performed. The OCI measures both shared behavioral expectations and individual-level normative beliefs (Cooke & Szumal, 1993). Therefore, contextual regression analysis was performed according to guidelines suggested by Holzemer, Jennings, Chambers, and Paul (1989) to determine the impact of organizational culture as a group effect and as an individual effect. The purpose of contextual regression is to determine "whether group membership contributes to the explanation of variance in an outcome measure after the effects of individual characteristics have been taken into account" (Holzemer et al., 1989, p. 124).

Contextual regression employs both hierarchical and stepwise multiple regression. The sets of individual and group variables were entered in blocks in a predetermined order. However, variables within blocks were allowed to enter the regression in a stepwise fashion. Since it was anticipated that the shared beliefs would have a stronger effect on empowerment than the

individual beliefs, in the first regression, the individual variables were entered first. This partialled the effects of the individual variables in order to determine if there was a contextual effect.

CONS entered the equation first and explained 36% of the variance in empowerment (Beta = .47). ASITOT (Beta = .29) and AGGPAS (Beta = -.30) also entered the equation. Of the second block, which included the group culture variable, GCONS failed to enter the equation. As shown in Table 7, the three individual variables combined to explain 45% of the variance in empowerment, with each of the variables making a statistically significant ($p < .05$) contribution to the regression equation.

A contextual or group effect is present if group-level variables account for a significant proportion of variation in the dependent variable after controlling for effects of the individual variables. In this equation, the group variable (GCONS) failed to demonstrate a contextual effect.

A second regression equation with the group variable entered before the individual variables permitted the evaluation of individual effects of organizational culture (Ferketich & Verran, 1992). In this analysis, GCONS was entered as the first block followed by the individual variables as the second block (see Table 8). GCONS entered the equation and explained 8% of the variance in empowerment. In the second block, CONS (Beta = .45) entered the equation first followed by ASITOT (Beta = .29) and AGGPAS (-.30) respectively. The individual variables explained an additional 37% of the variance in empowerment. However, after the individual variables entered the equation, GCONS was no longer a significant predictor of empowerment

Table 7. Contextual Regression Analysis with Individual Variables Controlled, Empowerment (KREI) Scores Regressed on RN Personal Characteristics, Perceptions of Organizational Culture, Connective Leadership and Group Perceptions of Organizational Culture						
Multiple R = .674 R Square = .454	df Regression 3 Residual 105				F = 29.08 Sig F = <.0001	
Explanatory Variables	Cum. R ²	R ² Change	Beta	T ^a	P	Simple r
BLOCK 1	.45	.45				
Organizational Culture (individual)						
CONS			.47	6.0	<.0001	.60
AGGPAS			-.30	-3.6	.0006	-.34
Connective Leadership						
ASITOT			.29	3.6	.0005	.25
Personal Characteristics						
Highest Educational Level			-.09	-1.18	.24	-.07
Years Practice			-.05	-.65	.52	-.07
Months in Current Pos.			.06	.87	.38	.10
Position (Resp. Level)			-.03	-.46	.66	.06
BLOCK 2	.45 ^b	0				
Organizational Culture (group)						
GCONS			.04	.46	.65	.29
^a Significance of each variable after all have entered the equation.						
^b Adjusted R ² = .44.						

Table 8. Contextual Regression Analysis with Group Variables Controlled, Empowerment (KREI) Scores Regressed on RN Personal Characteristics, Perceptions of Organizational Culture, Connective Leadership and Group Perceptions of Organizational Culture						
Multiple R = .674	df				F = 21.7	
R Square = .454	Regression 4				Sig F = <.0001	
	Residual 104					
Explanatory Variables	Cum. R ²	R ² Change	Beta	T ^a	P	Simple r
BLOCK 1	.08	.08				
Organizational Culture (group)						
GCONS			.04	.46	.65	.29
BLOCK 2	.45	.37				
Organizational Culture (ind)						
CONS			.45	5.3	<.0001	.60
AGGPAS			-.30	-3.5	.0006	-.34
Connective Leadership						
ASITOT			.29	3.6	.0005	.25
Personal Characteristics						
Highest Educational Level			-.09	-1.20	.23	-.06
Years Practice			-.04	-.58	.57	-.07
Months in Current Pos.			.06	.84	.40	.10
Position (resp. level)			-.04	-.55	.59	.06
^a Significance of each variable after all have entered the equation.						
^b Adjusted R ² = .43.						

($p = .65$). This confirmed that although there was a modest contextual effect, the majority of the variance in empowerment was attributable to the individual variables after controlling for group effects.

As reported earlier, the condition index for the GCONS variable suggested potential multicollinearity problems. Since the GCONS variable was no longer a significant predictor after the individual variables entered the equation, this variable was dropped from the model and the collinearity issue was no longer of concern.

Jackknife Analysis. To assess the consistency and stability of the regression results, jackknife analysis was performed. Due to the small sample size, it was not considered viable to hold back part of the sample for cross-validation purposes. Jackknife analysis provided a replication method within the context of the single study conducted here (Prescott, 1987).

Therefore, regression analysis was performed on eight separate computer-generated random samples drawn from the original sample. Each sample consisted of approximately 85% of the original sample. Sample sizes ranged from $N=86$ to $N=101$. With each of these samples, empowerment was regressed on constructive culture, defensive culture, and connective leadership using stepwise entry of the variables.

In seven of the eight samples, the same variables as in the original equation entered (see Table 9). The individual variables explained from 42% to 55% of the variance in empowerment. The adjusted R squares for these equations ranged from .41 ($n=98$) to .54 ($N=86$). In one of the samples, the

Table 9. Results of Jackknife Analysis

Predictor Variable	Current Sample (n=113)	Sample 1 (n=98)	Sample 2* (n=96)	Sample 3* (n=98)	Sample 4* (n=96)	Sample 5 (n=86)	Sample 6* (n=97)	Sample 7 (n=101)	Sample 8* (n=95)
CONS (Betas)	.47	.65	.49	.52	.45	.60	.46	.47	.50
ASI TOT (Betas)	.29	--	.27	.18	.27	.29	.28	.31	.28
AGGPAS (Betas)	.30	--	-.31	-.26	-.33	-.19	-.31	-.30	-.32
R Square	.45	.42	.49	.43	.46	.55	.46	.48	.49
Adjusted R ²	.44	.41	.46	.42	.44	.54	.44	.46	.48
Shrinkage	1%	1%	2.7%	1.8%	2%	1.6%	2%	2%	1.7%

* In these samples AGGPAS entered the equation before ASI TOT.

only variable to enter was the constructive culture variable capturing 42% of the variance in empowerment.

Based on the examination of the direction and magnitude of the beta weights of consistent predictors (see Table 9), the individual variables (CONS, ASITOTAL, AGGPAS) were highly stable predictors of empowerment appearing in the original equation and in the equations of seven out of eight additional random samples drawn from the original sample. The lower the variable to subject ratio, the less the betas are likely to fluctuate from sample to sample (Waltz & Bausell, 1981).

An additional assessment of stability can be obtained by examining the expected shrinkage which is the decrease in explained variance from any one of the samples to the true population value (Prescott, 1987). Shrinkage is obtained by subtracting the adjusted R square from the obtained R square. In all of the above equations and in the original equation, the shrinkage ranged from 1% to 2.7%. The combined results of the jackknife analysis and shrinkage assessment suggested that the results obtained in this study were consistent and stable.

Commonality Analysis. To determine the unique contribution of each of the predictor variables to the explanation of the variance in empowerment, commonality analysis was performed. The unique contribution of a predictor variable is defined as the variance attributed to it when it is entered last in the regression equation (Waltz & Bausell, 1981). When commonality analysis was performed, constructive organizational culture made the greatest unique

contribution (18%) followed by defensive culture (7%), and connective leadership (6%). The remaining 14% of the variance was shared in common by the predictor variables and could not be disentangled.

Revised Registered Nurse Empowerment Model. A revised explanatory model of registered nurse empowerment is depicted in Figure 3. Consistent with the results of the regression analysis, the contextual effects and personal characteristics of registered nurses have been deleted from the model with the exception of personal characteristics which demonstrated significant relationships to predictor variables. The shaded boxes represent the variables that were significant predictors of the criterion variable, empowerment, with the corresponding correlation coefficients, beta weights, and significance levels for each predictor. The two personal characteristic variables that had significant correlations to the connective leadership predictor variable are included with their corresponding correlation coefficients and significance levels.

Post Hoc Analyses

Cascading Effects of Connective Leadership and Empowerment. A cascading effect has previously been reported for Transformational Leadership in both nursing (McDaniel & Wolf, 1992) and non-nursing studies (Bass, Waldman, Avolio, & Bibb, 1987). This phenomenon is exhibited by the highest leadership scores occurring among the top echelon of administrators with slightly decreasing scores at each lower level. McDaniel and Wolf suggested that this is evidence of shared leadership. To determine if connective leadership had a similar cascading effect, the mean connective leadership

Figure 3. Revised Explanatory Model of Registered Nurse Empowerment

score for each position level of responsibility was examined. Because of the small numbers in some of the position levels of responsibility in this sample, these results are provided for descriptive purposes only. Additionally, the higher levels of responsibility were collapsed into one group ($N=58$) and compared to the staff nurse group ($N=55$). A t-test for independent samples indicated that the mean connective leadership score for the nurses in positions of greater responsibility (206.3) was significantly higher ($p=.017$) than the mean for the staff nurses (189.2). To better assess the cascading effects of connective leadership, an additional analysis was performed by collapsing the top three position levels into one group ($N=19$) and comparing to the staff nurse group ($N=55$) and the charge nurse group ($N=36$). An analysis of variance was performed to detect differences in connective leadership among these three groups. The three groups were significantly different ($p=.006$). The Student-Newman-Keuls test confirmed that the group with the highest level of responsibility (mean = 221) was significantly different ($p<.05$) than the other two groups. Although the staff nurse group (mean = 189) and the charge nurse group (mean = 196) were not significantly different, the mean scores were in the direction predicted by the cascading effect. These results, taken together, suggested that connective leadership indeed had a cascading effect in this sample.

A similar analysis was performed for the empowerment scores at each level (see Table 10). It appeared that empowerment had a similar cascading effect in this sample. The position variable was collapsed into two groups as

Table 10. Cascading Effects of Connective Leadership
and Empowerment

Position Level	ASITOT	KREI
5 (n = 1)	5.31	98.0
4 (n = 4)*	5.12	95.5
3 (n = 14)*	4.83	92.5
2 (n = 36)	4.38	89.6
1 (n = 55)	4.20	87.8

* Non-nursing department employees deleted from analysis.

described above to determine differences between the two groups on empowerment. Although the mean empowerment score for the nurses in positions of greater responsibility (90.2) was higher than for the staff nurses (87.8), the difference was not statistically significant. An ANOVA comparing the three groups as described above also failed to demonstrate significant differences among the groups on empowerment. However, the mean empowerment scores (93, 90, 88) were in the predicted direction for cascading effects.

Self-Report Data Analysis. Additional tests were performed to evaluate the confidence that could be placed in the self-report data in this sample. The participants were given the option of including a self-identifying code when they returned their packets which would allow them to obtain a personal leadership profile at the end of the study. Self-identifying codes were used so the anonymity of participants could be maintained. The participants did not know which data collection instruments comprised the leadership profile. Therefore, it was assumed that the individuals who wanted to obtain feedback about themselves (N=83, 73%) would respond as honestly as possible to all of the instruments.

To determine if the respondents requesting feedback were different from those not desiring feedback, t-tests for independent samples were performed on empowerment, connective leadership, and the three culture types. There were no significant differences between the feedback versus the nonfeedback group. Therefore, it is hoped that everyone used the same care in completing

the instrument packets. Even though not significant, the empowerment scores for the two different groups are worth noting. The feedback group had a mean score of 90.6 (SD 14.8) while the non-feedback group had a mean score of 84.8 (SD 15.5). This suggested that empowered nurses were more likely to desire information which could be used for personal growth and advancement.

Another set of t-tests was performed to determine if there was a difference between early responders versus late responders. All those who returned their responses during the first month were considered early responders. All those responding during the last two months were considered late responders. The concern was that the late responders may only be returning their packets due to urging from their directors to participate. If this were the case, they might feel pressured to participate and possibly would not carefully and considerately respond to each item. Again, there were no significant differences between the two groups on empowerment, connective leadership, or culture scores.

Because the number of early responders was identical to the number who requested feedback, it was of interest to determine if these groups represented substantially the same people. A McNemar test was performed to compare the membership in the groups. The results showed that 63 of the individuals who desired feedback were also early responders, 20 individuals who desired feedback were late responders, 20 individuals who did not want feedback were early responders and 10 who did not want feedback were late

responders. Therefore, 76% of the early responders desired feedback and 67% of the late responders desired feedback.

As reported earlier, individuals working 8-hour day shifts were overrepresented and individuals working 12-hour night shifts were underrepresented in this sample. To assess for differences based on shift worked, those working 8-hour and 12-hour day shifts were combined in one group. All other shifts comprised the second group. Using T-tests for independent samples, there were no significant differences between groups on any of the culture types, on connective leadership or on empowerment.

Since nurses in positions of higher clinical and/or management responsibility were overrepresented in this sample, ANOVAs comparing the three position levels (positions 3, 4, and 5 collapsed into one group) were also performed on the three organizational culture types. There were no significant differences among the three groups in perception of organizational culture.

Additional Analyses for Connective Leadership. It was considered important to examine the relationships among the subscales of the ASI and the KREI since this study is the first to use a composite score on the ASI as a measure of connective leadership. As anticipated, collaborative relational and contributory relational achieving styles were positively related ($r=.19$ to $.38$, $p < .05$) to all KREI subscales and the total scale. The vicarious relational achieving style was related only to the synergy subscale ($r=.24$, $p < .05$) and the total scale ($r=.20$, $p < .05$). An expected finding was the positive relationship of some of the direct achieving styles to the KREI subscales and

total. In particular, the power direct subscale was moderately correlated ($r = .27$ to $.31$, $P < .01$) to the synergy and ownership subscales and to the total scale. However, the most puzzling findings were the low and/or negative correlations ($r = -.09$ to $.04$) of the instrumental achieving styles to empowerment.

Because the correlations of the ASI subscales and total to the subscales and total of empowerment and to the subscales and factor scores of organizational culture were not totally as expected, regression analyses were performed to assist with the interpretation of connective leadership. When empowerment (KREI) was regressed on all of the individual ASI subscales, the subscale representing the contributory relational achieving style (CONREL) entered the equation first (Beta = $.25$) and explained 11% of the variance in empowerment. The entrusting instrumental achieving style (ENTRINS) entered second (Beta = $-.34$) followed by the collaborative relational achieving style (COLLREL) (Beta = $.31$). These three predictors explained 19% of the variance in empowerment.

When constructive culture was regressed on the ASI subscales, the following achieving styles explained only 12% of the variance: social instrumental (SOCINS), ENTRINS, and CONREL. For the regression equation with the passive-defensive culture as the criterion variable, SOCINS, the power direct achieving style (PWRDIR), and ENTRINS were significant predictors explaining 18% of the variance. Finally, when aggressive-defensive culture was regressed on the ASI subscales, SOCINS was the only significant predictor and explained 14% of the variance.

After noting that only two of the relational subscales and one of the instrumental subscales contributed to the explanation of empowerment, the connective leadership scores by factor (DIRECT, RELATE, INSTRU) were included in the regression equation instead of the total ASI score. As expected, the RELATE factor was the only ASI factor to enter the equation. Other than that difference, all other variables in the equation remained the same as previous equations. However, with RELATE in the equation, the explained variance increased 3% to .48 (R square).

The next analysis was performed using the three ASI subscales (COLLREL, CONREL, ENTRINS) that explained 19% of the variance in empowerment. Empowerment was regressed on those three variables, and the two culture variables (CONS, AGGPAS). COLLREL entered the equation second after CONS and then exited the equation after CONREL entered. To determine if multicollinearity may be a problem, COLLREL was regressed on the other predictor variables. The R square was .64 with CONREL explaining 52% of the variance in COLLREL. Therefore, this variable was summed to create a combined variable. With the combined variable in the equation, 50% of the variance in empowerment was explained.

A final analysis was performed to determine if connective leadership in the leaders helped to explain empowerment in their staff. Because the department directors and chief nurse executive had unique positions, it was possible to link their connective leadership score with the individuals who reported to them. Because not all department directors returned responses,

two units had to be eliminated from the analysis for a remaining sample of 71. Regression analysis was repeated as previously described. However, with this analysis, leader connective leadership (LCL) was included as one of the variables. Even though LCL failed to enter the equation, the results for this subsample are informative. As with the total sample, the same variables entered in corresponding order. However, in this subsample, 57% of the variance in empowerment was explained as compared to 45% in the total sample. The empowerment score for this group (91) was slightly higher than the score for the overall sample (89).

Summary

This chapter presented the results of the data analysis for this study including data reduction, data aggregation, and contextual regression analysis to answer the research question. Post hoc analyses which were conducted to facilitate the interpretation of the data were described. A residual analysis and results of tests of assumptions for statistical procedures were also discussed. Possible explanations and implications of all findings will be discussed in Chapter 5.

Chapter 5

Discussion

The purpose of this study was to test an explanatory model of registered nurse empowerment and to explore the relationships among the variables in the model. The conceptual framework underlying the model posited that registered nurse characteristics, individual perceptions of organizational culture, contextual (group) effects of organizational culture, and connective leadership were predictive of empowerment in registered nurses. In addition, it was proposed that specific relationships existed between dyads of variables in the model.

Although the number of variables entering the regression equation for empowerment was limited, and the total proportion of variation in empowerment explained by the variables was moderate, the results of the study provide some new insights, confirm several previously hypothesized relationships, and suggest new avenues for future research and model development. Chapter 5 includes a discussion of the results of the investigation, comparison to previous studies, analysis of unexpected findings, suggestions for further study, and implications for nursing education, practice, theory development and research.

Interpretation of Model Testing

Bivariate Relationships. Consistent with the findings of Kratina (1990)

and Stratton (1990), none of the personal characteristics of the registered nurses were related to the organizational culture types. However, as predicted, highest educational level and position of clinical and/or management responsibility were moderately related to connective leadership. It seems logical that those with more educational and experiential background would be most comfortable utilizing diverse leadership styles in their work. These findings are consistent with Harrison and Roth's (1987) study in which chief nurse executive age and experience were positively related to actual and/or preferred involvement in decision making.

Contextual Regression Analysis. The contextual regression analysis demonstrated an extremely small and insignificant contextual effect for the constructive organizational culture variable. The defensive culture variable could not be aggregated since analysis indicated this variable did not represent shared perceptions at the unit level. Previous studies have demonstrated that the environment in which nurses work can influence their empowerment (Chandler, 1991; Keller, 1991; Stratton, 1990). However, with the variables in this model, the individual effects were far more powerful than the group effects. It may be that there are other important group variables which were not included in this analysis but remain to be identified.

Low between group variance may explain the small contextual effect in this sample. Even though the eta-squared coefficient (.18) for the constructive culture variable was within the acceptable range for aggregation based on previous research, the between-group variance was very small in comparison

to within-group variance. Additionally, it was not possible to aggregate the variables for the defensive cultures due to low between-group variance. Cooke and Szumal (1993) explain that within group agreement regarding norms depends partly on the degree to which respondents are similar in terms of positional and demographic factors. In this sample, the unit composites represented individuals at three organizational levels with a range of personal characteristics represented.

Another explanation for the low between group variance may be that the culture for the nursing department as a whole is sufficiently strong that there is very little variance between units. When the culture scores are graphed on the OCI circumplex by unit, there is very little difference between the culture patterns of the nursing units. The one exception is a small (N=3) department which does not report to the chief nurse executive. The profile for this department, for the defensive culture types in particular, is very different from the other units. Because of the size of the department, it was not feasible to perform additional analyses to confirm the differences. However, the profile for this department suggested that there may be significant differences between nursing and other departments in this organization.

The measure for organizational culture (OCI) may have created an additional problem for assessing contextual effects at the nursing unit level. The instructions for the OCI direct the respondent to complete each item in relationship to "what it takes for you and people like yourself (e.g., your co-workers, people in similar positions) to 'fit in' and meet expectations in your

organization" (Cooke & Lafferty, 1989, p. 2). Based on those instructions, the respondent is using an organizational referent as opposed to a unit or departmental referent (Forbes & Taunton, 1994). While these directions would have been appropriate for a multisite study with many different organizations included in the sample, aggregating to the organizational level is not possible in this single-site study. Perhaps, had instructions asked respondents to consider only those working on their own nursing unit, between-group variance may have increased and it may have been possible to assess contextual effects at the group level.

Revised Reciprocal Empowerment Model. None of the personal characteristics of the registered nurses in this sample contributed to the explanation of empowerment. Low variability in highest educational level, years experience, and position may have depressed correlations and prevented entry into the equation. However, months in current position, which had greater variability than the other personal characteristic variables, still failed to contribute to the explanation of empowerment. As previously noted, this variable may be truncated due to the short length of time that the organization has been in existence.

In this investigation, perception of constructive organizational culture, defensive culture, and connective leadership emerged as a constellation associated with empowerment (see Figure 3). Of these variables, measured and analyzed at the individual level, registered nurses were more likely to be empowered if they perceived high levels of constructive culture, low levels of

defensive culture, and if they were connective leaders. These findings are consistent with Kratina's (1990) study which demonstrated that innovative and supportive cultures were strongly correlated to job satisfaction and decreased turnover. Kramer and Schmalenberg's (1993) work with magnet hospitals also confirmed that cultures that emphasize self-determination and collaboration over competition and meritocracy promote empowerment.

Commonality analysis revealed the relative importance of each of the predictor variables with constructive culture, which explained 18% of the unique variance in empowerment, representing the most potent predictor. Strong constructive cultures as predictive of empowerment is in agreement with other studies which demonstrated a positive relationship between constructive cultures and role clarity, satisfaction and propensity to stay (McDaniel & Stumpf, 1993; Rousseau, 1990), and perceived quality of care (Shortell et al., 1991). While some of the regression results were not as expected, consistent findings across repeated random samples drawn from the original sample add strength to the conclusions drawn from this study.

Post Hoc Findings

In contrast to previous studies where higher-order needs (constructive culture styles) characterized individuals at higher organizational levels and security needs (defensive culture types) characterized those at lower levels (Cooke & Rousseau, 1983), in the current study, there was no significant difference in perception of culture based on position level. However, there was less variation in the current sample considering the participants were all

registered nurses. The previous studies had broader representation from various occupational levels. For example, in an analysis of variance by level within the Federal Aviation Administration (FAA) respondents included: air traffic controllers (N=717), supervisors (N=196) and top managers (N=42) (Cooke & Rousseau, 1988). Consistently, differences across levels were significant ($p < .001$). Constructive culture styles increased with hierarchical level while mean scores on the defensive styles decreased with level. The investigators suggested that the results indicated that norms within the FAA were subcultural and hierarchical, as would be expected in a control-oriented organization. This is in contrast to a professional nursing department which is highly decentralized.

Nevertheless, this finding is also in contrast to McDaniel and Stumpf's (1993) results which demonstrated that the nurse managers' organizational culture scores were closer to the ideal than the staff nurses' scores. Perhaps, the hospitals included in their sample were more hierarchical and bureaucratic than in the current study. The current findings also conflict with those of Thomas et al. (1990) which demonstrated higher scores for managers on the aggressive/defensive styles which placed the managers further from the ideal on these cultural styles. Thomas and colleagues suggested that the managers may be shielding staff nurses from some work pressures similar to a previously reported "buffering concept" (Smith & Mitry, 1984). In the current study, the aggressive/defensive scores are almost identical for the staff nurses and the nurses in positions with greater clinical and/or management responsibility.

Perhaps, the inclusion of more clinically-oriented nurses (clinical nurse specialists, case managers, educators, preceptors, nurse coordinators) in this group skewed the results. However, the majority of the nurses in this group had management responsibilities (charge nurses, supervisors, directors) and the buffering effect was not apparent in this sample.

Thomas et al. (1990) also found that there were differences in culture scores based on shift worked. In their sample, day-shift nurses reported culture scores closer to the ideal than other shifts. The authors attributed these results to the presence of more nursing administrators during the day with increased opportunities for communication and feedback. The current study did not confirm this finding. In fact, in contrast to the previous reported finding, the night shift culture scores were slightly higher on all of the constructive styles and lower on most of the defensive styles. Perhaps, this organization has been successful in establishing a 24-hour management presence with effective mechanisms to facilitate communication on all shifts. This would also help to explain why empowerment scores were not lower for the night-shift as might be expected based on Pearlin's (1961) early nursing study in which lack of access to supervisors contributed to work alienation.

The findings in relationship to the connective leadership measure were both puzzling and enlightening. As expected, there was evidence of cascading levels of connective leadership in this sample. These findings parallel those of McDaniel and Wolf (1992) and lend empirical support to Lipman-Blumen's (1994) assumption that connective leaders bring many others into the

leadership process. McDaniel and Wolf asserted that nurse executives are at the top of their organizations and set the tone for the departments under their jurisdiction. The connective leadership scores of the chief nurse executive, directors, and other levels of responsibility reflected the flow of shared leadership throughout this nursing organization.

However, when examining the correlations between the subscales of the ASI-Form 13 and the KREI, some unusual relationships or lack of relationships between the measures of connective leadership and empowerment were evident. Although the composite score for the total ASI scale was used in the current study, connective leaders should have high access to all achieving styles and thus demonstrate high scores on most of the subscales. Therefore, a comparison of the individual achieving styles to the empowerment measure was considered appropriate.

First, none of the instrumental achieving styles were significantly related to empowerment. All of the correlations were extremely low (.02 to .17) and some were in the opposite direction than had been hypothesized (-.01 to .09).

The most surprising finding in this group was with the entrusting instrumental subscale. The entrusting instrumental achieving style is even described as "empowering" (Lipman-Blumen, 1994). However, it had a negative correlation (-.07) with empowerment and a negative beta (-.34) when empowerment was regressed on all of the individual achieving styles. According to Lipman-Blumen (personal communication, 1/18/94), connective leaders should score higher on the instrumental styles than traditional leaders.

If indeed connective leadership is an empowering type of leadership, one would expect the instrumental achieving styles to be highly correlated to empowerment.

Perhaps, the instrumental achieving styles were viewed as manipulative by this sample as has been the case in previous work with the Achieving Styles Inventory. The label for the instrumental achieving styles was in fact changed to "interactive" for the past two years because of the potential negative connotation of instrumental as using the self and others as instruments for accomplishing goals. However, due to the importance of being able to use these styles to achieve organizational and societal goals, the instrumental label was recently restored (personal communication, J. Lipman-Blumen, 2/5/95).

Another study with a nursing sample revealed that nurses sometimes believe managers use "empowerment" as a means of dumping work they do not want to do on their staff (Klakovich, 1993). Clark (1989) conceptualized decision-making as a collaborative process with shared goals. Leaders must enhance the individual's desire for empowerment without abandoning them. The entrusting achieving style, which is characterized by relying on others to accomplish the **leader's** vision, may be the problem with entrusting leadership. The follower may feel abandoned or "dumped on" when there is not enough opportunity for followers to contribute to a shared vision. "Leaders empower when they invite staff members to share their dreams and actively involve them in setting lofty organizational goals" (Tyrell, 1994, p. 92).

Of course, for the entire sample, the correlations between empowerment and connective leadership were based on the individual's perceived personal connective leadership and empowerment. To determine if the leader's connective leadership was related to the follower's empowerment, the smaller sample ($N=71$) in which the leaders and followers could be matched must be examined. In this sample, empowerment and connective leadership still failed to demonstrate the expected relationship. In fact, the leader connective leadership score was significantly negatively correlated to empowerment ($r=-.23$, $p=.03$) and failed to enter the equation when empowerment was regressed on this variable and the other variables in the model.

Additional concern arose when examining the correlations between the connective leadership measure and the organizational culture measure. Based on the conceptualization of connective leadership (Lipman-Blumen, 1994), it was predicted that it would be positively related to constructive culture styles and negatively related to defensive culture styles. A few of the positive correlations between the constructive styles and the achieving styles were significant. However, the total score for the ASI was not significantly related to the constructive styles but instead was significantly positively related to all of the defensive styles. This is of particular concern since the total score for the ASI was used to reflect connective leadership.

This raised the question of whether the total score for the ASI-Form 13 adequately operationalized connective leadership. When regressions were performed using the three major achieving style domain scores as predictor

variables for empowerment, the relational domain score was the only one to enter the equation. Similarly, the combined score for the contributory and collaborative relational styles entered the equation in another regression. The contributory relational achieving style was the only achieving style to be positively related ($r=.20$, $p=.03$) to constructive culture. However, the relationship of the contributory relational style to the defensive cultures was even stronger (.22, .25).

Lipman-Blumen (1994) posited that connective leadership is what is needed to be successful in today's global environment. Yet, in this study, it was correlated most strongly to cultures which previous research have demonstrated to produce negative outcomes (Rousseau, 1990; Shortell et al., 1990). Given these contradictory findings, this investigator wonders if the true essence of connective leadership was captured by the measure used in this study.

An alternative explanation is that individuals perceive the organization through the lenses of their achieving styles. For example, an individual who scores high on the collaborative relational achieving style may be harder on the organization when responding to the constructive subscales than someone who is low on that dimension. Additionally, Lipman-Blumen cautioned against combining the achieving styles into domain scores which represent the three major achieving styles since differences among the achieving styles may be "washed out" by doing this (personal communication, 2/5/95). Therefore, any of the results incorporating domain scores must be interpreted with this proviso.

Limitations

Internal Validity. Several threats to internal validity or "linking power" need to be addressed (Krathwohl, 1989). In terms of translation fidelity, several concerns arose in the course of data analysis. Although the OCI has known psychometric properties and was appropriate to the population and to the conceptualization of organizational culture in the model, the misspecification problem (using an organizational referent in the directions when a group level effect was being assessed) may have led to the data aggregation problems experienced.

Similarly, the ASI-Form 13 is a well-established instrument with excellent psychometric properties and a wealth of normed data for comparison purposes. However, the ASI has not previously been used to measure connective leadership. Even though the connective leadership model evolved from the achieving styles model on which the instrument is based (Lipman-Blumen, 1994), the construct validity of the ASI as a measure for connective leadership has not been established. The preliminary results obtained in this study, which must be regarded as tentative given the small and highly homogeneous sample, suggested that additional psychometric work needs to be done to validate a measure for connective leadership. Work is currently being done to revise the instrumental achieving styles subscales because of concern with misinterpretation of some of the items (personal communication, J. Lipman-Blumen, 2/5/95).

The results of this study supported the construct validity of the KREI as a measure of empowerment. However, the instability of the factor structure from the pilot study to the current study suggested the need for further refinement of the instrument.

All of the instruments used self-report data. Self-report perceptions may not represent actual leadership behaviors or correspond to actual experiences and so must be viewed with caution. Moreover, self-report measures are susceptible to common method variance. Future researchers are advised to use multimethod operationalizations where possible (e.g., personnel records, peer/supervisory ratings).

In terms of rival explanations, other unknown influences in the respondent's background or in the organization could have affected the empowerment variable. For example, extremely difficult budget deliberations were ongoing during the data collection period. Issues such as decreased tuition reimbursement and a potential layoff of nursing staff were likely known to the staff. It was not possible to control for this type of extraneous variable. However, the comparison of early to late responders did not demonstrate differences between the two groups on the major variables in the model.

The cross-sectional nature of the data collected limits the ability to suggest time ordering for the variables. While the present approach is justified by the nature of this study, future studies should utilize a within-subject longitudinal approach. This would entail tracking organizational members

through several years of their jobs which would yield additional information regarding the sequencing and interaction of variables (Ashforth, 1989).

External Validity. Krathwohl (1989) extended the traditional definition of external validity to encompass "generalizing power." The explanation of generality in this study is limited to the field of nursing and to one unique organization. At the outset of the data collection for this study, the hospital had only been in operation for approximately 3 1/2 years. Therefore, it is possible that not enough time had elapsed for the culture to be well established. Cooke and Rousseau (1988) acknowledged that new organizations or those undergoing rapid changes need not have an intense, well-defined culture.

Upon joining this new organization with no preexisting staff, the chief nurse executive was able to recruit and select her entire management team. Because of this, it is likely that there is more congruence in leadership practices among this team than might be found in other organizations. Nursing systems such as case management and quality improvement were designed and in place when the hospital opened. The hospital cares for extremely high acuity patients and has many unique specialty programs in place. Therefore, the results of this study cannot be generalized beyond this setting.

In fact, the findings should only be generalized from the sample to the total population with caution due to the potential for self-selection bias. With the 46% return rate, the large number of refusals may have biased the findings. As discussed in Chapter 3, registered nurses in positions of higher levels of

clinical and/or management responsibility were overrepresented in this sample.

Implications for Education

Educational reforms will be required to keep pace with health care reform. Empowerment cannot be furthered without educating leaders on the essential importance of joint decision-making and their responsibility to foster cultures in which information is shared and values clarified. Studies on leadership training report that leadership behaviors can be learned in leadership programs (Bass, 1985). Further work with this model should suggest specific behaviors, strategies and processes which facilitate the creation of a positive organizational culture and the empowerment of nursing staff. This information should be incorporated not only in nursing administration educational programs, but at all levels of professional nursing education. Continuing education programs for nurses at all levels should also address essential leadership training (O'Brien, Koller, Mahoney, Hooten, 1992).

Preparing nurses to function in a health care environment that requires empowered, autonomous individuals must begin with basic educational programs. The Registered Nurse Empowerment Model could be adapted to guide interactions between faculty and students. Others have stressed the need for empowerment as a process and outcome of nursing education (Chally, 1992; Hawks, 1992). Providing a constructive educational environment in conjunction with appropriate interactive leadership strategies should promote the empowerment of both students and faculty.

Implications for Professional Practice

Nursing administrators and consultants should find the guiding framework provided by the theoretical principles of the model in conjunction with the quantitative assessment tools employed in this study useful for building cultures and systems to facilitate empowerment. The KREI as a measure for empowerment could be used to guide an analysis of the nursing organization. For example, does the nursing department have mechanisms in place for the two-way flow of information throughout the department? The emergence of the synergy factor as the first and most important factor in terms of explaining variance in empowerment emphasizes the importance of the creation and communication of a shared vision. Redesigns of major magnitude can only occur with the full understanding and participation of nurses at all levels.

Organizations should give serious attention to their organizational culture when the following conditions occur: diversification opportunities, alterations in competitive strategy, rapid growth, serious conflicts between groups in the organization, and organizational retrenchment (Roussel, 1990). The health care industry is now confronting these conditions. Quantitative approaches to measuring organizational culture, such as the OCI, are practical tools for data-based change in organizations and can also be used for cross-organizational comparisons. For example, the OCI could provide a framework for discussing current behavioral expectations, identifying norms

that would be more conducive to empowerment, and proposing changes to communicate and reinforce the preferred norms (Cooke and Szumal, 1993).

As the largest contingent in the health care workforce, nursing departments must focus on the culture of their organization in order to design strategies to deal with these challenges. With the OCI, data can also be gathered for the purpose of cross-unit comparisons within organizations. Comparing those units with strong constructive cultures to those with weaker cultures should suggest effective strategies which can be translated to the other units. Cultural assessment is an important first step before implementing change and can be used to facilitate innovation at the nursing unit level (Van Ess Coeling & Simms, 1993).

The OCI generates data that can be understood, interpreted and used by organizational members for identifying the important aspects of their culture (Cooke & Szumal, 1993). Knowledge about the existing culture can be used to tailor the hiring of employees to "fit" with the organizational characteristics. The OCI also offers a means for assessing current nursing service programs so interventions and strategies can be developed to enhance the quality of nursing service and, in turn, patient outcomes (McDaniel & Stumpf, 1993). Scores on the OCI can be used to direct work redesign and to enhance the empowerment of nursing staff (Rizzo, Gilman & Mersmann, 1994). When actual scores are compared with the ideal, areas which should be targeted become apparent.

Results of this study may be used to guide intervention strategies to deal with disempowering situations or barriers to empowerment. Intervention studies based on these research findings could be designed which examine the impact of strategies addressing model variables. Findings could also be used to guide change projects involving organizational culture, work redesign, and shared governance.

With further study, the Registered Nurse Empowerment Model has the potential to be applied to any interactive process where there are perceived power differences between parties: leader/follower, teacher/student, nurse/patient, physician/nurse. For example, the model could be adapted for nurse/physician collaborative projects. Case management, quality improvement, and other innovative programs require cohesive working relationships between the nursing and medical staffs in order to ensure their effectiveness. The quantitative tools utilized in this study could be refined to tap the critical interaction and interdependence between nurses and physicians, as well as other disciplines, in the provision of quality patient care.

Currently, plans are underway to use this model as a framework for developing a collaborative research agenda for a university-based family nurse practitioner program. The model facilitates the integration of staff from the clinical agencies providing preceptorships for the students with the faculty in the development of a mutually beneficial program.

Implications for Theory Development

Rousseau (1985) argued for multi-level theories and research to synergistically increase knowledge through pattern recognition across levels. This requires theoretical specification and empirical confirmation of a hierarchy of levels. As Holzemer et al. asserted, "The effects of groups and environments on individuals are vital concerns" (1989, p. 125).

Accordingly, it is important to continue to explore possible contextual effects in addition to evaluating the impact of individual variables. The current study attempted to extend previous research by investigating the contextual effects of organizational culture in addition to individual perceptions. However, due to problems with data aggregation, it was not possible to determine if contextual effects were indeed of importance in this test of the model.

The model lends itself to a number of possible extensions. Meleis (1992) suggested that theory development in the 21st century will reflect the following principles: "A cooperative principle in health care that includes the health care team and health care clients as equal partners. . . . An empowerment principle that reflects a mission of health care to enable and mobilize internal and external healing resources" (p.117). The Registered Nurse Empowerment Model was designed around a process which entails a reciprocal relationship between leaders and followers within the context of the organizational culture which results in empowerment. Potentially, this model

could be expanded to address the enabling, cooperative relationship that must occur between health care providers and their clients.

While the model tested in this study depicted linear relationships among the variables, future research should evaluate the potential reciprocal relationships of some of the variables. For example, organizational behavior scholars suggest that organizational culture influences the leadership behaviors in an organization, and, in turn, the leaders form and shape the organizational culture (Hollander & Offermann, 1990; Peters & Waterman, 1982; Schein, 1992). Additionally, due to the nature of reciprocal empowerment, it is probably important to adapt the model to capture the empowering relationship between leader-follower dyads. These modifications would require the formulation of a nonrecursive causal model of empowerment.

Bandura (1986) discussed reciprocal causation and reciprocal determinism in his social cognitive theory. In this theory, persons reciprocally influence their own motivation and behavior "within a system of reciprocal causation involving personal determinants, action, and environmental factors. These sets of determinants affect each other bidirectionally" (p. 12). He calls this "triadic reciprocity in which behavior, cognitive and other personal factors, and environmental events all operate as interacting determinants of each other" (p.18). Reciprocal refers to the mutual action between causal factors. This has good fit with the conceptualization of reciprocal empowerment in the Registered Nurse Empowerment Model with its emphasis

on a high degree of interdependence and the importance of the environment (contextual influences).

However, reciprocity does not mean simultaneity (Bandura, 1986). Therefore, the model would need to be evaluated longitudinally to assess the time lags between causal events. "Intricate analysis of triadic reciprocity still awaits the tools for gauging how multiple reciprocal links of influence operate together and the time courses in which they operate. This is a formidable task not only because the triadic systems are interactive, but because each subsystem itself contains multiple reciprocal processes" (Bandura, 1986, p. 28).

Implications for Research

Scholars of nursing administration have stressed the need for comprehensive research programs linking organizational designs and contextual influences on nursing practices with patient outcomes (Henry, 1992; National Center for Nursing Research, 1992). Rousseau (1985) considers multi-level research of paramount importance in studies of organizational behavior. Future research in diverse settings is needed to fully investigate the impact of personal and organizational characteristics on empowerment.

Future research may look at different antecedents, mediators and outcomes. In nursing administration research, it is important to investigate the impact of study variables on patient care outcomes as the primary focus of the profession. For example, Stratton's (1990) methodology for linking empowerment to patient outcomes could be incorporated in future testing of

this model. The consequences of empowerment could also be expanded to include individual outcomes (job satisfaction, turnover) and organizational outcomes (performance, productivity).

Contextual effects of organizational culture could not be adequately assessed due to problems with data aggregation as discussed earlier. Future research using multiple settings and careful specification of measures to the appropriate level should provide the opportunity to assess the contextual effects of organizational culture.

As discussed in chapter 3, the KREI requires further refinement and additional psychometric testing. Further testing with the original 64-item instrument is recommended including factor analysis in a larger sample than in the pilot study. The factor structure should then be validated in additional samples before deleting items and finalizing the instrument. With future refinements, perhaps it would be helpful to have respondents rate how important each item is in addition to rating the presence of each item. Scores could be used to provide feedback for managers as suggested by Peter (1994) who demonstrated that survey feedback can be an effective tool for management education and change programs. With these modifications, it would be possible to design intervention strategies based on the results of the survey.

Nursing administration researchers at the University of Iowa have formulated a "suitcase methodology" to facilitate the conduct of complex, multisite studies (McCloskey et al., 1994, p. 41). They have collected over 300

instruments which may be used to evaluate management innovations. With further refinement, perhaps the KREI could be added to the "suitcase" for use in future research.

The organization that participated in this study was selected based on the investigator's prior knowledge of the nursing department possessing characteristics believed to facilitate empowerment (Havens & Mills, 1992; Schmieding, 1993). Future research should ascertain the generalizability of the model to other nursing departments and organizational settings by testing the model in organizations with a wide range of variability in presence of empowerment characteristics.

Conclusion

With organizations streamlining, eliminating middle management positions, facing cost constraints and healthcare reform, increased power and responsibility are being disseminated to staff nurses. All types of organizational settings and levels within organizations need empowered nurses. With healthcare reform, as nurses assume new roles in different practice arenas, they will need to both exhibit and be nurtured by strong caring leadership. Nurses must be able to deal proactively with rapid change. This requires shared leadership and mechanisms to facilitate shared decision making. This study corroborated findings of previous research and substantiated the importance of cultural analyses for nursing services.

In the context of increased competition and rapid change in the arena of health care delivery, there is valid reason for concern with empowerment.

Looking at the future of nursing in a competitive health care environment and at nursing's future roles in the delivery of health care, future success of the nursing profession at meeting the health care needs of our nation's citizens may well depend on empowerment.

In 1989, Meleis and Jennings convincingly argued for the development of nursing administration models that can be utilized in research, practice, and education. This study focused on the formulation and preliminary testing of a model designed to contribute to theory development for nursing administration. Hopefully, further theoretical development, empirical testing, and refinement of the model will make it useful for research, practice, and education.

Empowerment requires sensitivity to the different contexts within which it is expressed (Clark 1989). Empowerment does not equal total independence. Nursing needs to maintain a balance of interconnectedness and interdependence within the profession and with other professional disciplines.

The refined empowerment model should prove useful for identifying and targeting areas requiring organizational change in order to keep pace with the rapid and radical ongoing changes impinging on the nursing profession in today's healthcare environment and into the 21st century. It is proposed that, with further refinement, this model can be applied to add to the continued viability and future expanded potential for nursing in the arena of healthcare delivery in the ongoing context of healthcare reform.

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A P P E N D I C E S

APPENDIX A

Sample Items for each Factor by subscale on the
Organizational Culture Inventory (OCI)

OCI Factors/Subscales	Sample Test Items
<u>Constructive Cultures:</u> Achievement (ACH) Self-Actualizing (SACT) Humanistic-Encouraging (HENC) Affiliative (AFF)	<p>Indicate the extent to which people in your organization are expected to:</p> <ul style="list-style-type: none"> - pursue a standard of excellence - openly show enthusiasm - think in unique and independent ways - do even simple tasks well - help others to grow and develop - take time with people - deal with others in a friendly way - share feelings and thoughts
<u>Passive-Defensive Culture:</u> Approval (APP) Conventional (CON) Dependent (DEP) Avoidance (AVO)	<ul style="list-style-type: none"> - make sure people accept you - "go along" with others - always follow policies and practices - fit into the "mold" - please those in positions of authority - do what is expected - wait for others to act first - take few chances

OCI Factors/Subscales	Sample Test Items
<u>Aggressive-Defensive Culture:</u> Oppositional (OPP) Power (POW) Competitive (COMP) Perfectionistic (PER)	 - point out flaws - be hard to impress - build up one's power base - motivate others any way necessary - turn the job into a contest - never appear to lose - do things perfectly - keep on top of everything

Source: Cooke & Rousseau (1988).

APPENDIX B

Sample Items for each Domain by subscale on the
Achieving Styles Inventory - Form 13 (ASI)

ASI Domains/Subscales	Sample Test Items
	Fill in the bubble that best describes your behavior. (1 = Never, 7 = Always)
<u>Direct</u>	
Intrinsic Direct (INT DIR)	<p>More than anything else, I like to take on a challenging task.</p> <p>For me, the greatest satisfaction comes from breaking through to the solution of a new problem.</p>
Competitive Direct (COMP DIR)	<p>Winning in competition is the most thrilling thing I can imagine.</p> <p>I select competitive situations because I do better when I compete.</p>
Power Direct (POW DIR)	<p>I seek out leadership positions.</p> <p>I want to take charge when working with others.</p>
<u>Instrumental</u>	
Personal Instrumental (PERS INS)	<p>I strive to achieve in order to gain recognition.</p> <p>I try to be successful at what I do so that I will be respected.</p>

ASI Domains/Subscales	Sample Test Items
Social Instrumental (SOC INS)	<p>I establish some relationships for the benefits they bring.</p> <p>I establish a relationship with one person in order to get to know others.</p>
Entrusting Instrumental (ENTRINS)	<p>When I encounter a difficult problem, I go for help.</p> <p>I look for support from others when undertaking a new task.</p>
<u>Relational</u>	
Collaborative Relational (COLL REL)	<p>Faced with a task, I prefer a team approach to an individual one.</p> <p>My best achievements come from working with others.</p>
Contributory Relational (CON REL)	<p>I achieve my goals through contributing to the success of others.</p> <p>My ways of achieving is by helping others to learn how to get what they want.</p>
Vicarious Relational (VIC REL)	<p>When a loved one succeeds, I also have a sense of accomplishment although I make no direct contribution.</p> <p>I feel the successes or failures of those close to me as if they were my own.</p>

Source: Lipman-Blumen, J. (1991).

APPENDIX C

Sample Items for each Subscale on the
Klakovich Reciprocal Empowerment Inventory (KREI)

KREI Subscales	Sample Test Items
	Circle the response that indicates to what extent the following statements are true for your practice. (1 = Not at all true, 5 = Extremely true)
<u>Reciprocity:</u>	<p>My leader communicates clear, consistent expectations.</p> <p>My leader uses my recommendations.</p> <p>All of the communication is one-way: from the leader down.*</p>
<u>Synergy:</u>	<p>I can assist to remove barriers to implementation of the vision.</p> <p>What I do in my job really impacts the direction of the organization as a whole.</p> <p>The vision gives me a sense of purpose.</p>
<u>Ownership:</u>	<p>I do extra things that aren't just part of my job because I care.</p> <p>If I see something wrong, I do something about it.</p> <p>I get a feeling of pride from the work I do.</p>
* Indicates reverse scoring.	

Source: Klakovich, M. D. (1994b).

APPENDIX D

Demographic Profile

Please answer each question.

1. On what nursing unit do you work? _____
_____ If you are a staff nurse working on more than one unit, please list the unit that you work the majority of the time.
If you are in a management or clinical position responsible for more than one unit, please list all units you are responsible for.
2. What is your age? _____
3. What is your gender? _____ Female _____ Male
4. What was your original nursing educational degree?
_____ AD Nursing
_____ Diploma
_____ BSN
5. What is the highest level of educational degree you have attained?
_____ AD Nursing
_____ Diploma
_____ BSN
_____ BA/BS (other): What field? _____
_____ Master's nursing
_____ Master's (other): What field? _____
_____ Doctorate: What field? _____
6. What is your length of employment at this hospital?
_____ years _____ months
7. How many years total have you worked full/part time as an RN?
_____ years _____ months
8. How many years have you been in your current position?
_____ years _____ months

9. What shift do you work over 50% of the time?

☐ days ☐ evenings ☐ nights

☐ 8 hour ☐ 12 hour

☐ other (specify) _____

10. How many hours per two week pay period do you work?
(excluding overtime) _____ hours

11. What is your primary ethnic identify?

☐ American Indian

☐ Asian

☐ Caucasian

☐ Black

☐ Hispanic

Other (please specify) _____

12. What best describes your current position?

☐ RN Staff

☐ Case Manager

☐ Charge Nurse

☐ Clinical Nurse Specialist

☐ Crisis Nurse

☐ Department Director

☐ Educator

☐ Nurse Coordinator

☐ Nursing Administrative Supervisor

☐ Preceptor

Other _____

IF YOU WOULD LIKE A COPY OF YOUR PERSONAL LEADERSHIP PROFILE AT THE END OF THE STUDY, PLEASE RECORD YOUR SELF-IDENTIFYING 5-DIGIT ALPHANUMERIC CODE BELOW:

AFTER COMPLETING ALL SURVEYS, PLEASE FOLD IN HALF, PLACE IN POSTAGE-PAID ENVELOPE, AND MAIL.

THANK YOU !!!!!

APPENDIX E

Informed Consent/Introduction Letter

Dear Colleague,

In health care and in nursing, we are all faced with major change. I am an RN employed in nursing education and also a doctoral student at the University of San Diego School of Nursing. As part of my doctoral work, I am completing a study to determine the organizational, leadership, and personal characteristics of registered nurses that contribute to both the individual's and the organization's ability to more effectively deal with change. Your participation in this study is essential for its success and I would greatly appreciate your help.

Your name has been selected from a list of nursing personnel at (name of hospital) because you have worked here at least 6 months and work a minimum of approximately 16 hours per week. I am aware of how limited your time is, and the enclosed survey has been kept as brief as possible. It should take no more than 30 minutes to complete. You will not incur any costs during the study. There are no anticipated risks to study participants. Possible benefits of participation include an increased understanding of the organizational culture and leadership strategies in your nursing department.

All information you provide will be totally anonymous and kept confidential. Your hospital will not receive any information as to whether or not you participated in this study. Data will not be coded with an identification number until return of the survey. Data from this study will be analyzed and published only in group form. An addressed, stamped envelope has been attached so that the survey is returned directly to me.

There are no other agreements, written or verbal, related to this study beyond that expressed in this letter.

Please complete the questionnaires and return them to me by (date). Your completion of the questionnaires will indicate that you have read and understand the above information and give consent to participate.

Should you have any questions, please feel free to phone me at (XXX) XXX-XXXX.

With appreciation for your time, effort, and help,

Sincerely,

Marilyn D. Klakovich