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An empirical test of the work design moderators of the personal and work outcomes of a professional nursing practice in acute care organizations

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AN EMPIRICAL TEST OF THE WORK DESIGN MODERATORS OF THE PERSONAL AND WORK OUTCOMES OF A PROFESSIONAL NURSING PRACTICE IN ACUTE CARE ORGANIZATIONS

by

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Theory-generated work design strategies are not currently guiding the conceptualization of practice models, the implementation of organizational interventions which support them or the examination of outcomes such as motivation, satisfaction, quality and performance the professional nurse at the individual or unit-level. A correlational survey design was used to empirically test a theoretical extension of the Job Characteristics Model. During the one month data collection period, 244 professional nurses working on 12 medical-surgical nursing units in three acute care settings were asked to respond to the Job Diagnostic Survey, Brenner Professional Identity Index, Organizational Culture Inventory, Nurse's Perception of Quality Scale and a Demographic Data Form. Unit level quality and productivity data was also retrieved for the same one month period. A response rate of 44% (n=107) yielded 101 usable surveys for inclusion in the multiple regression analyses. Survey as well as unit-level data were not normally distributed, therefore Spearman Rho correlation

coefficients were calculated to measure the direct and indirect effects of the predictor variables on the personal and work outcomes. Hypothesis one was partially supported: the theoretical extension of the Job Characteristics Model explained 21% of the variance ($p<.05$) in professional nurse motivation for professional nurses low in growth need. Hypothesis two was partially supported: the relationship between the motivating potential of the job, professional identity of the nurse, organizational culture of the acute care hospital and the critical psychological states explained 15% of the variance ($.05<p<.06$) in quality, but only for those professional nurses high in growth need. Hypothesis three was not supported: the addition of the variables of professional identity and organizational culture did not explain any of the variance in unit-level quality or productivity. The challenge for nurse executives during this time of organizational restructuring and work (re)design will be simultaneously addressing the perceptual and outcome differences between professional nurse employees with a high growth need who desire a more challenging medical-surgical nursing practice and those professional nurses whose desire is not quite so strong.

ACKNOWLEDGEMENTS

"...you become yourself, when what you dream,
becomes what you are able to do" (author unknown).

My brother, Gary D. Gaither, shared this inspirational quotation with me when I began my doctoral education. He has always been an unwavering source of inspiration and courage to me. My parents, Gorden and Eileen Gaither, supported me through this educational endeavor as only loving parents are capable of doing. In addition, my maternal grandmother, Dorothy Thomson, deserves to be recognized for her enduring faith in me (as well as UPS) "to deliver" whatever the obstacle. Special recognition is given to my dissertation chair, Dr. Enid Goldberg, Professor of Nursing and Dean Emeritus, whose patience, wisdom and pragmatic approach continually guided this investigator through this scholarly process. The members of my committee, Dr. Ann Lyness, Dr. Carolyn Hoch and Dr. Steve Belle are also acknowledged for their contributions to this scholarly work.

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CHAPTER I

INTRODUCTION

Nursing administration research initiatives have become a national priority. Recent National Commission on Nursing Reports "have placed an emphasis on increasing the scientific understanding of nursing practice and delivery methods which improve quality of care and patient outcomes, and ensure the appropriate use of nursing resources in providing care" (Moritz, Hinshaw and Heinrich, 1989, p. 13). As official representatives of The National Center for Nursing Research, Moritz et al. (1989) have echoed this mandate to nurse executives: "research should include studies of the delivery of patient care and the factors which affect such delivery" (p. 14). Empirical activities which focus on the relationship of nursing resources to the provision of quality care and the testing of practice environments have become the funding priorities of federal agencies, professional organizations, and multiple foundations and trusts (U.S. Department of Health and Human Services, 1989). Thus, from a Federal Government perspective, the national research priorities for the discipline of nursing administration have been established.

Practitioners in the field have also identified nursing administration research priorities. A recent study, employing the delphi method, reported consensus on the future direction of the discipline's empirical efforts.

A panel of nursing service administrators, administrators of university hospitals, deans of schools of nursing, nursing administration faculty, health service administration faculty, and associates from public and private foundations formed the sample of this study (Henry et al., 1987). Pursuing the answers to the questions of "What are the cost-effective components of clinical nursing care that yield high patient satisfaction, decrease the number of complications, and shorten the hospital stay for identified groups of patients?", and "How can nursing research in the practice setting be used to decrease cost, improve the quality of care, and increase patient and nurse satisfaction?" (Henry et al., 1987, p. 312) have been ranked as the first and second priority, respectively by this group.

The research questions identified by this diverse group reflect the operational and financial concerns of contemporary health care administrators. The research strategies suggested to address the identified questions included "cost-benefit analysis, long-range forecasting, including heuristic analogy, and market, network and vulnerability analysis" (Henry et al., p. 313). The information obtained from the use of such methods derived from the disciplines of accounting and economics would appear to enhance the financial base of individual health care organizations rather than advance the knowledge base of the discipline of nursing administration. In addition, theoretical perspectives from within the discipline of nursing administration, which might guide the empirical

studies seeking the answers to these pressing questions, were not suggested.

Issues, theoretical frameworks and methodological designs appropriate to support the research priorities of the discipline of nursing administration, as identified by the federal government, professional organizations, and a panel of expert practitioners, have recently been discussed (Alexander, 1989; Henry & Arndt, 1989; Hinshaw, 1989). In a review of the issues relevant to the development of nursing administration science, Hinshaw (1989) inquired whether research questions could be identified and operationalized professionally and organizationally while allowing for scientific creativity and guidance of the discipline's body of knowledge. The question would appear to be more than a rhetorical one considering the economic concerns which reported in the Delphi study by Henry et al. (1987). An observation made by Dimond and Slothower (1978) over a decade ago remains relevant today: "The practice of nursing administration is functioning from an atheoretical or untested theoretical base" (p. 3).

The potential contributions of theoretical frameworks currently being used by nursing administration researchers from within the broad field of business administration paradigm have been highlighted by Alexander (1989). Within the discipline of nursing administration the concepts and perspectives of organizational behavior, personnel management, and organizational theory were found to inform most nurse executives of management strategies.

The implications of being informed by a theoretical perspective outside of the paradigm of professional nursing

may prompt both practical and professional consequences (Jennings & Meleis, 1988; Meleis & Jennings, 1989). Jennings and Meleis (1988) have cautioned nurse executives "that just as the medical model is not suited to the clinical practice of nursing, so the sole reliance on management and administrative theories from other disciplines is not apropos for guiding the practice of nursing in organizations. To effectively manage complex problems that are inherent in nursing, because of it's focus on human health rather than product generation, traditional management views must be blended and balanced with a professional nursing perspective" (p. 59).

The development of nursing administration theory sufficient to guide the management practices of nurse executives, involves integrating the theoretical perspectives of multiple disciplines with the metatheory of nursing (Meleis & Jennings, 1989). The challenge facing nursing administration researchers continues to be the theoretical synthesis of the professional nursing perspective of the centrality of the patient with psychological, sociological and organizational perspectives.

Ever increasing numbers of nurse executives, especially those in acute care organizations, have accepted the national challenge posed to them to identify the most efficient and effective method of (re)designing the work of professional nursing. However, theory-generated work design studies are not currently guiding the conceptualization of professional nursing practice models or the implementation of the departmental or organizational interventions which might support them. Past nursing administration research

programs, even those related to nursing work, have focused on identifying professional nurse's personal attributes and their relationship to the psychological work outcomes of motivation and satisfaction. A work design theoretical perspective on operationalizing nursing practice models would direct the needed shift in the focus of nursing administration research toward actual work and patient outcomes.

The agenda for nursing administration research programs has been adopted and the questions for study identified (Henry et al., 1987; Moritz et al., 1989; U.S. Department of Health and Human Services, 1989). Professional nursings' paradigmatic perspective has introduced philosophical (Jennings & Meleis, 1988; Meleis & Jennings, 1989), professional (Alexander, 1989; Henry, 1989), and social (Hinshaw, 1989) issues related to the theoretical development of nursing administration knowledge through the use of management theory. However, work design theories, as currently conceptualized within the administrative paradigm, have yet to be tested with female gender-dominated professional populations employed in service organizations.

Nursing administration research has been mandated to address in a systematic, controlled way the interventions proposed or the expected outcomes of the various work design efforts currently under way in acute care organizations (Henry et al., 1987; Moritz et al., 1989). Yet, business, industry and the military have been empirically testing work design models for over two decades (Graen, Scanctura & Graen, 1986; Hackman & Oldham, 1975, 1980; Lawler, Hackman & Kaufman, 1973). The Job Characteristics Model (Hackman &

Oldham, 1975, 1980), from its inception and initial testing, has been found to be successful in predicting personal and work outcomes for employees high in growth need as well as jobs high in motivating potential. Theory-testing research programs aimed at confirming the scientific rigor and practical significance of employing work design frameworks, such as The Job Characteristics Model, merit serious consideration with professional workers employed in service jobs. The advancement of a knowledge base sufficient to inform nurse executives of the predictors of and strategies for successful work design outcomes are dependent upon similar theory-testing activities.

The integration of the professional nursing perspective with the concepts of the administrative paradigm have been strongly recommended. A theoretical perspective from within the discipline of nursing administration would pursue a congruence between the industrial conceptions of a job and the professional aspects of the work of nursing. A nursing administration theory of work design would integrate the unique needs of the employee as an individual, identify the professional aspects of the work of nursing, and recognize the impact of the environment on both the personal and the work outcomes. Such a theoretical perspective would synthesize the concepts of nursing's paradigm with work design theory. Only the rigor of theory-testing activities by nursing administration researchers will confirm the potential contributions of such theoretical conceptions. The success of the restructuring the work of professional nursing practice in organized hospital settings will depend on testing such perspectives and methodologies.

Purpose

Empirically tested theoretical frameworks are needed to direct professional nursing practice work (re)design strategies, especially those undertaken in acute care organizations. The purpose of this study was to test a theoretical extension of The Job Characteristics Model, which was originally developed by Hackman and Oldham (1975, 1980). The strength and the direction of the relationships between personal, sociological and ecological variables which influence an employee's personal and work outcomes were empirically examined.

The original Job Characteristics Model (Hackman & Oldman, 1975, 1980) posited that the perception of the work and the outcomes of work are influenced solely by a psychological variable (growth need). The theoretical perspective which guided the current study examined the impact a sociological variable (professional identity) and an ecological variable (organizational culture) have on professional nurse's perception of the job as well as the outcomes of the work.

Research Question

Are the motivating potential of the work and the staff nurse's perception of growth need, professional identity and organizational culture associated with the personal outcomes of motivation and job satisfaction and the work outcomes of quality and productivity of professional nursing practice in an acute care hospital setting?

Hypotheses

1) The theoretical addition of the variables of professional identity and organizational culture to the

original Job Characteristics Model will positively affect an individual employee's personal outcomes of internal motivation and job satisfaction.

2) The theoretical addition of the variables of professional identity and organizational culture to the original Job Characteristics Model will positively affect an individual employee's work outcomes of performance and quality.

3) The theoretical addition of the variables of professional identity and organizational culture to the original Job Characteristics Model will positively affect the unit level work outcomes of productivity and quality.

Theoretical Framework

The Job Characteristics Model

The Job Characteristics Model was developed from the initial conceptual work of Turner and Lawrence (1965) and Hackman and Lawler (1971). The initial conceptual definitions and operational measures of the job characteristics were provided by Turner and Lawrence (1965). Blood and Hulin (1967) also provided early support for continued investigations of the effect of job characteristics on employee motivation and job satisfaction.

In 1971, Hackman and Lawler proposed a way of conceptualizing the impact of job characteristics on an employee's work attitude and behavior. The operational definition for individual employee differences in the desire for higher order need fulfillment was developed. The authors stated that motivation, satisfaction, and performance depend on the desire for higher order need fulfillment and the motivating characteristics of the work

that will satisfy the employee need. Built upon this initial conceptual framework, Hackman and Oldman (1975, 1980) further refined the work of their colleagues into the Job Characteristics Model now in use (Figure 1).

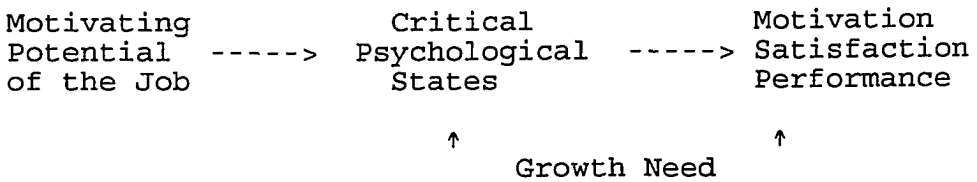

Figure 1

The Job Characteristics Model
(Hackman & Oldman, 1975, 1980)

From it's inception and initial testing, the original Job Characteristics Model has been found to be somewhat successful in predicting personal and work outcomes for those individual employees high in growth need as well as those jobs high in motivating potential. Hackman and Oldman (1975) addressed this effect in their original conceptualization of the model by clarifying the purpose of their empirical work. The expressed purpose of the model is to provide a theoretical base for "diagnosing and determining the actual existence of high motivating potential job characteristics and employee desire for higher order need fulfillment as positively expressed by motivation, satisfaction, and performance (Hackman & Oldman, 1975, p. 260). The Job Characteristics Model deals only with those aspects of the work that can be altered to create positive work incentives for employees.

The Job Characteristics Model (Hackman & Oldman, 1975, 1980) focuses on the psychological attributes of the employee and the motivating characteristics of the work. In their original work, Hackman and Oldman (1975) described the relationship between job characteristics and the responses of employees to those same job characteristics. The model states that there are five basic job characteristics that prompt three psychological states which, in turn, lead to the personal outcomes of motivation and satisfaction and the work outcome of effective and efficient performance.

The composite measure of all five job characteristics provides an overall motivating potential score (MPS) for the job. The five basic job characteristics are skill variety, task identity, task significance, autonomy, and feedback. The employee's individual response to the motivating potential of the work through the critical psychological states to the personal and work outcomes is influenced by the employee's growth need for a challenging, enriched job.

The three critical psychological states of experienced feelings are prompted by the five characteristics of the job. The experienced feelings of the psychological states are the meaningfulness of the work, the responsibility for the outcome of the work, and the knowledge of the results of the work.

Skill variety, task identify, and task significance are the job characteristic measures of the meaningfulness of the work. The job characteristic associated with the

experienced responsibility for the work is autonomy. Feedback is the characteristic linked to the knowledge of the results of the work.

Growth need influences both the employee's feelings of critical psychological states as well as the outcomes of the work. It is supposed that the perception of whether the five job characteristics prompt the three psychological states lies within the employee's desire for higher order need fulfillment on the job. In addition, growth need influences the outcomes of the work through the feelings of the psychological states. The outcomes of the work may be internal motivation, satisfaction with the work, quality work performance, and/or low absenteeism and turnover.

There are basic assumptions which underlie the separate components of the Job Characteristics Model and their relationships to one another (Hackman & Oldham, 1975). The first assumption is that the job characteristics can affect an employee's attitude and behavior toward the work. Another assumption is that individuals who desire higher order need fulfillment [growth need fulfillment] from their work will perceive the motivating potential of the job differently than those employee's whose desire is not quite so strong. The third assumption is that the stronger the perceived interrelationships between the job characteristics and the individual's growth need, the more positively the supposed causal relationship to the actual outcome.

A Theoretical Extension of the Job Characteristics Model

The theoretical framework for this study was an extension of the earlier empirical work of Hackman and Oldman (1975, 1980) and the prior conceptualizations of their predecessors (Blood & Hulin, 1967; Hackman & Lawler; 1971; Turner & Lawrence, 1965) (Figure 2). While acknowledging the employee's personal desire for higher order need fulfillment on the job, the original model does not address the influence of an employee's professional orientation to the work or the influence of the environment in which the work takes place on the personal and work outcomes. Therefore, additional variables which address these limitations were introduced into the model. The first variable was professional identify. The second additional variable was organizational culture.

The concept of professional identity has been conceptually defined as the employee's professional orientation to the work. Professional identity encompasses the employee's internalization of the values and beliefs inherent in the practice of professional nursing. The practice of professional nursing is posited as possessing a unique perspective of work. This perspective of work emanates from the integration of empirical, ethical, esthetic, and personal knowledge (Carper, 1978). It was

proposed that this professional perspective influences the employee's perception of their job as a staff nurse and the outcome of the work.

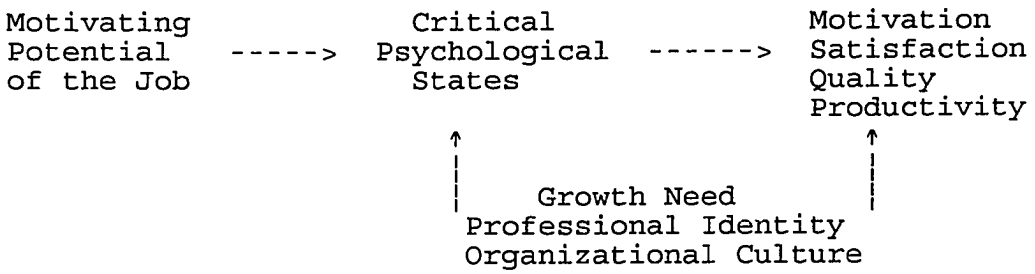

Figure 2

A Theoretical Extension of the Job Characteristics Model (Fleischer, 1992)

The concept of organizational culture has been conceptually defined as the composite of contextual dimensions of the institutional environment in which the work takes place. The cultural perspective of an organizational environment has been derived from the disciplines of anthropology and sociology. Organizational culture encompasses the pervasive nature of attitudes, beliefs and values related to the job itself, and job-related activities within an organized work environment. It is proposed that this organizational perspective of work influences the employee's perception of their job as a staff nurse and the outcomes of their work.

The assumptions of this theoretical perspective of work design are similar to those described within the original Job Characteristics Model. The first assumption of the original model, which states that the characteristics of the

job affect an employee's attitude and behavior toward the work, was accepted. The second assumption (which states that as the desire for higher order need [personal] fulfillment from the job varies among employees so does their perceptions of the work), was modified within the theoretical extension of the model. The original assumption as delineated by Hackman and Oldman (1975, 1980) only accounts for a psychological (personal) origin of an employee's perceptions of the work. This assumption was broadened in scope to include perceptual origins which are sociological (professional) and environmental in nature.

Thus, in addition to the personal origin of the perceptions of the work (which emanate from the individual's higher order needs), it was proposed that an employee's professional orientation toward the motivating potential of the job, as expressed through the critical psychological states will influence the outcomes of the work. The results of several empirical studies supported the theoretical inclusion of the variable of professional identity in the model (Cawsey, Reed & Reddon, 1982; O'Reilly, Pariette & Bloom, 1980; Stone, Mowday and Porter, 1977).

The employee's perception of the organizational environment in which the work takes place was also posited to affect the perceptions of the job characteristics and the personal outcomes of motivation and satisfaction and the work outcomes of quality and productivity. Empirical

support for the influence of the work environment on the personal outcomes of the work has lead to the inclusion of the variable of organizational culture in the model (Arvey, Bouchard, Segal & Abraham, 1989).

The last assumption of the original Job Characteristics Model was similarly modified to include the influence of the employee's professional identity and perception of the work environment. The revised assumption stated that the stronger the perceived interrelationship between the job characteristics, the individual's growth need, professional identity, and organizational culture of the environment the more positive the causal relationship to the personal outcomes of motivation, satisfaction, and work outcomes of quality and productivity.

This theoretical extension of Hackman and Oldham's work (re)design theory represented a conceptual attempt to integrate the concepts relevant to the metaparadigm of the discipline of nursing - person, health, nursing and the environment - with an organizational behavior perspective of work and the subsequent outcomes. The revised theory was used to guide the design, data collection methods, and explanation of the results of this study of the personal outcomes and work outcomes of professional nursing practice in acute care organizations.

The Significance of the Study to the Discipline Of Nursing Administration

Empirically testing theoretical models predictive of the personal and the work outcomes of professional nursing practices in acute care organizations using explanatory correlational research designs contribute to the advancement of the discipline of nursing administration. Henry and Arndt (1989), in a discussion of the importance of theory to nursing administration practice, have stated that good theories inform nurse executives on making "important choices and undertaking critical tasks to help individuals as well as organizations grow and succeed" (p. 1). Research programs which empirically test theory have become essential precursors to the intervention studies that will eventually prescribe management strategies specific to guiding professional nursing practice in organizations.

Perhaps the significance of employing theory-testing methodologies in the investigation of nursing administration phenomena can be best evaluated from a developmental perspective. Historically, the advancement of clinical nursing science proceeded through eras which addressed the conceptual origins of the scientific base for the discipline, the appropriate syntax for a professional nursing knowledge base, and the semantics involved in articulating the knowledge base of nursing (Meleis, 1991). The current discussions and ongoing debates of theorists and researchers within the discipline of nursing administration regarding the appropriate direction of the discipline's empirical efforts are strikingly similar to the philosophical, theoretical and methodological concerns that

entrenched the advancement of clinical nursing science over two decades ago.

McDaniel (1990) has reported that the predominant themes of nursing administration research programs have been reported to be "...entrenched in and informed by the psycho-individual approach rather than a more broad and encompassing socio-environmental approach" (p. 192). An internal rather than an external orientation to nursing administration phenomena was proposed as guiding most research activities. McDaniel (1990) has advocated that nursing administration research efforts focus on the organizational phenomena which impact professional nursing practice and policy in organized health care settings. These observation have lead McDaniel (1990) to conclude that researchers were neglecting "...the environment and nature of health care services as they occur in the organizational context of an interactive and changing delivery system" (p. 193).

Hermesdorfer, Henry, Moody and Symthe (1990) examined the present use of theoretical frameworks in contemporary nursing administration research endeavors. The authors reported that the explicit use of theory, nursing or management, has yet to become a standard practice of nursing administration researchers. This observation concurs with opinions expressed over a decade ago (Dimond & Slothower, 1978). Empirical investigations of the impact of the environment on the practice of professional nursing, especially within acute care organizations, would simultaneously address both the nursing administration

research priorities identified by practitioners in the field, federal agencies and private funding sources (Moritz et al., 1989) and the findings of McDaniel (1990) and Hermesdorfer et al. (1990).

Fawcett and Downs (1986) have stated that "theory without research and research without theory do little to advance knowledge in any meaningful way" (p vii). The results of the contemporary review of theory syntax within nursing administration research (Hermesdorfer et al., 1990) and the concurrent review of the paradigmatic development of the discipline (McDaniel, 1990) have identified the significance of theory-driven research activities to the advancement of the discipline of nursing administration. However, it has been concluded that, to date, the scope and depth of nursing administration knowledge will not continue to progress if research programs remain theoretically devoid, unfocused and descriptive in design (Hermensdorfer et al. 1990) as well as focused solely on the individual (McDaniel, 1990).

Contributions of the Study to the Discipline of Nursing Administration

"Skeptics within the discipline point out that theory development remains in an early stage and that a body of nursing administration knowledge has yet to be well-defined" (McCloskey, Gardener, Johnson & Maas, 1988, p. 92). This research study addressed several of the discipline's concerns regarding the timely development of nursing administration theory and concurrent accumulation of a knowledge base. Contributions of this empirical study to the discipline of nursing administration are three-fold.

First, an integretated theory of work (re)design guided the investigation of the outcomes of professional nursing work. The perception of the work involved in providing professional nursing care in an organized setting and the outcomes of that same work were posited as originating from multiple conceptual perspectives: personal, professional, and organizational. This theory of work (re)design synthesized traditional professional nursing constructs and concepts of nursing administration origin with empirically tested management and organizational theory.

Secondly, the theoretical framework and the design of the study simultaneously addressed the multi-level practice phenomena of the nurse executive: the individual nurse, the profession of nursing, the nursing unit, and the organization. Data collection included obtaining measures of the work outcomes at both the individual and the nursing unit level. An investigation of the relationship between the perception of the job and the actual unit level work outcomes of quality and productivity may provide conceptual insight into an empirical link between job perceptions, professional attitudes, and patient outcomes. The planned data analysis procedure will document the strength of the relationships between the concepts and distinguish the direction of relationships which, until now, have only been linked together by the intuition, professional opinion or experiential learning of both executives and theorists.

Determining the individual and collective influence of personal, professional, and organizational variables on the quality and productivity of professional nursing, whether at the employee or group level was the third contribution of

this study. Data analysis procedures have documented the strength of the relationships between concepts and have distinguished the direction of the relationships which, until now, had only been linked together by intuition, professional opinion or the experiential learning of both theorists and nurse executives.

The results of such theory-testing studies provide the nurse executive with insight into the perceptual origins of the outcomes of the practice of professional nursing in organized settings. The explanations provided by theory-testing methodologies provide a conceptual guide to identifying at which level - the individual, the professional group, or the organization - an administrative intervention aimed at improving the quality and productivity of professional nursing care should be directed. In addition, comparative studies of work redesign initiatives across organizations benefit from a common theoretical perspective from which to conceptualize and measure potential differences in the quality and productivity of professional nursing practices. Studies on the impact of the design of various nursing care delivery models in acute care organizations on patient outcomes and institutional performance would logically follow when a nursing administration theory of work design exists to guide them.

Definition of Terms

The theoretical definitions of the terms are cited as they appear in the work design and nursing administration literature. Operational definitions are included for each variable within the theoretical framework of the study.

Motivating potential score (MPS) - the combination of the five job characteristics into a single index that reflects the overall potential of a job to foster the positive work outcomes of motivation, satisfaction, and performance (Hackman & Oldham, 1975). The motivating potential score was calculated using the multiplicative formula (for combining the job characteristics) described in the scoring directions of The Job Diagnostic Survey (Appendix B).

Job characteristics (JC) - the five dimensions of work: skill variety, task identity, task significance, autonomy, and job feedback (Hackman & Oldman, 1980).

Skill variety (SV) - "the degree to which a job requires a variety of different activities in carrying out the work, involving the use of a number of different skills and talents of the person" (Hackman & Oldman, 1980, p. 78). Skill variety was calculated by averaging the responses to question #4, in section one, and the responses to questions #1 and #5, in section two of The Job Diagnostic Survey.

Task identity (TI) - "the degree to which a job requires completion of a whole and identifiable piece of work, that is, doing a job from beginning to end with a visible outcome" (Hackman & Oldman, 1980, p. 78). Task identity was calculated by averaging the responses to question #3, in section one, and the responses to questions #3 and #11, in section two of The Job Diagnostic Survey.

Task significance (TS) - "the degree to which the job has a substantial impact on the lives of other people, whether those people are in the immediate organization or in the world at large" (Hackman & Oldman, 1980, p. 79). Task significance was calculated by averaging the responses to

question #5 in section one, and questions #8 and #14 in section two of The Job Diagnostic Survey.

Autonomy (A) - "the degree to which the job provides substantial freedom, independence, and discretion to the individual in scheduling the work and in determining the procedures to be used in carrying it out" (Hackman & Oldman, 1980, p. 79). Autonomy was calculated by averaging the responses to question #2 in section one, and questions #9 and #13 in section two of The Job Diagnostic Survey.

Job feedback (JF) - "the degree to which carrying out the work activities required by the job provides the individual with clear and direct information about the effectiveness of his/her performance" (Hackman & Oldman, 1980, p. 80). Job feedback was calculated by averaging the responses to question #7 in section one, and questions #4 and #12 in section two of The Job Diagnostic Survey.

Critical psychological states (CPS) - the three feelings which emerge within the employee from experiencing the five characteristics of the work: the meaningfulness of the work, the responsibility for the outcomes of the work, and the knowledge of the actual results of work activities (Hackman & Oldman, 1975). A cumulative measure of the critical psychological states was obtained by averaging the responses to the individual feelings of meaningfulness, responsibility and knowledge of the work. The meaningfulness of the work was calculated by averaging the responses to questions #4 and #7 in section three, and the responses to questions #3 and #6 in section five of The Job Diagnostic Survey. The responsibility for the work was calculated by averaging the responses to questions #1, #8, #12, and #15 in section

three, and questions #4 and #7 in section five of The Job Diagnostic Survey. The knowledge of results of the work was be calculated by averaging the responses to questions #5 and #11 in section three and questions #5 and #10 in section five of The Job Diagnostic Survey.

Growth need (GNS) - the psychological (personal) need or desire that "determines how vigorously an individual will respond to work high in motivating potential" (Hackman & Oldman, 1980, p. 85). A combined growth need score was calculated by averaging the responses to questions #2, #3, #6, #8, #10, and #11 in section six and the responses to questions #1 through #12 in section seven of The Job Diagnostic Survey.

Professional identity (PI) - the degree to which an individuals' sense of work-related values are shared with the values of the discipline of professional nursing" (Brenner, 1991). Professional identity was calculated by averaging the responses to the thirty-one items on the Brenner Professional Identity Index (Appendix C).

Organizational culture (OC) - the measure of an individual's perception of attitudes, beliefs, and values shared with the work environment of the organization (Cooke, 1990). Organizational culture was calculated from the employee responses obtained from The Organizational Culture Inventory (Appendix D).

Internal motivation (IM) - the degree to which satisfying (personal) higher order needs depends on the perception and performance of the work (Lawler & Hall, 1970). Motivation was calculated by averaging the responses to questions #2, #6, #10, and #11 in section three and the responses to

questions #1 and #9 in section five of The Job Diagnostic Survey.

Job satisfaction (JS) - the positive feelings or attitudes of an employee about their work. Job satisfaction was calculated by averaging the responses to questions #3, #9 and #13 in section three and the responses to questions #2 and #8 in section five of The Job Diagnostic Survey.

Patient classification system (PCS) - nursing administration tool developed to categorize or group patients according to their prospective nursing care requirements during a specified period of time (Simms, Price & Ervin, 1985). Nursing care requirements are expressed as hours per patient per day.

Performance (PER) - professional nurse on-the-job behavior. Performance was measured by averaging the responses to three Likert-style items within the Demographic Data Form: how do you rate your own performance; how do your peers rate your performance; and how does your manager rate your performance (Appendix G).

Productivity (PRO) - the efficiency with which work is accomplished. The ratio of professional nursing care hours available for patient and organizational consumption and the number of professional nursing care hours available during a specified timeframe, usually a 24-hour period. Unit level productivity was calculated from the Critikon patient classification system data (Appendix H). Daily productivity data from each unit was averaged for the one month data collection period, thus providing one measure of productivity per nursing unit.

Quality (Qu) - the effectiveness of the service provided. At the individual level quality was calculated from the survey responses to the Nurse's Perception of Quality Scale (Lynn & Sidani, 1991) (Appendix F). Quarterly continuous quality improvement records reported the unit level measure of quality. The percent (%) compliance to unit-specific clinical indicators of nursing care was used to calculate the unit measure of quality.

Clinical indicator (CI)- a quantitative measure that can be used as a guide to monitor and evaluate the quality of important patient care and support service activities (Joint Commission on the Accreditation of Health Care Organizations, 1989; Patterson & Parsek, 1991).

Medical-Surgical Nursing Practice (MSNP) - the assessing, planning, implementing, and evaluating of professional nursing care with hospitalized patients receiving medical and surgical services from a licensed allopathic or osteopathic physician or licensed dentist.

Registered nurse (RN) - individual licensed to practice professional nursing.

CHAPTER 2

REVIEW OF THE LITERATURE

The review of the literature begins with the presentation of the individual concepts within the original Job Characteristics Model. These concepts include: 1) the characteristics of work; 2) the motivating potential of the job; 3) the growth need of the employee; 4) internal motivation; and, 5) job satisfaction. The job characteristics, motivating potential, and growth need are discussed as originally implemented in industry and tested in organizational behavior research. These concepts were developed as they relate to the personal work outcomes of employee motivation and job satisfaction. A critique of the use of the Job Characteristics Model within the discipline of nursing administration follows.

The concepts of professional identity and organizational culture are discussed as influences on the employee's perception of the work and performance on the job. Professional identity is reviewed as the nurse's professional orientation toward work in organized work settings. Organizational culture is presented as an environmental dimension of the work setting.

A discussion of quality and productivity as actual work outcomes is included. Quality is developed as a relative measure of the effectiveness of work. Current theoretical perspectives of productivity, in general, and professional

nursing productivity, in particular, are presented. A brief summary which addresses the contributions and limitations of the reviewed literature conclude this chapter.

Job Characteristics

Business managers and researchers alike have been examining the way jobs are designed as an important factor in determining the motivation, satisfaction, and performance of employees at work (Blood & Hulin, 1967; Hackman & Lawler, 1971; Hackman & Oldham, 1975, 1980; Turner & Lawrence, 1965). The early studies of Turner and Lawrence (1965) and Blood and Hulin (1967) gave sufficient support to the effect of the characteristics of the work on employee job satisfaction that investigations ensued to clarify these concepts and the relationships between them.

The first operational definitions and measures of the job characteristics were developed by Turner and Lawrence (1965). The authors stated that work contained six different characteristics: variety, autonomy, interaction, knowledge, skill, and responsibility.

Brief and Aldag (1975) reported strong support for the presence of positive associations between a worker's perception of the job characteristics and the affective responses to that same job. The stated purpose of their study was to replicate parts of Hackman and Lawler's (1971) theoretical work on the measure of job characteristics. The results of 104 correctional employee's responses to the Job Descriptive Index significantly ($p<.05$) supported the hypothesized relationship between the job characteristics and employee reactions as well as the moderating effect of higher order need strength. This classic and frequently

cited study using the six original characteristics as developed by Hackman and Lawler (1971) found "the core job dimensions displayed the maximum association with the personal and work outcomes" (p. 185).

Stone, Mowday and Porter (1977), also using the Job Descriptive Index, measured the job satisfaction of 605 telephone company employees. The results agreed with the original authors as to the causal relationship that exists between the job characteristics and worker's attitudes. Using a multivariate technique, the authors reported 16 of the 19 attitudinal/job characteristics relationships were found to be highly significant ($p<.01$), the remaining 3 were found to be somewhat less significant ($p<.05$).

Hackman and Oldham (1975) concurrently reported that jobs have five characteristics: skill variety, task identify, task significance, autonomy, and feedback. Field testing done by Hackman and Oldham (1976) produced the Job Diagnostic Survey. The results from their study of 658 employees in 62 different jobs concluded that the individual job characteristics predict and measure the experienced meaningfulness of the work, the knowledge of results, and the experienced responsibility for the work.

Two job enrichment studies (Oldham, Hackman & Pierce, 1976; Umstot, Bell & Mitchell, 1976) reported that the job characteristics were related to job satisfaction rather than performance as sometimes supposed. Using the Job Diagnostic Survey, Oldham et al., (1976) questioned 201 clerical bank employees. Highly significant ($p<.01$) results were documented for the relationship between the job characteristics and the outcome variables of satisfaction

with pay and internal motivation for those employees high in growth need strength. This support for the job characteristic-job satisfaction relationship in those employees high in growth need does not provide insight into the potential origin of a similar outcome for those individuals motivated and/or satisfied by other job-related factors or contexts. Likewise, the job characteristic-performance link remained unexplained.

Observational methods were tried as a means of identifying and examining the job characteristics but it was found that these methods could not adequately identify the underlying attitudes of the employee (Jenkins, Nadler, Lawler & Caffnonn, 1975). Identifying a perception and/or attitude which can simultaneously be observed and measured would be more likely with qualitative, rather than quantitative, methods. The characteristics of the job are posited to influence the occurrence and awareness of the three critical psychological states in the employee.

Dunham, Aldag and Brief (1977) provide both support for ($p<.10$) and evidence of the five-factor dimensionality of job characteristics but cautioned others in regard to the somewhat sample specific nature of their results. Data were collected using the Job Diagnostic Survey from 5,945 workers from five different organizations engaged in over 20 different jobs. The dimensionality of the job characteristic measures were examined using an inter-item correlation matrix, principal factor analysis, and an oblique technique.

Using the Job Diagnostic Survey in their examination of 94 bank employees and their managers, Hackman, Pierce and

Wolfe (1978) showed a moderate level of convergence between the job characteristics identified by both groups. Additional observations reported by the authors include significant ($p<.05$) results for employees' perceptions of all the job characteristics except task identity, and highly significant results ($p<.01$) in the employees response of satisfaction and motivation. The moderating effect of growth need strength was also found to be highly significant ($p< .01$) for employees whose jobs had a decrease in the motivating potential of their work as a result of implemented work design changes.

O'Reilly (1977) and Brousseau (1978) examined job characteristics in relation to personality-job fit. O'Reilly examined the personality-job congruency measures of 307 Navy personnel using the Job Descriptive Inventory. Significant ($p<.05$) results were obtained for the relationship between an expressive personality type and a challenging job. Brousseau utilized the Job Diagnostic Survey and the Guifford Zimmerman Temperment Survey in a study of 340 male salaried employees of a large petroleum products firm. Highly significant results ($p<.01$) were reported for the relationship between individuals with an active personality orientation and the job characteristics of task identity, task significance, and feedback.

A later study by Brousseau and Prince (1981) correlated the job characteristics measures with the temporal nature of the employee's level of job satisfaction. A sample of 176 engineers, scientists, and managers were surveyed. Using the same instruments as Brousseau's earlier study, the authors reported the personal attributes of activity,

ascendancy, sociability, and personal relations were again significantly ($p<.05$) correlated with the same three job characteristics: task identity, task significance, and feedback from the work.

In an attempt to clarify the way that job characteristics influence job satisfaction, Walsh, Taber and Beehr (1980) supported ($p<.05$) the job characteristics measures but expressed a need to expand the characteristics into an information and an action component. The random selection of 10% of all the employees of a large mid-western manufacturing company yielded a sample of 957. The Job Diagnostic Survey was used to measure the five job characteristics. Task identity and feedback were found conceptually dependent upon the information component. The action component was linked to the characteristics of skill variety and autonomy.

Taber, Beehr and Walsh (1985) found the standard job characteristics, as developed by Hackman and Oldham (1975, 1976), a useful means of assisting employees with discussions and comparisons of their respective jobs. The Job Diagnostic Survey was administered to 308 engine-shop workers. The inter-correlations of the five job characteristics were extremely significant ($p<.001$) in this sample. The authors found that these measures can be used to identify the occurrence of a person-job mismatch, although not necessarily the underlying cause.

When attempts are made to focus on skill variety, task identity, task significance, autonomy, and feedback as separate variables that effect personal outcome such as job satisfaction, the results are often mixed. Brief and Aldag

(1971) reported problems with the task identity measure, while Hackman and Lawler (1971) failed to support feedback. Task variety and autonomy occasionally cannot be statistically differentiated (Dunham, 1976) and only weak support was found for skill variety in a more recent study (Evans, Kiggundu & House, 1979).

The fact that the individual job characteristics do not occur in exactly the same manner with exactly the same relationships and outcomes can be viewed as basically supportive of one of the assumptions of the model: individuals perceive the motivating characteristics of their work differently (Brousseau, 1978; Brousseau & Prince, 1981; Dunham et al., 1977; O'Reilly, 1977; Walsh et al., 1980). Contemporary task design and job characteristics studies (Adler, Skov & Salvemine, 1985; Fried & Ferris, 1986; Kiggundu, 1983; Terborg & Davis, 1982) have continued to use the original five characteristics but with particular emphasis on the total motivating potential of the job they cumulatively generate.

Motivating Potential of the Job

In a classic study aimed at identifying the relationships among job characteristics, job involvement, job satisfaction, and intrinsic motivation, Lawler and Hall (1970) concluded "...probably the most important point about the identified job motivation items is that they can provide a criterion for comparing the motivating potential of various jobs" (p. 305). Data were collected from 291 scientists in 22 research and development laboratories. The sample in itself should be considered somewhat unique in that little had been done previously to learn what kind of

work design motivates scientists. A Likert-type scale was developed by the authors to measure the scientists' satisfaction in autonomy and self-actualization needs as well as satisfaction with the perceptions of their work. The results reported that all of the job characteristic measures showed significant ($p<.05$) relationships to satisfaction, whereas the job performance measures were more strongly ($p<.01$) related to motivation.

Hackman and Lawler (1971) explained that the motivating potential of jobs can only be realized when the psychological demands of the job meet the personal (higher order) needs of the employee. These authors also recognized the cumulative effect of individual job characteristics on the employee's perception of the total job. Samples of 208 employees and 62 supervisors engaged in 13 different jobs in an eastern telephone company were surveyed using a Likert-type questionnaire developed by the authors. (This questionnaire marked the rudimentary beginnings of the current Job Diagnostic Survey). Positive relationships ($p<.05$) were obtained between the job characteristics and job satisfaction, motivation, performance, and attendance.

Hackman and Oldham (1976) developed the motivating potential of the work as the measure of the overall degree to which the five individual job characteristics combine to maximize the possibility of internal motivation and job satisfaction. The authors reported four revisions of the Job Diagnostic Survey and its measures. The revisions occurred over a two-year period and involved over 1,500 respondents working in more than 100 different jobs in 15 organizations.

Orpen (1979), in a longitudinal study involving 86 federal employees, concluded that the motivating potential of the job related more strongly to each of the personal and work outcomes than did the job characteristics on their own. Using the Job Diagnostic Survey and an experimental design, the author examined the temporal effects of work redesign on clerks in a large referral agency. The results indicated a significant ($p<.05$) relationship between the motivating potential score of the work and job satisfaction.

A methodological debate ensued over a reliable and valid way to combine the job characteristics of skill variety, task identity, task significance, autonomy, and feedback into one measure of the overall motivating potential score of the work (Hackman & Oldham, 1975; Dunham, 1976; Dunham et al., 1977; Umstot et al., 1976). A statistical rationale for the conclusion that the motivating potential cannot be a reliable and valid predictor of the interaction between the psychological states in determining the personal and work outcomes was documented by Arnold and House (1980). Oldham and Miller (1979) concurred with those who debated the issue of the most reliable method of combining the job characteristics into one score. Yet, they chose to use the additive model because "...it performs as well as the more complex multiplicative model, yet is more parsimonious" (p. 259).

The motivating potential of the work, as generated by the total of the separate job characteristics, was recently and optimistically regarded to be most sensitive to the employee's job satisfaction (Caldwell & O'Reilly, 1982). In this initial study of calculating the overall motivating

potential of the work from the individual job characteristic scores, the authors explained 43 percent of the variance in the overall motivating potential score using the multiplicative formula as developed by the original authors.

The motivating potential of a job can range from one to 343. The average motivating potential score for jobs in U.S. organizations has been reported as 128 (Hackman & Oldman, 1980). Joiner, Johnson, Chapman and Corkrean (1982) initially documented a mean motivating potential score of 155 for the work of professional nursing in an acute care hospital, as measured by 144 staff nurse responses to the Job Diagnostic Survey. Fleischer (1987) reported a mean motivating potential of 134 for a medical-surgical nursing practice in an acute care hospital. Both studies pointed out that, although the motivating potential score for nursing jobs compared favorably with the reported scores for other jobs and professions, the results revealed a significant ($p<.05$) difference in the motivating potential of different specialty practices within nursing.

Growth Need

In their examination of need-satisfaction model development, Salanick and Pfeffer (1977) credited Maslow's theory of human needs as the impetus behind contemporary individual need-job satisfaction frameworks. Maslow's hierarchy of needs ranges from the basic physiological needs to the higher order need of self-actualization (Maslow, 1968).

Herzberg, Mausner and Snyderman (1959) took a more dichotomous view of needs as being either motivating or hygienic (satisfying). Alderfer (1969) attempted to

redefine Maslow's hierarchy as existence, relatedness, and growth. Argyris (1973) stated that needs are based on an expressive or instrumental personality orientation of the individual. Lawler and Hall (1970) supported the relationship between higher order need fulfillment, intrinsic motivation, and job satisfaction. Hackman and Lawler (1971) documented a difference in the growth need strength of workers with urban and rural early life socialization backgrounds.

The work of Hackman and Oldham (1975, 1980), as an extension and refinement of the work of Hackman and Lawler (1971), accepted the premise that individuals have needs but not that individuals have varied needs. Hackman and Oldham posited (1975) that higher order needs vary only in strength among individuals.

Growth need is viewed as a higher order need inherent in all individuals. The concept of growth need has been explained as influential and interactive between the job characteristics and the critical psychological states as well as between the psychological states and the personal outcomes of internal motivation and job satisfaction and work outcomes.

In an attempt to identify the moderators between job characteristics and job satisfaction, Wanous (1974) examined three different measures of individual differences relating employee reactions to job characteristics. The study was done in an eastern telephone company with a sample of 80 female operators, using a Likert-type scaled questionnaire to measure the variables. In this classic comparative study of urban versus rural socialization, Protestant work ethics,

and higher order need strength the author reports, "Higher order need strength yields the clearest relationship because it is the closest variable to the employee reaction that it moderates" (p. 620). Results indicated that the higher order need strength measure was the most significant ($p<.05$) of the moderators examined. This is one of the few early studies in which the sample was female.

In a study of 104 state correctional rehabilitation workers using the original Job Characteristic Questionnaire and the Job Descriptive Index, Brief and Aldag (1975) found that employees high in growth need displayed a stronger relationship between the job characteristics and their affective responses than do employees low in higher order need strength. The study also demonstrated that employees low in higher order need displayed a stronger relationship between the motivating job characteristics and the extrinsic outcomes than those employees high in higher order need strength. Results such as those reported by Brief and Aldag (1975) support the theoretical conceptualizations of Herzberg, whose theory of motivation states that there are separate and distinct aspects of the work, some of which motivate and others which satisfy the employee.

Oldham (1976) provided statistically significant ($p<.05$) correlations between the job characteristics and the employees with high growth need. Using the Job Diagnostic Survey, which has a reliability of .90 for the measure of growth need strength, data were collected from 60 clerical employees and four supervisors from nine different job classifications. The reported result of growth need strength as the moderator of the job characteristics-work

outcome relationship concurred with the prior work design-higher order need satisfaction studies of Hackman and Lawler (1971) and Hackman and Oldham (1975).

Carroll (1978), using the Ghiselli Self-Description Inventory and Patchen's Job Involvement Scale, surveyed 32 dental assistants. The results provided strong support ($p<.05$) for the effect of an employee's higher order need on the perceived complexity of the job.

The effect of growth need was linked to an employee's job involvement in a study of 272 public utility workers (Schuler, 1977). This author's analysis of the results from the Job Diagnostic Survey and the Job Involvement Scale concluded only directional support ($p>.20$) for the effect of growth need strength on an employee's job involvement.

In their work on higher order need strength as a moderator between job scope and job satisfaction, Stone et al. (1977) surveyed 289 employees using the Job Satisfaction Index, Personality Research Form, and a thirteen item task characteristic instrument developed by Stone. The expected moderating effects of the variables did not occur as previously stated in the work design literature. The authors concluded that personality measures of achievement and autonomy did not have the same relationship to the higher order need concepts as did growth need strength.

Stone, Ganster, Woodham and Fusiler (1979) concluded that growth need strength did correlate with approximately the same magnitude as other current measures of higher order need. The Job Diagnostic Survey, Personality Research Form, and Survey of Work Values were administered to 133 undergraduate organizational behavior students. The

internal consistency reliability and Pearson correlations of the growth need strength measure were found to be "more or less the same as previously reported in the literature" (p. 333).

The results of Champoux (1978) indicated that "the interaction of the job characteristics and growth need does not operate equivalently across jobs of varying scope" (p. 61). In an attempt to refine the relationship between psychological responses and job scope, 1,224 employees of a large research and development organization were given the short version of the Job Diagnostic Survey. Highly significant results ($p<.01$) were reported for growth need satisfaction measures even in jobs of average scope.

An employee's need for achievement surfaced along with slight support ($p<.20$) for growth need strength in a study presented by Arnold and House (1980). The Job Diagnostic Survey was administered to 90 engineering personnel. The authors felt the chosen method of calculating the motivating potential score may have influenced the results. This influence often occurs in studies using alternative designs to test the multiplicative versus additive measure of the motivating potential of the work (Dunham et al. 1977; Oldham & Miller, 1979).

Cawsey et al. (1982) documented that cultural backgrounds affected the higher order need strength measures of 196 Canadian telephone company managers. The Job Descriptive Index and Personality Research Form were used to assess job satisfaction and human needs. While commenting that an employee's response to the job characteristics was indeed dependent on the individual's need structure, the

authors concluded that the concept of growth need was somewhat limiting considering the complexity of the need-structure construct.

In a study of 97 public health staff nurses and their practice, O'Reilly et al. (1980) found that perceptual differences ($p<.05$) of the motivating characteristics of their work were associated with the individual nurse's educational preparation and professional association identification. The inverse relationship between the reported measure of the motivating potential of the work of public health nursing and the highest level of education obtained by the nurse supports the work of Stone et al. (1979) who reported an effect of an employee's level of achievement and autonomy on the perception of work.

While acknowledging the extensive examination and testing of multiple higher order need concepts that parallel growth need strength, the literature almost always set growth need as the standard for comparison. It was Stone et al. (1979) who conceded "growth need does correlate with approximately the same magnitude as other current measures of higher order needs" (p. 339). This literature review of the growth need strength of an employee as the higher order need moderator between the motivating characteristics of the work and employee job satisfaction produced a measure of the growth need strength of the staff nurse in one setting (Harrison, 1987).

No concept is without controversy, especially those relating to the internal and personal natures of individual perceptions, needs, and attitudes. The literature does address and identify certain specificities regarding the

situational occurrence of the correlation between the growth need strength of the employee and the motivating characteristics of the job. An individual's value system, socialization to work, development of work-related ethics, as well as home and work contextual factors, can potentially influence the perception of work and the occurrence of positive work outcomes. The identification of alternative moderators of the relationship between the motivating potential of a job and the personal outcomes of motivation and satisfaction are especially relevant for employees with a lower than average expectation of achieving higher order need fulfillment within their job.

The characteristics of the job, the motivating potential of the work, and the growth need strength of the employee have been examined and discussed as they appear in the work design literature about internal motivation and job satisfaction. The review of the work design literature has provided support for continued testing of the work design perspective of examining employee motivation and job satisfaction with diverse samples employed in various jobs and alternative settings.

Use of The Job Characteristics Model Within the Discipline of Nursing Administration

Nursing administration theory development and the accumulation of knowledge sufficient to manage the practice of professional nursing in an organized setting depends on the analysis of studies employing similar theoretical frameworks. The application of the Job Characteristics Model (Hackman & Oldham, 1975, 1980), as a theoretical

perspective of professional nurse motivation, satisfaction and performance has been sporadicly documented in the nursing administration literature over the last decade (Deckard, Hicks & Roundtree, 1986; Fleischer, 1987; Guthrie, Mauer, Zawacki & Couger, 1985; Harrison, 1987; Joiner et al., 1982; Roedal & Nystrom, 1988; Seyboldt, 1986). A critical examination of any derived theory requires analysis of the scientific merit and practical significance of the underlying management theory as well as an evaluation of the pragmatic contribution which can be made to the discipline (Fawcett & Downs, 1986). The subsequent synthesis and replication of those empirical investigations eventually form a predominant paradigm for the discipline of nursing administration.

Caution is warrented regarding casual application of the recommendations of these studies considering the insufficient demonstration of empirical and pragmatic adequacy. Fawcett and Downs (1986) have stated the "criterion for empirical adequacy stipulates the conclusions do not go beyond what was demonstrated by the data" (p. 66) in relation to the theory, research question, and design which guided the study. Pragmatic adequacy "means that the findings of theory-testing research should be useful in practice, that is, applicable to a particular clinical speciality, particular client population, age or developmental stage" (Fawcett & Downs, 1986, p. 67). Thus,

depending on the level of sophistication of the nurse executive, several of the descriptive studies reviewed could be misinterpreted as prescriptive in nature, as implied by the series of recommendations by the investigators (Deckard et al., 1986; Fleischer, 1987; Guthrie et al., 1985; Harrison, 1987; Joiner et al., 1982; Roedal & Nystrom, 1988; Seyboldt, 1986).

Joiner et al. (1982) reported the first descriptive study of staff nurse satisfaction using the Job Characteristics Model. The merits of this initial investigation include: the author's clear, concise and accurate representation of the work of Hackman and Oldman; the documentation of the individual job characteristic measures and the overall motivating potential score of various nursing specialities such as medical-surgical, psychiatric, obstetrics, pediatrics and coronary care; and the apparent pragmatic utility of the recommendations.

The sample of staff nurses used by Joiner et al. (1982) represents the population of interest to nurse executives, yet, concerns arise over the use of the Job Diagnostic Survey (JDS) in this particular group of respondents. The authors did not report the reliabilty of the instrument for this predominately female and service oriented sample. The development of the original instrument was based on the response of 658 (male) employees working on 62 different jobs in seven different organizations which represented

seven different businesses and industries. The inferential statistic used to establish the significant difference between the motivating potential scores of the various nursing practice specialties was not reported.

This descriptive study, as reported by Joiner et. al (1982), neither confirms or disputes the underlying theoretical claims of the Job Characteristics Model. The study, likewise, did not contribute to establishing a reliability measure for the instrument in this homogeneous sample of female service workers. In addition, the proposed interaction effect between the job characteristics and the professional nurse's growth need strength were discussed in the conclusions without a substantiating statistical reference.

Since the initial presentation of the Job Characteristics Model in the nursing administration literature (Joiner et al., 1982), the theoretical framework has guided several other studies of professional nurse motivation and satisfaction. Support for the findings of Joiner et al. (1982) were provided by the results of a similar study by Roedal and Nystrom (1988). Professional nurse perception of the job characteristics and their subsequent motivation and satisfaction scores were found to significantly differ ($p<.05$) among professional nursing specialties. Fleischer (1987), using a sample of medical-surgical staff nurses found significant differences ($p<.05$)

in the perception of the job characteristics and the personal outcomes of motivation and satisfaction based on several demographic variables such as age, the number of hours worked per week, and the highest level of education attained. The mean internal concistency of all the Job Diagnostic Survey items was reported as .80 for this group of staff nurses.

Guthrie et al. (1985), in a study of the motivating potential of the job of front-line nurse managers, subscribed to the theoretical assummptions of the original Job Characteristics Model but developed their own tool to measure the variables. Seyboldt (1986) slightly modified the theory by including organizational career stages as an additional variable influencing the perception of the critical psychological states and the outcome variables of job (dis)satisfaction and turnover. Harrison (1987) focused on the identifying the potential moderating effect of the personal measure of growth need strength of the professional nurses working in acute care settings. The theoretical contributions of these empirical studies appear somewhat limited when reviewed using the criteria established by Fawcett and Downs (1986). The use of alternative operational defintions for the theoretical variables within the model makes comparison of the results across studies somewhat difficult.

Utilizing a long-term care facility, Deckard et al. (1986) reported there was not a significant difference ($p<.05$) between the professional nurse's (providing long-term care) measures of motivation and satisfaction and those employees in technical, professional or mangerial jobs. This was the first study to use a professional nurse sample in a setting other than an acute care hospital.

While the reports of the empirical work of the authors (Deckard et al., 1986; Fleischer, 1987; Guthrie et al., 1985; Harrison, 1987; Joiner et al., 1982; Roedal & Nystrom, 1988; Seyboldt, 1986) did not meet all the criteria established for empirical and pragmatic adequacy delinated by Fawcett and Downs (1986), each of the studies have individually contributed to the literature on the use of the Job Characteristics Model with professional nurse samples. Joiner et al. (1982) provided the initial documentation of professional nurse measures of the core job characteristics and motivating potential score of their work as perceived within their respective nursing specialties. The underlying assumptions of the model, which are based on the employee's desire for challenging work, were addressed in two studies (Fleischer, 1987; Harrison, 1987). Fleischer (1987), using Pierson-Product Moment correlations, supported the model's proposed relationship between the job characteristics, critical psychological states, and the personal outcome of motivation. Significant relationships ($p<.05$) between

selected job characteristics and their corresponding critical psychological states and the subsequent personal outcome of motivation were reported. Harrison (1987) supported the affect of the professional nurse's desire for growth need fulfillment and the relationship between the job characteristics and the personal outcome of job satisfaction.

In spite of the ever-increasing number of work design studies employing the theoretical framework of the Job Characteristics Model appearing in the nursing administration literature, the preceeding review found that the empirical activities remain descriptive in design and have not examined or tested the model's originally stated purpose of diagnosing and evaluating work design effects on employee motivation, satisfaction and/or performance (Hackman & Oldham, 1975, 1980). The accumulation of a knowledge base adequate to direct nursing practice work (re)design efforts in organized work settings remain dependent upon the critical review and synthesis of the results and recommendations of prior and concurrent studies.

The potential scientific merit and practical significance of employing the concepts and underlying assumptions of the Job Characteristics Model as a theoretical perspective for designing motivating, satisfying, and high-performing professional nursing practice delivery models depends on the findings of theory-

testing endeavors. Model testing, as a theoretical and methodological activity, provides an empirical strategy "to assist with the identification of latent variables, the ordering of important variables and specification of the relationships of the variables to one another" (Stember, 1986, p. 104). Descriptions of the job characteristics, growth need and the outcome measures of motivation and satisfaction has preceded the identification of the relationship between the theoretical variables. However, the strength and direction of these relationships and their effectiveness in predicting the work outcomes of performance, quality and productivity has yet to be established.

Professional Identity

Professional identity has been developed as a multidimensional construct relative to the internalization of an occupational referent group's beliefs, norms, values, and behavioral expectations (Brenner, 1986). Professional identity's conceptual origins are rooted within the discipline of sociology.

The sociological approach to professionalism views a profession as an "organized group which is constantly interacting with society, which performs social functions through a network of formal and informal relationships, and which creates its own subculture requiring personal adjustments as a prerequisite for career (occupational)

success" (Greenwood, 1984, p. 13). This third aspect of professionalism - personal adjustments as a requisite for occupational success - can provide insight into the origins of an individual's development of a professional perspective on the perception of the job and outcomes of the work.

The findings of several studies suggest that, for some employees, the perception of the work may have been influenced by a system of beliefs which signify professions: autonomy; achievement; specialized body of knowledge and skill; social value and an increased intrinsic worth of the work. Stone et al. (1979) concluded that measures of achievement and autonomy do not have the same relationship to the perception of the job characteristics as does growth need strength. In a study of public health nurses, perceptual differences in the motivating characteristics of the work were found to be associated with the individual nurse's educational preparation and professional association identification and membership (O'Reilly et al., 1980). More recently, Fleischer (1987), in a sample of medical-surgical staff nurses, reported an inverse relationship between highest level of education attained and both job satisfaction and context satisfiers such as pay and supervision.

Brenner (1991) identified and operationalized a set of distinct dimensions of an individual's degree of socialization into the professional work of nursing. Six

empirically confirmed factors have been developed to measure an individual's sense of professional identity within the profession of nursing: standards of practice; scholarship; individual autonomy and competence; nursing department autonomy; shared governance; and information management.

The process of socialization into a profession entails integrating into one's perspective of a job an alternative view of work, a view more global, autonomous, and altruistic than that of a job, in general. As previously discussed, the work design literature has presented certain specificities regarding the situational occurrence of relationships between the motivating potential of the work, higher order need fulfillment, and the personal outcomes of motivation and satisfaction. Yet, "most motivational theorists do not differentiate between the motivation of professionals and nonprofessionals" (Fuzard, 1984, p. 33).

Vollmer and Mills (1984) offered a reminder that professionalization is a social process which may affect any occupation to a greater or lesser degree. The mechanism which underlies the extent to which the professional identity of professional nurses influences the perception of the work and the personal and work outcomes of that same work has yet to be empirically examined.

Organizational Culture

Organizational culture, a measure of shared thoughts, feelings, values, and behavior between the individual,

group, and organization at large, has recently been identified as a variable for describing the contextual dimensions of the work environment (Deal & Kennedy, 1982; Kilman, Saxton & Serpa, 1985; Peters & Waterman, 1982). Morgan (1986) proposed that, as a metaphor from the disciplines of anthropology and sociology, organizational culture enables researchers to simultaneously address diverse as well as similar aspects of organizational phenomena across different theoretical perspectives. The concept of organizational culture offers insight into how individual employees experience, interpret, and understand organizational values, beliefs, and assumptions about their work-related perceptions, thoughts, and behavior.

Laboratory as well as case studies designed to examine job-related perceptions and behaviors often neglect to discuss the impact of the environmental setting (of the study) on the findings (McDaniel, 1990; Peters & Waterman, 1982). As such, these scientific inquiries are often unable to offer explanations of employee motivation, satisfaction, and performance relative to the setting or particular organizational context.

Jelinek, Smirich and Hirsh (1983) recommended that for an accurate and comprehensive analysis of organizational settings, investigators need to perceive, conceive, and understand the complex nature of organizational phenomena. Smircich (1983b) has identified five research themes which

represent the intersection of culture and organizational theory: cross-cultural management, corporate culture, organizational cognition, organizational symbolism, and unconscious processes and organization. The comparative management literature focuses on describing those aspects of managerial and employee attitudes and practices that cross national boundaries.

An institutionally-defined organizational culture effect on employee, manager, and organizational performance has been substantiated in the literature (Cummings & Schmidt, 1972; Everett, Stening & Longton, 1982; Hofstede, Neuijen, Ohavyv & Sanders, 1990; Jackofsky, Slocum & McQuaid, 1988; Reynolds, 1986; Smircich, 1983a, 1983b). Support for organizational culture transcending national boundries was most often found to be associated with the employee's organizational perceptions of information-sharing, internal vs. external organizational focus, and loyalty.

Organizational culture has also been discussed as a corporate entity. The successful expositions of businessmen, such as Peters and Waterman (1982), spoke to the intuitive appeal and apparent pragmatic utility of the concept of organizational culture, especially for practitioners.

Organizational culture, when operationalized as shared symbols and meanings, has been linked to dynamic leadership

styles, effective group decision-making and participation and commitment toward organizational goals (Meglino, Ravlin & Adkins, 1989; Peters, 1978; Smircich & Morgan, 1982; VanMaanen, 1977). Van Ess-Coeling and Wilcox (1988) reported subtle but significant differences in the measure and interpretation of organizational culture between group-level managers and their staff's decision-making style as well as between management and the individual work group.

In their investigation of cultural differences between hospitals which varied on their level of organizational performance, Kramer and Hafner (1989) found stronger value congruence between the professional nurse and the master-prepared clinical nurse specialist than between the nurse and front-line manager, regardless of setting. Of significance to this particular study, however, was the finding that both job satisfaction and perceived productivity were higher in the professional nurse group employed by the high performing hospitals.

The Task Force on Nursing Practice in Hospitals (American Academy of Nursing, 1984) reported that there are institional environments for magnetism. The organizational characteristics of these magnet hospitals appear quite similar to the cultural aspects of other successful organizations (Peters & Waterman, 1982): shared values, participative management style, strong leaders, perception

of a quality product, autonomy on the job, and continuous efforts toward improvement.

Job Satisfaction

A basic definition of job satisfaction can be stated as the positive feelings of the employee about their work. Locke (1969a, 1969b) discussed three possible components of job satisfaction: the job itself, the perception of the job in the employee's mind, and the interaction between the employee and the work environment.

Petty, McGee and Cavender (1984) conducted a meta-analysis of the relationships between the concepts of individual job satisfaction and individual performance as presented in over three decades of literature. The authors concluded that job satisfaction and job performance are positively correlated.

Loher, Noe, Moeller and Fitzgerald (1985) published a meta-analysis of the relationships between job charateristics and job satisfaction. The authors reported that the results of the analysis of 28 work design studies provided support for the Job Characteristics Model and accompanying instrument. The correlation between the motivating potential score of the job and job satisfaction was .40. The correlation between the job characteristics and job satisfaction for employees who are high in growth need was reported as .68, for employees low in growth need, the correlation was .38.

Using the responses obtained from the Job Diagnostic Survey, a structural equation analysis of the Job Characteristic Model was recently performed on data collected from 208 employees white-collar government employees (Hogen & Martell, 1987). When multiple statistical variations were tested, only one of the alternative conceptualizations outperformed the original model. However, the scientific merit of an atheoretically derived but statistically supported models is questionable. The statistically significant alternative model, while parsimonious, does not account for the known complexity of phenomena related to employee responses to the job or the personal outcomes of work.

Simpson (1985) has directed the nurse executive to identify those aspects of the nurse's work that contribute to staff nurse satisfaction and performance so that the quality of nursing care as well as the quality of the employee's work life can be maintained or improved. In addition, the job satisfaction of health care professionals has been reported to influence the quality of service (Sarota, 1976; Timmerick & Randall, 1981).

The preceding review of job satisfaction research has lead to the conclusion that a finite definition and composite measure of job satisfaction and it's correlates continue to evade the researcher. Job satisfaction has been examined using frameworks ranging from those as narrow as

need deprivation to others as broad as attitudinal perceptions (Blegan, 1993). Attempts have consistently been made to find a causal relationship between job satisfaction and performance (Fisher, 1980; Lawler & Porter, 1967; Petty et al., 1984; Wanous, 1974). The theoretical rationales used to explore this relationship are as varied and mixed as the results and recommendations themselves. However, the results of recent meta-analysis studies of the Job Characteristic Model (Loher et al., 1985; Petty et al., 1984), support further investigations using diverse samples, alternative settings and higher order statistical approaches.

Quality

Societal awareness of quality service, in general, but most notably, the quality of health care service in particular, has proliferated within the last decade. The ubiquitous nature and use of the term contradicts the absence of a generally accepted definition of quality in the health care literature today. A decade ago, quality health care was viewed as consisting of the appropriate application of medical science to patient care, with due regard to the risks versus benefits associated with that same care (Gillis, 1982). Today, Steffan (1988) expressed the opinion "that perhaps we know, intuitively, what quality health care is, so we never bother to work through the necessary preliminary matter of defining it" (p. 56).

Within the framework of a concept analysis, Frost (1992) reported that the attributes of quality include: "modifier or referent; the judgement of the presence of quality as based on standards that have been developed by an individual, group of individuals or society, and relative degree" (p. 66). In addition, Frost (1992) identified possible referents for the concept of quality but did not evolve a theoretical definition. "The quality of health care is a multi-faceted concept, therefore, the current use of the documentation of technical skills performed, physical outcomes, and patient satisfaction are merely aspects of the concept, and not equivalent with quality of service" (p. 67).

In business and industry, the definition of quality is much more straightforward: the capacity of a product to fulfill its intended purpose, while produced at a minimum of cost (Feigenbaum, 1951). A distributor would define quality for the manufacturer who, in turn, would define quality for the raw materials dealer at a price each could afford or the market would bear. The accountability for quality, from an industrial perspective, was vested in meeting the expectation of only one referent group. The preceding explanation offers insight into the complexity of the task of defining the quality of health care.

Over the years, the quality of health care has become the vested interest of society at large. Therefore,

definitions of the quality of health care have become a relative measure based on the expectations of multiple and diverse referent groups within society. The relative nature becomes increasingly apparent when each of the stakeholders within the health care industry and society offer a distinct and unique perspective on the definition of quality. Frost (1992) recommended incorporating the following stakeholder perspectives into a definition of quality: societal values, patient values, nursing values, administrative values, legal interpretation, legislative enactments, and accreditation bodies. Additional referent groups that could be incorporated into a definition of quality health care from the stakeholder's perspective include physician values, suppliers to the industry, and third-party payors, to name a few. However, a theoretical definition of quality incorporating the critical attributes as identified by such a diverse group of stakeholders would be difficult to operationalize.

Bliersbach (1988), an administrator of mental health services, discussed the potential difficulties with addressing specific patient populations or treatment protocols and therapies in a generic definition of quality health care. "The best definition of quality would combine the patient's perception of success following treatment and selected indices of effective and efficient use of hospital resources during the course of treatment. This promotes a

comparison between how the hospital delivers care and how the patient perceives the outcome of that care" (p. 317).

The comments of Bliersbach (1988) add another dimension to the relative nature of quality. In addition to being relative to the expectations of individuals, professionals, and society, the quality of care would also appear relative with regard to the performance standards accepted across organizations in the health care industry.

Donabedian (1988) has suggested three various definitions of quality which seem to be derived from the philosophy of ethics and based upon the premise of the benefits versus the harm of care. An absolutist definition considers the possibility of benefit and harm to an individuals health status as valued by the practitioner, with no attention to costs. The individualized definition of quality recognizes the patient's expectations of benefit and harm as well as other consequences to the consumer, such as access and reimbursement. A societal perspective incorporates the overall costs of health care relative to benefit and harm while cognizant of the distribution of care as valued by the population at large. Donabedian (1988) recommends a balance between the three perspectives in formulating a definition of quality. Within these three perspectives, Donabedian (1988) has synthesized a industrial indice of quality by including cost, the medical community's

Hippocratic commitment to do no harm, and the nursing profession's regard for the individual.

An empirical search of the language and meaning of quality, care, and the quality of care in an acute care organization was undertaken by Jackson-Frankl (1990) and a sample of nurse executives, managers, and staff nurses. Using semi-structured interviews, the principal co-investigator posed questions to the respondents on the meaning of and definitions for the concepts of quality, care, and quality of care.

The nurse executives remarked that standards precede quality. Standards of professional practice provide the benchmark of quality for the discipline as a whole. Nurse managers linked quality to the technical skill level, the decision-making ability, and the "internal values personified through the attitude and approach" (Jackson-Frankl, 1990, p. 59) of the individual professional nurse.

Professional nurses perceived little semantic difference between the terms quality, care and quality of care. For this group, the referent for quality included delivering patient care, irregardless of time and organizational constraints: "doing the best you can with the resources you have available" (Jackson-Frankl, 1990, p. 61).

The results of this qualitative study support the contention that by its very nature, quality is a value-laden and relative construct. Professional nursing quality, as

perceived by the entire sample, can be positively or negatively influenced by personal, professional and organizational factors.

Brett (1989) has theoretically defined quality nursing care "as the achievement of explicit standards or criteria that have been formulated by authorities, norms, or scientific testing, with consideration of the values and variables unique to a specific situation of nursing care" (p. 355). [This definition does not take into account the financial aspects involved in providing quality.] However, this definition appropriately includes a professional dimension which was missing in other formulations - the relationship of research to practice.

Attempts to measure the quality of professional nursing care began with Nightingale. By continuously observing and documenting changes in the patient's condition, the nurse's actions and the environment they shared, Nightingale was able to improve the quality of the nursing care provided in nineteenth century hospitals as well as the care provided on battlefields in foriegn terriorities. Twentieth century nurses use similar observation and documentation techniques to measure the aspects of nursing care identified by Nightingale a century ago. Outcomes measures of quality address the patient's health status. Process measures of quality evaluate the professional nurse's delivery of care

and structure measures assess the impact of environmental components on the quality of care.

Donabedian (1966) originally conceptualized quality as possessing structure, process and outcome dimensions. Propositions derived from Donabedian's framework of quality assert that the process of care is related to the outcome of care, and that the structure within which the process of care occurs either hinders or enhances the effectiveness of the care (Brett, 1989). Outcome measures of quality are the ultimate criteria by which the structural and the process measures can be validated. The measurement of outcomes within specific patient populations has become the priority for clincial nurse specialists and researchers.

Nursing administration researchers usually focus on investigating process or structure measures of quality (Jones, 1989). Access to structure outcome measure data such as method of care delivery, staff mix, and personal and professional characteristics of the staff as well as the inexpensive nature of collecting and analyzing the data provide the rationale for the use of structure outcomes in nursing administration research.

The use of patient satisfaction surveys to measure a process dimension of quality has recently become popular among health care administration researchers (LaMonica, Oberst, Modea & Wolf, 1986). The proliferation of the use of patient satisfaction surveys, appears to be an outgrowth

of concerns of administrative practitioners regarding the implications of customer satisfaction on the financial stability of the organization.

Developing reliable and valid process measures of quality challenges professional nurses, quality improvement practitioners as well as the accrediting agencies. The Joint Commission on Accreditation of Healthcare Organizations (1989) has untaken a study of the measurement of reliable process measures of quality in acute care hospitals. Future accreditation standards will reportedly evolve from this pioneering work.

While process measures of quality can be directly observed or retrieved from patient records, developing and testing (for inter-rater reliability) criteria by which to establish the measure is a time-consuming activity. Identifying indicators which capture the process of professional nursing from the documentation within patient records should be appreciated as a conceptual challenge. Specific activities, such as the time taken to complete an admission assessment or the occurrence of medication instruction are often used as indicators of process quality since comparisons can be made across patient populations and nursing units within hospitals.

Brett (1989) recently identified research priorities for investigating the quality of professional nursing care. The priorities include: "organizational studies which focus

on the cost-benefit implications of specific outcomes; and studies of the relationship of patient outcomes and contiguous nursing processes, especially controlled experimental designs" (p. 366). The identification and description of a theoretical link between individual measures of performance and quality and unit level measures of productivity and quality would assist with the development of an operational definition of quality suitable for use across similar units and organizations.

Productivity

Productivity has recently received increased empirical attention in both manufacturing and service industries. The apparent nontranferability of productivity standards so widely used in manufacturing and technology have prompted a closer examination of the correlates of service productivity. This review presents an overview of the perspective of productivity as currently espoused by the disciplines of behavioral management, industrial engineering, and nursing administration.

In light of current social and environmental trends, such as the aging of the general population, the consumer movement, and the high cost and shorter life of technology (Gould, 1988), productivity has become focused on more than raw materials, capital acquisition and expenditures, and wages (English & Marchione, 1983). The Productivity Determinant Model, as developed by English and Marchione

(1983), proposed that an organization's administration and their management strategies are accountable for the productivity of individuals, work groups, and the organization at large. The model positeds that "management focus attention on identifying the internal structure, process, and leadership components of the work setting that affect the productivity of the employees" (p. 65). The design of jobs, as a part of the internal structure of the organization, could influence the employees's perception of both the job and it's personal and work outcomes.

Miller (1977) posited that there was a distinct aspect to the productivity of the knowledge worker (as compared to manual/technical workers). This distinction was based on the assumption that individual employees psychologically respond differently to various organizational characteristics. This individual response could have personal (Hackman & Oldman, 1975) origins. Professional (Brenner, 1991) or environmental (Cooke, 1990) origins are also plausible.

Miller (1977) concluded that "the core of the [productivity] answer may appear to be a work environment, where the employee can match personal, professional, and organizational goals, while simultaneously having the freedom, support, and challenge of personal growth" (p. 77). It would appear that Miller (1977) proposes an interaction between the employee's desire for a challenging job, their

professional orientation toward the work and a supportive organizational environment. The theoretical framework of this study shares the same assumptions about professional employees, work, and the organization.

In a more recent discussion of white-collar productivity, Little (1981) dismissed the applicability of manufacturing productivity indices for use in service industries. This opinion was based on the perception of potential differences between the nature of the work, the timeframe for completion of the work, and the observability of the results of the work. Yet, service productivity does include aspects of manufacturing productivity. In addition to the manufacturing indices of efficiency and quantity, "effectiveness [quality], customer satisfaction, and employee satisfaction should be incorporated into an aggregate measure of productivity in service industries" (p. 10). Patient outcomes, whether measured objectively by clinical nurse researchers or subjectively by the health care marketers, has become a priority for the health care industry.

Suver and Neumann (1986) support "the development and the use of organizational performance standards whereby fixed [hospital] costs are separated into acceptable and pragmatic surrogate variables" (p. 44). The authors proposed that health care managers, (and albeit professional employees), can "better relate to a standard unit of

consumable resources, such as hours per patient day or physician visits per office" (p. 46), rather than direct bottom-line financial information. In a more recent study of nursing productivity in an acute care hospital, Suver and Helmer (1988), employed nursing care hours per patient day as the measure of productivity. The patient classification system acuity data was used to generate budgeted and actual nursing care hours per patient day.

Nurse executives need to be aware of potential professional consequences of having business and financial academics examine and recommend mechanisms for monitoring professional nursing productivity (Curtain & Zurlage, 1986; Haas, 1984). If professional nursing practice becomes measured by another discipline's perspective of productivity there may be continued (over)reliance on pre-established measures (hours/day) without appropriate regard for the actual patient outcomes related to the work and worker involved in process of a professional nursing practice. While acknowledging the pragmatic appeal of such measures, the nursing administration researcher must remain cognizant of the critical practice link between the structure, process, and outcomes of nursing productivity measurement. Hours are a measure of structure in an organization (i.e., the product of scheduling and staffing). Designing professional practice models, especially in acute care organizations, will require a more process-oriented measure.

An effective productivity measure "requires the development of an index [of multiple indices] that identifies the contribution of each factor of production" (Chew, 1988, p. 114). The author's recommendation was an "emphasis on labor content per dollar, rather than mere labor costs" (p. 110). The quantification of service productivity should focus on connecting an employee's action (work) to the organizational output measure of interest. Chew (1988) refers to a measure of service productivity which theoretically addresses the impact and input of the employee, the work and the organization. Designing appropriate work intervention strategies for the future implementation of critical paths of care will need to adhere to a theoretical perspective closely resembling that recommended by Chew.

The Organizational System Performance Management Model (Sink, Tuttle & DeVries, 1984) depicts a systems model of productivity. Within the model, Sink et al. (1984) conceptualized a distinction between the function of efficiency and the function of effectiveness in the feedback loop of the model. Effectiveness provides administrative feedback on quality, innovation, and quality of work life thereby influencing an organization's strategic planning functions (which often prescribe the organizational culture). Of particular interest to service industries, is the function of efficiency. Feedback as related to

efficiency provides information related to the clarity of the organization's mission, goals, and strategic purpose. The theoretical merits of this systems approach, which posit that the feedback loops influence productivity, have yet to be established.

From the behavioral management perspective, service productivity in service industries differs from that of manufacturing and technological productivity. There are multiple and divergent opinions upon the theoretical origins of these differences. There are behavioral management studies which support the characteristics of the worker (Miller, 1977), the characteristics of the work (Little, 1981) as well as the characteristics of organizations and the service industry (Suver & Helmer, 1988; Suver & Neumann, 1986).

A conceptual framework for hospital nursing unit productivity was recently presented by Omachonu and Nanda (1988). This model focuses on developing a measure of productivity at the unit rather than organizational level. To the credit of the originators of this systems model, their conceptualization of the possible determinants of hospital nursing unit productivity was particularly inclusive. Their attention to the distinction between the work of the various levels of health care personnel, the accurate representation of the nursing process and nursing

diagnosis, and the inclusion of nursing indicators of quality should be noted.

These two industrial engineers defined nursing unit productivity as "the ratio of input to output; where input is stated as the costs of all revenue consumed and output is stated in terms of the total diagnostic-related groups (DRG's) revenue generated by all the patients admitted to the nursing unit" (Omachonu & Nanda, 1988, p. 57). Input consisted of the cost of direct nursing care, indirect nursing care, room and board, as well as the unit's fixed, variable and overhead costs.

Omachonu and Nanda (1988) operationalized productivity as a relative construct. Productivity becomes meaningful only when compared with expected or goal-related organizational and/or industry standards of performance. Thus, the measure of output is represented by the revenue generated by patient DRG categories. The use of DRG categories permits comparisons between departments in a organization (i.e., inpatient vs. outpatient) and across similar organizations and geographic areas.

Nurse executive's exception to the original model's output measure of nursing unit productivity prompted Omachonu and Nanda (1989) to differentiate between hospital unit output and nursing outcome. The second generation model included the potential influences of: the use of the nursing process within the function of the unit; the

professional competencies of the unit personnel; the technical, structural and organizational components of the unit; the management and leadership characteristics at the unit level; and patient factors such as satisfaction and follow-up care upon discharge. Quality assurance data (percent compliance to pre-established clinical indicators of care) were used to calculate unit performance outcome measure. The outcome measure represented a clinical component of productivity; whereas the output measure in this case was a financial component.

Industrial engineers, Omachona and Nanda (1989), have identified a viable unit level outcome measure for nursing administration researchers. While theoretically acknowledging the complexities involved in identifying all of the variables associated with an outcome-based model of professional nursing productivity, compliance to clinical indicators of care provides a tangible and pragmatic measure, especially at the unit level.

The initial study (Jelinek & Dennis, 1976) of nursing productivity was supported by a grant from the Department of Health, Education and Welfare almost two decades ago. The concerns of government, industry, and the profession that prompted the investigation of nursing productivity in organized settings remain relevant today. The cost of nursing care in relation to overall health care costs, the effectiveness of hospital nursing unit staffing patterns,

and the appropriateness of industry-based output measures such as personnel per licensed bed or nursing hours per patient day continue to be investigated.

The work of Jelinek and Dennis (1976) should be respected for its pioneering effort in investigating professional nursing productivity. According to Jelinek and Dennis (1976), nursing productivity encompasses both the efficiency of professional nursing care, which is the production of nursing output with minimal waste and the effectiveness of that care, which relates to it's appropriateness and it's quality. In a critical review of the work of Jelinek and Dennis (1976), Aydelotte (1976) commented that the components of a framework addressing nursing productivity should be described as processes and outcomes (patient) in terms meaningful and understandable to all health care administrators (not just nurses and nurse administrators).

The perspective of Haas (1984) reiterated the concerns of some of the business management literature that "nursing, as part of a service industry, appears to be locked into specific measures of labor productivity because the measures related to caring are often criticized as being too abstract and general" (p. 40). Haas (1984) recommended an examination of the components of the nursing process as a means to develop measurement tools. An analysis of the components of the nursing process were proposed as a means

to develop measurement tools which could account the distictive aspects of professional nurse work. The existing measurement instruments of the industry (acuity indices both RIMS and PCS, nursing diagnosis and structure, process and outcome measures) need further operational refinement to capture the nursing process and its relation to the work outcome of productivity.

Edwardson (1985) has cautioned against the use of patient classification data in the assessment and measurement of nursing productivity citing multiple limitations. The author cited the following limitations associated with the use of patient classification data: the underlying reliability and validity of an organization's classification system; the failure of the classification to the relative skill level required to carry out the projected nursing care; and the impact of organizational operational and financial policy related to the use of the classification data.

Edwardson (1985) proposed using individual patient outcome measures rather than aggregated patient classification data. Patient outcome measures, categorized into levels of expected achievement toward health-related goals or severity of illness indices, were seen as more clinically relevant. While acknowledging the profession's clinical commitment to the care of the individual, financial reimbursement for the care occurs at the aggregate level

(per DRG). Thus, the nurse executive, with responsibility for professional nursing practice across an entire organization, might find individual level data less informative and less financially relevant than data gathered at the unit level (with similar DRG grouping).

Edwardson (1989) has called for a pragmatic measure of productivity. The "analytic task of models addressing nursing productivity is the identification and development of the operational definitions of output and outcome which are acceptable to the industry, rather than merely professionally optimal" (Edwardson, 1989, p. 376). The author's recommendation was to examine the potential use of output and outcome measures that incorporate established operational guidelines of the health care industry and professional nursing standards that already meet governmental, legal and accrediting body standards.

Contemporary nurse executives have identified three factors which influence the provision of nursing care hours per patient day (Kirby, 1986). The diagnostic-related grouping case mix, the respective institutions practice standards, and staff mix were prioritized as the top three variables. The 216 nurse administrators in this descriptive survey perceived differences in the importance of staff mix to measures of quality and productivity. In an analysis of patterns of nursing requirements within diagnosis-related groupings (DRG), Richards, Hexum and Anderson (1987) found

the highest frequency of patient demands occur with the activities of assessment and continous monitoring. A recent review of several case studies which focused on the relationship nursing care hours and DRG, reported considerable nursing unit variation in the amount of nursing care hours actually provided on a daily basis both within and across the most frequently identified DRG case mixes (Cromwell & Price, 1988).

The most comprehensive conceptual model of professional nursing productivity was developed by Curtin and Zurlage (1986). The explanatory power of the model comes from it's comprehesive inclusion of previously unmentioned, but albeit, legitimate additional determinants of productivity: the community, iatrogenic complications, and recidicism rate. Several new contructs were introduced within the propositions of the model: negotiated outcomes, durability of nursing services, servor-served interface, and secondary customer outcomes. Within these constructs, the patient and the organization become a much more apparent component of the input of productivity. Input was defined as the number of patients served, including indices for their functional competence and the amount of secondary customer outcome. Output was defined as the service attribute mix, which consists of the patient attributes, the nurse attributes, and institional resources. The productivity index which was

developed employed the traditional ratio of outputs to inputs.

Curtain and Zurlage's (1986) professional productivity model and corresponding index were conceptually appealing considering the underlying (nursing) process base and wholistic approach to the professional nursing productivity. The level of congruence between the theoretical definitions of the concepts, nursing process, practice standards, and the management perspective of productivity was noteworthy. Yet, the less than parsimonious approach to the phenomena and the complexity of the operational definitions inhibit immediate testing. The heuristic value of this emergent empirical work should not be overlooked. The authors have called for a simplier, well-constructed productivity measure to provide information on the trade-offs that process-focused measures, have been unable to provide (Curtin & Zurlage, 1986).

Productivity, in general, has been found to possess a standard, well-accepted definition - the ratio of outputs to inputs. In addition, Curtain and Zurlage (1986) have reported that "much of the data that is needed to measure nurisng productivity is already available, the measures only need rearranging for an appropriate analysis" (p. 32).

The benefits of measuring professional nursing productivity as delineated by Kirk (1986) include: "refining a measurement tool for monitoring manpower utilization in

all nursing departments and related cost centers, based on service volume and patient acuity; enabling the use of quality-based time (nursing care hours) standards; and sucessfully managing costs and cost-containment efforts" (p. 4). However, a measure of professional nursing productivity derived from the staff nurse's perception of the work, the impact of personal, professional and organizational variables, and the hours of care received by medical-surgical patients within the same DRG case mix has not been documented in the literature.

Summary

With the literature recommending a closer look at the characteristics of the work of nursing (Brief, Aldag & Jacox, 1978; Curtain & Zurlage, 1986; Edwardson, 1985, 1989; Haas, 1984) and citing the staff nurses' need for growth and satisfaction (Fleischer, 1987; Harrison, 1987; O'Reilly et al., 1980) support for an investigation into the work of nursing from the work design perspective was evident. The application of the Job Characteristics Model (Hackman & Oldman, 1975, 1980), as a theoretical perspective of professional nurse motivation and satisfaction, has been documented in the literature (Deckard et al., 1986; Fleischer, 1987; Guthrie et al., 1985; Harrison, 1987; Joiner et al., 1982; Roedel & Nystrom, 1988; Seyboldt, 1986). However, this review and analysis of studies employing the Job Characteristics Model, as a theoretical

framework addressing professional nurse motivation and satisfaction, revealed that the model has yet to be tested as originally proposed by Hackman and Oldham (1975). In addition, the outcome variable of efficient and effective performance has not been examined or measured with a professional nurse sample. Consequently, the work (re)design efforts of nurse executives have yet to benefit from the theoretical contributions inherent in work design theories, such as the Job Characteristics Model or theoretical extensions.

The proposed theoretical extension of the work design model would account for the potential influences of the job characteristics, the personal and professional needs of the nurse as well as the practices, policies and goals of the organization. Support has been documented for a personal dimension in the perception of the job characteristics, with both all-male samples employed in highly bureucratic and authoritative jobs such as the armed forces (Dunham et al., 1977) and with professional employees working as scientists, engineers and managers (Brousseau, 1978; Brouseau & Prince, 1981; O'Reilly, 1977). The professional dimension in the perception of the job characteristics has also been documented by organizational behaviorists intertested in the identifying the moderating variables related to the personal outcomes (Arnold & House, 1980; Champoux, 1978; Cawsey et al., 1982; Harrison, 1987; O'Reilly et al., 1980; Stone et

al., 1977) as well as the work outcome of performance (Hackman & Oldham, 1975; Little, 1981; Miller, 1977). Yet, these reviewed empirical works, which were based on the theoretical tenets of the original Job Characteristics Model, may have limited external validity due to potential gender biases (male samples) and the solicitation and participation of industrial-based job incumbants.

The impact of the work environment on the perception of the job characteristics and subsequent personal and work outcomes of employees has yet to be investigated. An environmental impact on individual and organizational performance (Deal & Kennedy, 1982; Hofsteade et al., 1990; Jackofsky et al., 1988; Kramer & Hafner, 1989; Peters & Waterman, 1982; Reynolds, 1986) has been reported.

West (1983) recommended that nurse executives respond to the staff nurse's professional needs by focusing on the priorities of appreciation and recognition, educational opportunities, intellectual stimulation, opportunities to be innovative, a sense of achievement and knowing one has helped others. These priorities have grown out of a desire to professionalize the work of nurses in structured organizations (Dear, Weisman & O'Keefe, 1985; Kramer & Schmalenberg, 1988a, 1988b). However, developing such work design initiatives and incentives programs require attention to the professional dimension of work and an organizational environment to support interventions (Albert, 1989;

Campbell, 1986; Van Ess-Coeling & Wilcox, 1988) and theory of work design to guide the nurse executive. The inclusion of variables such as professional identity (Brenner, 1991) and organizational culture (Cooke & Rousseau, 1988; Curran & Miller, 1990; Thomas, Ward, Chorba & Kumiega, 1990) in a theory of work design and study of the personal and work outcomes of professional nursing practice can address diverse and multi-level phenomena related to the management of the practice of professional nurse employees in acute care organizations.

CHAPTER III

METHODOLOGY

The design of the study is presented and the criteria for sample and setting selection are identified. Each of the instruments used in the study is reviewed and the procedures for protecting human subjects and meeting each respective Institutional Review Board requirements are discussed. The procedure for data collection and the plans for data analysis conclude this chapter.

Design

This study employed a nonexperimental correlational survey design. In correlational research, the independent and dependent variables are concurrently measured. The strength and direction of the relationship(s) between them are subsequently assessed. The independent variables in this study were: the motivating potential of the job; growth need of the employee; the critical psychological states; professional identity of the nurse; and the organizational culture of the acute care hospital setting. There were two levels of dependent variables: individual level and unit level. The individual-level dependent variables were internal motivation, job satisfaction, perception of quality and performance. The unit-level dependent variables were quality and productivity.

Sample

The sample for the study was drawn from the population of registered professional nurses currently employed by three acute care hospitals in southwestern Pennsylvania and who work on medical-surgical nursing units. Two hundred fourty-four professional nurses were solicited to participate in the study. Approximately 20 professional nurses were employed on the four medical-surgical nursing units within each of the acute care hospital settings.

McLaughlin and Marascuilo (1990) have recommended at least 20 respondents per variable be obtained for statistical procedures involving multivariate procedures such as path analysis or model-testing. Cohen (1988) has stated that "the larger the sample size, the smaller the error, and, the greater the reliability or precision of the statistical results" (p. 7).

A sample of at least 115 professional nurse respondents was initially projected for the planned statistical analysis of this study. Sample size calculations were performed using alpha .05, power .80, and effect size .40. [Effect size has been defined as "a measure of the strength of a relation; an estimate of the degree to which a phenomenon is present in a particular population" (Vogt, 1993, p.79)]. A survey response rate of at least 50% would have had to be achieved to obtain the desired power for the effect size assuming the type I error rate used to calculate the sample size. However, with a study response rate of 44% an effect size of .50 could be detected, with .80 power assuming alpha was maintained at .05.

Setting

The acute care hospital settings possessed similar organizational characteristics. Each is licensed to operate at least 500 acute care beds. They are affiliated with hospital-based diploma schools of nursing and offer physician residency programs in a variety of specialties.

There were two levels of inclusion criteria for participation in the study: organizational and unit. Organizational level criteria required the use of the same patient classification system to rate patient acuity. The Critikon Patient Classification System was used on all the medical-surgical nursing units within each hospital setting to calculate the daily nursing care hour requirement per patient. Inclusion criteria for medical-surgical nursing unit participation in the study stipulated at least a 70% agreement among the diagnostic-related group (DRG) case mix of the patient populations for the individual nursing units in each hospital. A listing of the top ten DRG case mix within the four medical-surgical nursing units of each of the acute care hospital settings can be reviewed in Appendix A.

Instruments

The Job Diagnostic Survey

The Job Diagnostic Survey (JDS) was used to measure the independent variables of the motivating potential of job, the critical psychological states, and the growth need strength of the employee (Appendix B). The dependent variables of the personal outcomes of motivation and job satisfaction were also assessed using the JDS. The JDS

contained a total of seven sections and takes approximately 20 minutes to complete.

The measurement items within the JDS are an extension of the Requisite Task Attribute Index as developed and tested by Turner and Lawrence (1965) and later revised by Hackman and Lawler (1971). The JDS was developed as an assessment instrument to determine whether and how existing jobs can be improved to increase employee motivation, job satisfaction, performance, and to assist in the evaluation of the effects of work (re)design changes on employee responses to those jobs (Hackman & Oldham, 1980). Initial development of the survey was based on the responses of 658 employees working on 62 different jobs in seven separate organizations (Hackman & Oldham, 1975). Refinement of the tool and the measures occurred over a two year period. Four revisions resulted from the data obtained from over 1500 employees working on more than 100 different jobs in 15 organizations (Hackman & Oldham, 1976). The results of these instrument development studies suggested that both the internal consistency reliability of the scales and the discriminant validity of the items were satisfactorily obtained (using factor analysis techniques and inter-item correlations), tested, and refined.

The Chronbach alpha coefficients of the individual measures of the JDS have been reported: skill variety .71; task identity .59; task significance .66; autonomy .66; feedback from the work .71; experienced meaningfulness of the work .74; experienced responsibility for the work .72; knowledge of the results of the work .76; growth need strength, would-like .88, job-choice .71; internal

motivation .76; and general satisfaction .76 (Hackman & Oldham, 1975, 1976). In general, the results suggest that the internal consistency reliabilities and discriminant validity of the scored items of the Job Diagnostic Survey are satisfactory (Hackman & Oldham, 1976, p. 270). "The Job Diagnostic Survey and scoring instructions are not copyrighted and therefore may be used without the author's specific written permission" (Hackman & Oldham, 1980, p. 275).

The first independent variable, the motivating potential of the work, was calculated as a cumulative measure of the five core job characteristics: skill variety, task identity, task significance, autonomy, and feedback from the job. The motivating potential score can be viewed as a single measure somewhat parallel to job complexity or job scope. The motivating potential score of a job can range from one to 343. A motivating potential score between 100-200 indicates that the job could be examined and the motivating potential score increased as prescribed by the employee's growth need strength measure.

The JDS measured the core job characteristics of skill variety, task identity, task significance, autonomy, and feedback from the work. In addition to these core job characteristics, the survey also provided measures of feedback from others and dealing with others. There were 15 total items which measure the characteristics of the work.

The JDS also measured the second independent variable of the critical psychological states which consists of the meaningfulness of the work, responsibility for the work, and knowledge of the results of the work. Measures of the three

critical psychological states were obtained from the use of 14 self-descriptive and projective-type survey items. The survey provided two measures of the third independent variable, employee growth need, would-like and job-choice. The 18 growth need strength items were intended to measure the employee's desire to obtain growth [higher order] fulfillment from the work. The growth need strength measure can range from a low of one to a high of seven; with a score of five identified as the first positive response on the Likert-scale. Individual employees with low growth need scores (< 5) are less likely to respond to the motivating potential of the job because of the distraction of meeting lower order needs and dissatisfaction with certain job context measures such as pay, supervision, and social issues related to co-workers.

The dependent variables of the employee's feelings of internal motivation and satisfaction obtained from performing the job were also measured by items within the JDS. The 12 items measuring internal work motivation and job satisfaction were mixed within the survey sections which measured the critical psychological states.

Satisfaction can also include feelings related to pay, supervision, security, growth, and social issues. Employee satisfaction with certain aspects of the work-related context have been shown to effect responses to the motivating characteristics of the job (Hackman & Oldham, 1980). This is based on the premise that some aspects of the job and certain context measures motivate employees whereas others satisfy.

The JDS has been used extensively by organizational behaviorists and industrial psychologists with predominately male samples in business, industry, and military settings (Arnold & House, 1980; Caldwell & O'Reilly, 1982; Dunham, 1976; Dunham et al., 1977; Hackman et al. 1978; Kemp & Cook, 1983; Kiggundu, 1983; Kim, 1980; Oldham, 1976; Oldham et al., 1976; Orpen, 1979; Pierce & Dunham, 1978; Schuler, 1977; Stone et al., 1979; Terborg & Davis, 1982; Thanrenue & Harker, 1984; Umstot et al., 1976). This extensive utilization has provided supportive, mixed and non-confirming results with respect to the reliability of the original instrument. The mixed results suggest certain inconsistencies in the instrument's dimensionality due to sample demographic characteristics, such as level of education and possibly gender and employee organizational commitment. Fried and Ferris (1986) have posited that it would seem reasonable that the personal variables of age and education and the situational/contextual variables of an employee's position in the organization present compelling cases for influencing measures of job perceptions.

In a test of the measurement equivalence between the original version and the revised version of the JDS, Idaszak, Bottom and Drasgow (1988) hypothesized that variations in both the explanatory and confirmatory factor analysis results were due to sampling error as well as measurement error. Data were obtained from a total sample of 269 individuals employed in four separate occupations. One of the four occupational groups selected for inclusion in this measurement study were 140 nurses and nurse aides.

Differences in the dimensionality of the instrument by group were not reported.

Previous recommendations regarding the use of the JDS appear relevant to date (Dunham, 1976; Dunham et al., 1977; Idaszak & Drasgow, 1987). All users of the JDS should empirically examine the underlying dimensionality of the instrument for each and every sample because the constructs often do not appear consistent across samples.

The Brenner Professional Identity Index

The independent variable, professional identity of the medical-surgical nurse, was measured using the Brenner Professional Identity Index (BPII) (Appendix C). The BPII has been reported to empirically measure an individual professional nurse's attitude, belief, and value congruence with the attitudes, beliefs, and values espoused by the discipline of professional nursing. The 31 item instrument is comprised of six empirically confirmed factors and takes approximately 15 minutes to complete (Brenner, 1991).

The original instrument, as developed by Miller and Polenti (cited in Brenner, 1986), was conceived "as reflective of all of the dimensions of practice as suggested by the American Nurses Association's characteristics of a professional practice environment, the American Nurses Association Code for Nurses, the American Nurses Association Standards of Nursing Practice, state nurse practice acts, and recommendations from the Joint Commission of Accreditation of Hospitals" (Brenner, 1986, p. 76). Reliability and validity data of the original 100 item survey were not reported by the developers of the survey. However, an alpha reliability coefficient of .93 was

reported by Brenner (1986) when the original instrument was used in a study of the perception of general well-being among professional nurses.

Subsequent to the original instrument's use, Brenner (1991) has refined, tested, and renamed the original survey [developed by Miller and Polenti (cited in Brenner, 1986)]. Content analysis of open-ended interviews was used to establish the theoretical dimensions and significance of the empirical referents of professional identity. Concurrent psychometric testing of the BPII has included; establishing estimates of the reliability (internal consistency and stability); and the divergent, discriminant and construct validity of the self-report questionnaire. Brenner (1991) has recently reported that the BPII possesses an alpha reliability coefficient of .94.

The Organizational Culture Inventory

The Organizational Culture Inventory (OCI) was used to measure the independent variable of the professional nurse's perception of the environment in which the work of nursing is performed (Appendix D). The OCI measured 12 sets of norms and behavioral expectations associated with three general types of organizational culture (Cooke & Szumal, 1987, 1991). "Norms are shared ways of thinking that specify the ways in which all members of the organization - or least those in similar positions or locations - are expected to approach their work and interact with others in the organization" (Cooke & Szumal, 1991, p. 1).

Each of the culture styles were measured by ten items describing behaviors that might be expected or implicitly required of members of an organization. On an ordinal scale

ranging from one, indicating not at all, through five, which indicates to a very great degree, employees were asked to indicate the extent to which a particular work behavior helps an individual fit in and meet expectations within their organization. Scores can range from 10 (if all the items are given a response of one) to 50 (if all the items are given a response of five).

The OCI was administered as a paper and pencil, self-report objective employee assessment of the norms and expectations of the organizational environment. Personal beliefs regarding what is expected have been found to have a significant impact on the thinking and behavior of members within the organization, their motivation and performance, as well as their job satisfaction and psychological well-being (Cooke & Szumal, 1987; Cooke & Rousseau, 1988).

Reliability and validity testing of three versions of the OCI occurred over an eight year period (Cooke & Fisher, 1985; Cooke & Lafferty, 1984, 1989; Cooke & Rousseau, 1988; Cook & Szumal, 1987; Klein & Cooke, 1989). Measures of three types of reliability (internal consistency, inter-rater, and test/retest) and two types of validity (construct and criterion-related) have been reported based on data obtained from 4,919 respondents in 256 subunits of at least 56 organizations.

The construct validity of the 12 subscales of the inventory as reported by the authors are within an acceptable range (Cooke & Szumal, 1987, 1991). Factor analysis results provided general support for the construct validity of each of the subscales within the survey. The rotated factor loadings for the OCI subscales have also been

substantiated (Cooke & Rousseau, 1988; Cooke & Szumal, 1987, 1991).

The Cronbach alpha reliability coefficients are based on data provided by 526 respondents in 18 organizations and 135 executive development program participants (Cooke & Rousseau, 1988). Cronbach alpha coefficients for each of the 12 OCI subscales ranged from .67 for the oppositional scale to a high of .92 for the affiliative scale. (The 3 cultural styles of an organization as deliniated by Cooke and Rousseau (1988) can be reviewed in Appendix E).

The Nurse's Perception of Quality Scale

The dependent variable of the work outcome of quality was measured at the individual level using the Nurse's Perception of Quality Scale (NPQS) (Appendix F). The NPQS is a five factor, 56 item, Likert-scale survey (Lynn & Sidani, 1991). The six point Likert-scale of the responses to the survey items ranges from zero, indicating that the item is not important, through five, which indicates that the item is very important to the quality of care.

The NPQS was originally conceptualized within a grounded theory framework employing concurrent interviews of professional nurses (Lynn & Sidani, 1991). The data categories derived from the initial professional nurse interviews were continuously refined based on the content analysis and review of the categories by another professional nurse sample. The third group of professional nurses solicited ranked (on a scale of one through five) the a priori categories as indicators of the quality of professional nursing care. The original categories were then formatted into a 138 item instrument.

Analysis of the original 138 item NPQS resulted in the deletion of 82 of the 138 initial items. Principal component factor analysis resulted in a five factor solution which accounted for 49% of the total variance in the professional nurse's perception of quality. The internal consistency estimates for the factors within the revised 56 item version of the NPQS are reported to range from .79 to .96.

Performance

The dependent variable of the work outcome of performance was measured at the individual level using three five-point Likert scale questions. The questions asked the professional nurse respondents to rate their on-the-job performance from their own perspective, their peers' perspective as well as the perspective of their manager. These performance measures are the last three items listed on the Demographic Data Form (Appendix G).

Unit-Level Quality

A unit-level measure of the dependent variable of quality was assessed using the clinical indicators established by the nursing division within each respective acute care hospital to meet the standards of the Joint Commission on the Accreditation of Healthcare Organizations. The clinical indicator measures of unit-level quality included: patient education, fluid balance, nursing process, universal precautions, patient safety, and skin integrity. The clinical indicators which represented the quality of professional nursing care were consistent across all the medical-surgical nursing units but one.

Unit-level Productivity

The dependent variable of the unit-level work outcome of productivity was measured using the hours of nursing care generated from the patient acuity data within the Critikon Patient Classification System (Appendix H). The medical-surgical nursing care indices (and scoring weights) used to calculate the number of nursing care hours on each nursing unit were verified across data collection sites. Patient classification data were generated daily by the professional nurse sample and were analyzed once every 24 hours by each respective acute care hospital's nursing informatics department. The nursing informatics department within each nursing division provided the unit-level productivity data to the investigator at the end of the one month data collection period.

Demographic Data Form

The Demographic Data Form (DDF) contained a total of 16 items (Appendix G). The instrument asked the sample to respond to 13 general questions concerning such demographic information as age, gender, level of education, and current job classification. In addition, the last three items of the DDF asked the professional nurse respondents to rate their on-the-job performance on a five-point Likert scale.

Procedure

The Director of Research and the Directors of Education and Research [title and responsibilities varied across settings] were contacted by phone to solicit initial support for the study. Subsequent meetings with each respective Director resulted in agreements to facilitate organizational support and professional nurse participation in the study.

Information necesary to establish eligibility was received from each of the three acute care organizations. Each of the four units within the three acute care organizations met the required inclusion criteria. Subsequently, permission to conduct the study was obtained from each respective Institutional Review Board (Appendix I).

A formal meeting was held with the nurse managers of each of the four medical-surgical nursing units. At this meeting, the purpose of the study was described and participation requested. The survey packet was explained.

Participation in the study required completing a survey packet which consisted of a brief letter of introduction and consent (Appendix J), the Job Diagnostic Survey (JDS), the Brenner Professional Identity Index (BPII), the Organizational Culture Inventory (OCI), the Nurse's Perception of Quality Scale (NPQS), and a Demographic Data Form (DDF). The survey packets and their envelopes were numbered consecutively from 100 through 400. The exact number of surveys to be distributed on each of the nursing units was recorded prior to distribution and corresponded with the total number of professional nurses employed on each nursing unit.

All surveys were printed on white paper with black type face. The introductory letter was printed on official School of Nursing letterhead. The numbered envelope was attached to the survey packet. A labeled collection box was centrally located on each nursing unit.

In order to explain the study purpose and to facilitate professional nurse participation, a brief five minute presentation was made during the change of shifts (ie. 7am,

3pm, 7pm, and 11pm) to the registered professional nurses of each unit. Survey packets were distributed and explained. The same presentation was made at each unit.

An assurance of confidentiality was given to each professional nurse respondent verbally by the investigator during the introductory meeting as well as in writing within the cover letter of the survey packet. Neither the survey packet, contents, or the accompanying envelope contained any identifying markers other than the number designating the nursing unit location. The completed surveys were to be sealed in the envelope provided and place in the collection box. Surveys were collected daily and were stored in a locked file. Data from the completed surveys were aggregated for analysis and all results are reported at the group level.

Data collection occurred in two phases, each consisting of two week periods. Data collection proceeded during the same one month period for the entire professional nurse sample. To facilitate the inclusion of week-end and part-time employees who rotate working week-ends, data collection began on Sunday of week one and ended on Sunday of week four. Survey distribution continued through day 21 (end of week three) of the study. Distribution and subsequent collection of the survey packets were done solely by the investigator at all three sites.

Several professional nurses requested an abstract of the proposal, therefore, on day seven of data collection an abstract of the proposed study was posted on the communication board of each of the 12 nursing units (Appendix K). At the end of week one of the initial two

week data collection period, a decision was made by the investigator and dissertation chairperson to extend data collection an additional two weeks (one month total data collection). An addendum, which included an offer of a unit-level incentive (refereed journal subscription) for participation and extended the data collection period for an additional two week period, was filed with and approved by the Institutional Review Board (Appendix I). A follow-up letter, thanking those professional nurses who had already completed a survey and prompting those who had not, was placed in each professional nurse's mailbox at the end of week three of data collection (Appendix L). The follow-up letter also stated the extension of the data collection period as well as explained the incentive to be offered at the unit level for participation in the study. Daily data collection continued through week four and was terminated after a total of one month's time.

Data Analysis Plan

Statistical procedures supportive of examining the hypothesized relationships between the variables within the original and the theoretical extension of The Job Characteristics Model guided the analysis of the data. Multiple regression techniques were used to test the three study hypotheses. The results of the regression analysis are reported in both narrative and schematic form in the results section of the study (Knapp, 1994).

The presentation of the study results in the schematic form of path analysis "is becoming a dominant technique in social research because of the ability it affords the investigator to disentangle relationships and test

theoretical expectations about hypothesized relationships" (Budd & McKeehan, 1986, p. 127). "Path analysis is not a statistical procedure. It is a family of ways of analyzing and presenting data" (Spaeth, 1975, p. 53) as well as empirically expressing the strength and direction of the relationships between independent variables and explaining the (direct and indirect) effects of independent variables on dependent variables (Ferketrich & Verran, 1990; Kerlinger & Pedhazur, 1973; Simon & Burnstein, 1985).

Three hypotheses were formulated to assess the impact of the posited theoretical relationships on the specific work outcomes. The hypotheses were: the theoretical addition of the variables of professional identity and organizational culture to the original model will positively affect an employee's the personal outcomes of work; the theoretical addition of the variables of professional identity and organizational culture to the original model will positively affect an employee's work outcomes; and the addition of the variables of professional identity and organizational culture will positively affect unit-level work outcomes.

Each hypothesis was examined through the results of several regression equations. Each dependent variable, whether measured at the individual or unit level, was a separate outcome variable in the regression equation. Support for the study hypotheses was assessed using several criteria: the strength of the effect(s) of the independent variable(s) on the dependent variable; the direction of the relationship(s) between the variables; the level of significance achieved by the relationships among all the

variables; and the amount of the variance explained in the dependent variable by the relationship between the independent, mediating, and moderating variables within each respective model (Kerlinger & Pedhazur, 1973). Inferenial testing for a statistically significant difference in the amount of variance explained by each of the outcome variables was not pursued.

A schematic representation of the relationships between the independent, mediating, and dependent variables of the original and theoretical extension of the model are depicted in Figures 3 and 4. Direct relationships between the variables are represented by solid lines and the indirect relationships are represented by broken lines. The path coefficients for both the direct and indirect relationships within each of the models are reported within the results section.

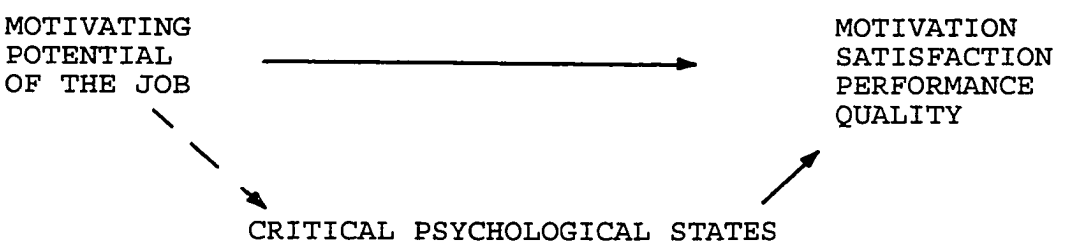

Figure 3

Path Schemata for the Job Characteristics Model

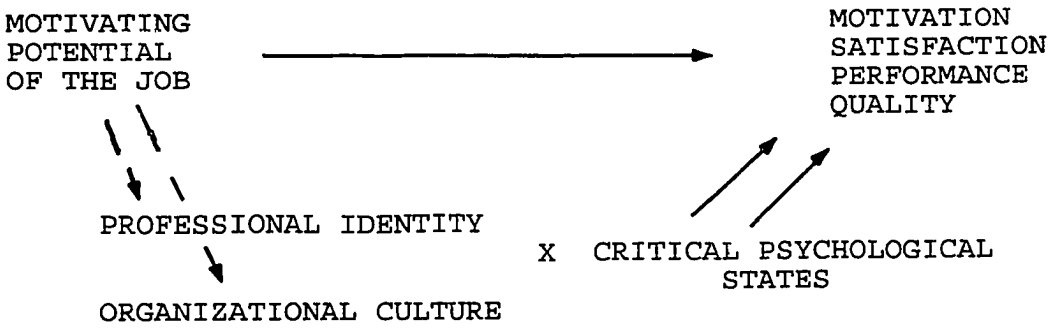

Figure 4

Path Schemata for the Theoretical Extension of the Job Characteristics Model

Each of the dependent variables were modeled by a regression equation which consisted of the independent variables and a error term representing variables not represented within the model upon which the outcome variable was assumed to be dependent. The mathematical equations which represented the outcome variables within the original and theoretical extension of the model are presented in Figure 5 and Figure 6.

$$r^2 = \beta o + \beta 1x1 + \beta 2x2 + E$$

Figure 5

Mathematical Model Representing the Relationship Between the Variables of the Job Characteristics Model

$$r^2 = \beta o + \beta 1x1 + \beta 2x2 + \beta 3x3 + E$$

Figure 6

Mathematical Model Representing the Relationship Between the Variables of the Theoretical Extension of the Job Characteristics Model

The independent variables in this study, the motivating potential of the job, the critical psychological states, growth need, professional identity, and organizational culture were measured at the individual level. These independent variables were operationalized using responses from the JDS, BPII and the OCI.

Individual level measures of the dependent variables of motivation and satisfaction were calculated using responses from the JDS. The dependent variables of quality and productivity were measured at the individual employee level as well as at the nursing unit level. Professional nurse responses to the NPQS and the DDF generated individual level data. Unit level data were obtained from patient classification reports and retrospective chart reviews.

All the surveys used in the study were scored according to the directions provided by their respective authors. Unit level data related to quality and productivity were matched by the respondents' unit membership (survey number) with the corresponding professional nurse responses from each acute care hospital setting at the time of data entry. The survey responses were entered and verified using the Statistical Package for the Social Science - Personal Computer version (SPSS-PC). Descriptive statistics were calculated using SPSS-PC for each of the variables in the original Job Characteristics Model and the theoretical extension. Alpha was set at .05 for all statistical tests.

The reliability of each of the instruments used to measure the variables in this study was calculated for this professional nurse sample. The internal consistency

reliability of each of the survey instruments used in the study are reported within the results section.

Measures of central tendencies for the independent, mediating, moderating, and dependent variables of the models were calculated from the responses to the respective survey items and data aggregated from specific nursing unit measures. The underlying distribution of each of the variables in the data set was examined and several of the variables were found to be positively skewed, therefore the assumption of normality required for inferences drawn from Pearson correlations coeffecients and linear regression models was not met. Spearman Rho correlation coeffecients were calculated between all the variables and the ranked data were used in the regression analyses. Regression analysis procedures were performed using the SPSS-PC Program.

A basic assumption of the original Job Characteristics Model states that "those employees high in growth need (score of 5 or greater on a seven point Likert-scale) will respond more positively to jobs high in motivating potential than those employees in which their growth need is not quite so strong" (Hackman & Oldham, 1980, p. 85). Based on this assumption, the data were divided into two groups: high growth need ($\geq$5) and low growth need (<5). Regression analysis was performed separately for those with low and high growth need and are reported for each of the dependent variables.

Multiple regression procedures were performed on both data sets (high and low growth need). Product terms were calculated to represent the interaction of the variables of

professional identity and organizational culture with the cumulative measure of the critical psychological states. The independent variable of the motivating potential of the job and the mediating variables of the critical psychological states, professional identity, and organizational culture were entered into the regression equations as theoretically proposed by each model.

A regression coefficient was generated for each of the dependent variables, motivation, satisfaction, performance, perception of quality, unit-level quality, and productivity. In addition, for each independent variable in the equation, a path coefficient, which indicates the amount of expected change in the dependent variable as a result of a change in the preceding independent variable, was calculated. (The results of the regression analyses are reported in both narrative and schematic form in Chapter 4.)

The purpose of this study was to identify and compare the strength and direction of the relationships among the variables within an original and theoretical extension of a work design theory. Inferenial testing for a statistically significant difference in the amount of variance explained by each of the outcome variables was not pursued.

An attempt to identify a more parsimonious model or perhaps propose additional variables was not the focus of this study. The introduction of variables exogenous to the proposed models was not attempted in this analysis.

CHAPTER FOUR

RESULTS

The demographic characteristics of the sample and professional nursing practice delivery methods of the setting are described and the reliability coefficients of each of the instruments are reported. Data from the Job Diagnostic Survey (JDS), the Brenner Professional Identity Index (BPII), the Organizational Culture Inventory (OCI), the Nurse's Perception of Quality Scale (NPQS), and the Demographic Data Form (DDF) as well as unit-level measures are presented. The regression analysis results are sequentially reported in response to each of the three study hypotheses and are presented in the schematic form of path analysis.

Sample Description

Two hundred forty-four professional nurses were asked to complete a survey packet consisting of the JDS, the BPII, the OCI, and the DDF. A total response rate of 44% (n=107) was achieved from this staff nurse sample. Six returned survey packets were not usable due to missing data, therefore, the responses from 101 survey packets were included in the analysis (adjusted response rate, 41%).

The total response rate in the three acute care hospitals were 42% (n=35) for hospital A, 45% (n=36) for hospital B, and 43% (n=36) for hospital C. The total response rates per unit were 47%, 40%, 52% and 27% for data

collection site number one; 38%, 48%, 58% and 34% for site number two; and 54%, 44%, 32% and 38% for data collection site number three.

The professional nurse sample was predominantly female (99%) and graduated from a diploma School of Nursing (44%). The mean age (± s.d.) of this group was 34 ± 11 years. The staff nurses were professionally licensed an average of 8 ± 7.5 years and in their current position 5 ± 4.6 years. The majority (80%; n=80) reported working full-time (40 hours/week) and listed their present job classification as a Staff Nurse II (n=57; 55%).

Table 1 reports the professional nursing delivery systems used within the acute care hospital settings. Primary nursing was the predominant professional nursing delivery method (n=70; 68%) reported by this group of staff nurses.

Table 1

Nursing Care Delivery System
Across Twelve Medical-Surgical Nursing Units
in Three Acute Care Institutions

Type	Rank	Frequency	Percent
Primary Care	1	70	68
Modular	2	10	10
Other	3	6	6
Don't Know	4	5	5
Case Management	4	5	5
Team	5	3	3
Functional	6	2	2

Cronbach's alpha coefficients for all the instruments used with the sample in the study are reported in Table 2. Reliability measures were calculated for two versions of the JDS: version one which included all items in the survey (.77) and version two in which the 15 negatively worded survey items were deleted (.78). The additional analysis of the data obtained from the item responses within the JDS was done to address specific instrumentation concerns identified in the literature (Dunham, 1976; Dunham et al., 1977; Hackman & Oldham, 1976; Harvey, Billings & Nilan, 1985; Idaszak & Drasgow, 1987; Idaszak et al., 1988; Kulik, Olham & Langer, 1988). The results from version one were used in the analysis.

Table 2

The Number of Subscales, Survey Items, Likert Scaling, and Cronbach Alpha Reliability Coefficients of the Survey Instruments

Survey Instruments	No. of Subscales	No. of Items	Likert Scale	Cronbach Alpha
Job Diagnostic Survey (1)	6	82	1-7	.77
Job Diagnostic Survey (2)	6	67	1-7	.78
Professional Identity Index	5	31	1-5	.94
Organizational Culture Inventory	12	120	1-5	.97
Nurse's Perception of Quality	5	56	1-5	.97

Results of Descriptive Analysis

Data are presented sequentially, with reports of the scores of the independent variables preceding those of the dependent variables. The JDS yielded data on the motivating potential of the job, critical psychological states, growth need of the employee, internal motivation, and job satisfaction. The BPII provided the measure of the individual nurse's professional identity score. The OCI provided data on the organizational culture of the acute care hospital setting. The NPQS assessed the professional nurse respondents perception of the quality of the care provided. The descriptive statistics of all the variables are summarized in Tables 3 through 13.

The motivating potential of the job for the sample was calculated by combining the individual job characteristic measures. The core job characteristic measures (skill variety, task identity, task significance, autonomy, and feedback from the job and others) and the overall motivating potential score for this medical-surgical nursing practice are presented in Table 3.

The motivating potential score of a job can range from 1 to 343. An average motivating potential score of 128 has been reported across all jobs (Hackman & Oldham, 1980). The motivating potential score for this medical-surgical nursing practice was 136. This score compares favorably with previously documented motivating potential scores for professional nursing practices across settings as well as areas of specialization. Joiner and van Servellan (1984) reported a motivating potential score of 139 for a medical-surgical nursing practice in an acute care setting. A

similar motivating potential score [134] was reported by Fleischer (1987).

Table 3

Individual Job Characteristics and Motivating Potential Score (n=101)

Variable	Mean	S.D.	Range
Skill Variety	5.70	0.84	3.0 - 7.0
Task Identity	4.04	1.04	2.0 - 7.0
Task Significance	6.24	0.63	4.0 - 7.0
Autonomy	5.24	0.86	3.0 - 7.0
Feedback (From the Job)	4.71	1.06	2.0 - 7.0
Feedback (From Others)	3.64	1.48	1.0 - 7.0
Motivating Potential	135.60	49.90	44.0 - 276.3

The individual feelings of the critical psychological states, the meaningfulness of the work, the responsibility for the work, and the knowledge of work results are reported in Table 4. Each of the critical psychological state measures can range from a low of one to a high of seven. The national norms for the individual critical psychological states, as originally documented by Oldman, Hackman and Stepeni (1979) are 5.2 for the meaningfulness of the work, 5.5 for responsibility of for the work, and 5.0 for knowledge of the work results. For this sample, the work of professional nursing elicits moderate feelings of the

meaningfulness of and responsibility for the work. However, the work of professional nursing as currently practiced in an acute care setting does not elicit strong feelings of the knowledge of work results.

Table 4

Critical Psychological State Scores
(n=101)

Variable	Mean	S.D.	Range
Meaningfulness of the Work	5.61	0.89	3.0 - 7.0
Responsibility for the Work	5.64	0.77	3.0 - 7.0
Knowledge of Work Results	4.83	1.15	1.0 - 7.0
Total	5.36	0.93	1.0 - 7.0

Three measures of growth need were calculated: combined, would-like, and job-choice (Table 5). Growth need scores can range from a low of one to a high of seven. A growth need strength of at least five (on a seven point Likert-scale), has been suggested as the minimum score necessary for a positive response by the employee to a job high in motivating potential or work redesign initiatives. The (combined) mean growth need score ($\pm$ s.d.) was reported as 4.96 $\pm$ .66. The mean combined growth need strength score among nurses with low growth need was 3.25, whereas the average growth need strength measure was 6 among those with high growth need.

Table 5

Growth Need Score
(n=101)

Variable	Mean	S.D.	Range
Growth Need (Combined)	4.96	0.66	3.0 - 6.0
Growth Need (Would-Like)	5.96	1.03	2.0 - 7.0
Growth Need (Job-Choice)	2.97	0.42	2.0 - 4.5

The 31 item responses to the BPPI were summed into one professional identity score for each nurse respondent. Professional identity scores can range from a low of 31 to a high of 155. The mean ($\pm$ s.d.) professional identity score for the sample was 124 $\pm$ 22.86.

Professional nurse responses to the OCI resulted in the identification of the cultural styles within the acute care hospital setting. The predominant organizational culture style was identified as constructive (Table 6). The constructive substyles of affiliative, humanistic-encouraging, achievement, and self-actualizing were ranked one through four, respectively. McDaniel and Stumpf (1993) reported a similar organizational culture profile across seven acute care hospital settings.

Table 6

Organizational Culture Style Scores
Across Four Medical-Surgical Nursing Units
in Three Acute Care Organizations
(n=101)

STYLE	MEAN	MODE	RANGE	RANK
CONSTRUCTIVE STYLE				
Affiliative	36.33	39.00	10-50	1
Humanistic-Encouraging	35.37	35.00	10-50	2
Achievement	33.52	39.00	10-48	3
Self-Actualizing	31.15	30.00	10-47	4
PASSIVE/DEFENSIVE				
Conventional	28.27	29.00	10-50	5
Dependent	25.32	21.00	10-48	7
Approval	23.83	20.00	10-47	8
Avoidance	20.26	10.00	10-37	11
AGGRESSIVE/DEFENSIVE				
Perfectionistic	27.97	25.00	10-47	6
Oppositional	20.46	19.00	10-35	10
Power	22.21	10.00	10-42	9
Competitive	18.01	13.00	10-44	12

The mean ($\pm$ s.d.) individual level measure of the personal outcomes of work, motivation and satisfaction, were 5.79 $\pm$ .69 and 4.41 $\pm$ 1.21, respectively. Both of the personal outcomes measures were measured by the JDS using a seven point Likert-scale. The personal outcome scores are presented in Table 7.

The mean ($\pm$ s.d.) individual level measure of the work outcomes, quality and performance, were 967.52 $\pm$ 139.90 and

4.08 ± .58, respectively (Table 7). Quality was measured using a five point Likert-scale, however the individual responses to 56 survey items were individually weighted (according to the directions provided by Lynn and Sidani (1991)) and then summed. A national mean for professional nurse perception of quality (as assessed by the NPQS) for an acute care medical-surgical nursing practice has not been reported in the literature. Professional nurse performance was measured by averaging the responses to three five-point Likert scale items. The majority of the sample (n=52) rated their performance as above average.

Table 7

Individual Level Personal and Work Outcome Scores (n=101)

	Mean	S.D.	Range
PERSONAL OUTCOMES			
Motivation	5.79	0.69	3.0 - 7.0
Job Satisfaction	4.41	1.21	1.0 - 7.0
WORK OUTCOMES			
Performance	4.08	0.58	3.0 - 5.0
Quality	967.52	139.90	633.0 - 1,172.0

Each of the 12 units from which the professional nurse sample was drawn generated their own unit level work outcome measures. Quality scores (the percent compliance to the nursing division's pre-established criteria for assessing quality of care) are reported by clinical indicator of quality and by unit in Table 8. Unit level productivity scores were generated by averaging data from each units

daily patient classification scores and are reported as hours of nursing care per relative index of work. The unit level indices of average daily census and average daily acuity appear with the unit productivity scores in Table 9. The mean unit level measures of the work outcomes of quality and productivity across all 12 nursing units are reported in Table 10.

Table 8

Unit Level Quality Scores
(n=12)

Indicator	Unit	% Compliance
Patient Education	1	1.00
	2	0.86
	3▫	0.94
	4	0.90
	5	0.96
	6	1.00
	7	1.00
	8	0.87
	11	0.84
	12	0.96
Fluid Balance	4	0.88
	5	0.94
	6	1.00
	7	0.90
	8	0.94
	9	0.89
Nursing Process	9	0.86
	10	0.68
	11	0.84
	12	0.77
Universal Precautions	2	0.99
Patient Safety	1	0.89
Skin Integrity	10	0.81

▫ Only one clinical indicator of quality measure available for this unit.

Table 9

Unit Level Productivity Scores
(n=12)

Unit	Average Census	Average Acuity	HR/RIW□
1	37	2.11	2.61
2	43	1.97	2.36
3	14	2.14	2.70
4	21	3.38	2.42
5	27	2.00	2.83
6	20	2.26	2.52
7	28	2.25	2.96
8	23	1.70	2.45
9	22	1.68	3.72
10	32	1.65	3.68
11	18	1.65	3.46
12	28	2.25	2.97

□ Relative Index of Work - standardized productivity score based on the nursing unit's average daily census and acuity score of 2.

Table 10

Unit Level Work Outcome Scores
(n=12)

	Mean	S.D.	Range
Quality	.91	.06	0.76 - 1.00
Productivity	2.89	.50	2.25 - 3.12

Spearman Rho correlation coefficients were calculated between all the concept measures within the original Job Characteristics Model as well as the theoretical extension. A summary of the results of the Spearman Rho correlations between all of the variables in the original and the theoretical extension of the Job Characteristics Model is presented Table 11. The correlation matrices of the

Table 11

Correlation Matrix Between the Variables in the Original and Theoretical Extension of the Job Characteristics Model (n=101)

	MPS	GNS	PI	OC	CPS	IM	JS	PER	Qu1
MPS		.150	.211*	.111	.508**	.304**	.391**	.165	.164
GNS			.432**	.442**	.200*	.172	.145	.394**	.088
PI				.483**	.201*	.297**	.104	.082	.318**
OC					.254*	.297**	.195	.279**	.225*
CPS						.508**	.436**	.182	.173
IM							.263**	-.015	.151
JS								.212*	.335**
PER									.133

* Correlation significant at p<.05 level.
** Correlation significant at p<.01 level.

Legend: Motivating Potential Score (MPS); Growth Need (GNS); Professional Identity (PI); Organizational Culture (OC); Critical Psychological States (CPS); Internal Motivation (IM); Satisfaction (JS); Performance (PER); Individual-level Quality (Qu1)

variables within the original and theoretical extension of the Job Characteristics Model for low growth need professional nurses are reported in Table 12. Table 13 reports the correlation matrices for those professional nurses high in growth need.

Regression Analysis Results

The results of the regression analysis are reported in response to each of the study hypothesis. Support for the study hypotheses was assessed using several criteria: the strength of the relationship(s) between the variables; the direction of the relationship between the variables; the level of significance achieved by the relationships among all the variables; and, the amount of variance explained in the dependent variable based on the relationships among the independent variables within each respective model.

Hypothesis I

The addition of the variables of professional identity and organizational culture to the original Job Characteristics Model will positively affect the professional nurse employee's personal outcomes of motivation and satisfaction.

Hypothesis I was partially supported by the results of the study. The theoretical extension of the Job Characteristics Model explained more of the variance in the personal outcome of motivation for those professional nurses low in growth need. However, the original Job Characteristics Model consistently explained more of the variance in job satisfaction. All of the personal outcomes tested were statistically significant ($p<.05$).

Table 12

Correlation Matrix Between the Variables in the Original and Theoretical Extension of the Job Characteristics Model for Professional Nurses Low in Growth Need (n=49)

	MPS	GNS	PI	OC	CPS	IM	JS	PER	Qu1
MPS		-.031	.232	.128	.510**	.072	.295*	.171	-.023
GNS			.341*	.282*	.206	.126	.167	.323	-.137
PI				.369**	.282*	.438**	.118	-.044	-.044
OC					.454**	.384**	.334*	.178	.142
CPS						.348*	.543**	.275	.281
IM							.145	-.132	.232
JS								.385**	.279
PER									.005

* Correlation significant at p<.05 level.
** Correlation significant at p<.01 level.

Legend: Motivating Potential Score (MPS); Growth Need (GNS); Professional Identity (PI); Organizational Culture (OC); Critical Psychological States (CPS); Internal Motivation (IM); Satisfaction (JS); Performance (PER); Individual-level Quality (Qu1)

Table 13

Correlation Matrix Between the Variables in the Original and Theoretical Extension of the Job Characteristics Model for Professional Nurses High in Growth Need (n=52)

	MPS	GNS	PI	OC	CPS	IM	JS	PER	Qu1
MPS		-.119	.097	-.052	.480**	.428**	.427**	.039	.264
GNS			.282*	.121	.067	-.079	-.022	.132	.050
PI				.428**	.075	.119	-.028	-.021	.541**
OC					.156	.128	.023	.157	.237
CPS						.612**	.340*	.010	.057
IM							.319*	-.035	.046
JS								.000	.359**
PER									.193

* Correlation significant at p<.05 level.
** Correlation significant at p<.01 level.

Legend: Motivating Potential Score (MPS); Growth Need (GNS); Professional Identity (PI); Organizational Culture (OC); Critical Psychological States (CPS); Internal Motivation (IM); Satisfaction (JS); Performance (PER); Individual-level Quality (Qu1)

The original Job Characteristics Model explained 14% of the variance in motivation and 30% of the variance in satisfaction for low growth need nurses. The theoretical extension, which included the variables of professional identity and organizational culture, explained 21% of the variance in motivation and 26% of the variance in job satisfaction for the same group of professional nurse employees.

For those professional nurses high in growth need, the original model accounted for 40% of the variance in motivation and 21% of the variance in job satisfaction. The theoretical extension of the Job Characteristics Model accounted for 40% of the variance in motivation and 20% of the variance in job satisfaction for nurses high in growth need.

Table 14 reports the amount of explained variance for the personal outcomes of motivation and satisfaction as well as the work outcomes of performance and perception of quality as posited within the original and theoretical extension of the model for professional nurses low in growth need. The amount of variance explained for motivation and satisfaction was significant ($p<.05$) across both theoretical perspectives. The amount of variance explained for the work outcome of perception of quality approached significance ($.05<p<.06$) within the original model.

The findings of the regression analysis for those professional nurses high in growth need within the original and theoretical extension of the model, which included the variables of professional identity and organizational culture, are presented in Table 15. The variance explained

for motivation and satisfaction were again significant ($p<.05$) across both theoretical perspectives. The amount of variance explained for perception of quality approached significance ($.05<p<.06$) within the theoretical extension.

Table 14

Explained Variance for the Personal Outcomes and the Work Outcomes as Predicted by the Original Job Characteristics Model and the Theoretical Extension for Professional Nurses Low in Growth Need (n=49)

	Original		Theoretical Extension	
	r^2	p value	r^2	p value
Motivation	.136	.034	.206	.014
Satisfaction	.295	.000	.263	.003
Performance	.076	.158	.075	.309
Quality	.116	.058	.106	.163

Table 15

Explained Variance for the Personal Outcomes and the Work Outcomes as Predicted by the Original Job Characteristics Model and the Theoretical Extension for Professional Nurses High in Growth Need (n=52)

	Original		Theoretical Extension	
	r^2	p value	r^2	p value
Motivation	.397	.000	.401	.000
Satisfaction	.206	.003	.201	.012
Performance	.001	.960	.012	.889
Quality	.076	.143	.145	.055

Hypothesis II

The addition of the variables of professional identity and organizational culture to the original Job Characteristics Model will positively affect the individual work outcomes of performance and quality.

Hypothesis II was partially supported. The theoretical addition of the variables of professional identity and organizational culture to the original model, explained 15% of the variance in the perception of quality, for those professional nurse employees high in growth need. The original model explained 12% of the variance in the perception of quality but for those individual professional nurses low in growth need. Neither professional nurse performance nor their perception of quality were significantly associated ($p<.05$) with the variables of the original or theoretical extension of the Job Characteristics Model (Table 14 and Table 15).

Table 16 reports the indirect, direct and total effects of the predictor variables within the original Job Characteristics Model on the dependent variables of motivation, satisfaction, perception of quality and performance for those professional nurse employees low in growth need. The critical psychological states consistently exert a strong to moderate positive direct effect on all of the outcome variables. The indirect effect of the motivating potential of the work through the meaningfulness of, responsibility for, and feedback from the work is also positive but somewhat smaller in strength.

Table 16

Indirect, Direct and Total Effects of the Variables Within the Original Job Characteristics Model for Professional Nurses Low in Growth Need (n=49)

Dependent Variable	Predictor Variable	Total Effect	Indirect Effect	Direct Effect
Internal Motivation	MPS	.071	.214	-.143
	CPS	.421	---	.421
Satisfaction	MPS	.293	.270	.023
	CPS	.531	---	.531
Performance	MPS	.169	.129	.040
	CPS	.254	---	.254
Quality	MPS	-.023	.201	-.225
	CPS	.395	---	.395

Legend: Motivating Potential of the Work (MPS)
Critical Psychological States (CPS)

The indirect, direct and total effects of the predictor variables within the theoretical extension of the Job Characteristics Model on the dependent variables of motivation, satisfaction, perception of quality and performance for those professional nurse employees low in growth need are reported in Table 17. The direct effect of the interaction between professional identity and the feelings of the critical psychological states is negative for three of the four outcomes - satisfaction, performance and perception of quality. However, the direct effect of the interaction between organizational culture and the feelings of the critical psychological states is positive

across all of the outcome variables and particularly strong for job satisfaction and the perception of quality.

Table 17

Indirect, Direct and Total Effects of the Variables Within the Theoretical Extension of the Job Characteristics Model for Professional Nurses Low in Growth Need (n=49)

Dependent Variable	Predictor Variable	Total Effect	Indirect Effect	Direct Effect
Internal Motivation	MPS	-.086	.006	-.092
	PI x CPS	.168	---	.168
	OC x CPS	.330	---	.330
Satisfaction	MPS	.305	.086	.219
	PI x CPS	-.196	---	-.196
	OC x CPS	.571	---	.571
Performance	MPS	.157	-.010	.168
	PI x CPS	-.227	---	-.227
	OC x CPS	.356	---	.356
Quality	MPS	.062	-.018	-.044
	PI x CPS	-.287	---	-.287
	OC x CPS	.513	---	.513

Legend: Motivating Potential of the Work (MPS)
Professional Identity (PI)
Organizational Culture (OC)
Critical Psychological States (CPS)

For those professional nurse employees high in growth need, Table 18 reports the indirect, direct and total effects of the predictor variables within the original Job Characteristics Model on the dependent variables of motivation, satisfaction, performance and perception of quality. The direct effect of the critical psychological states on the personal outcomes is positive, whereas for the work outcomes the direct effect is negative. The indirect effect of the motivating potential of the work through the

feelings of the meaningfulness of, the responsibility for, and the feedback from the work is similar in magnitude and direction.

Table 18

Indirect, Direct and Total Effects of the Variables Within the Original Job Characteristics Model for Professional Nurses High in Growth Need (n=52)

Dependent Variable	Predictor Variable	Total Effect	Indirect Effect	Direct Effect
Internal Motivation	MPS	.426	.252	.174
	CPS	.527	---	.527
Satisfaction	MPS	.426	.083	.343
	CPS	.174	---	.174
Performance	MPS	.038	-.005	.044
	CPS	-.011	---	-.011
Quality	MPS	.264	-.043	.308
	CPS	-.091	---	-.091

Legend: Motivating Potential of the Work (MPS)
Critical Psychological States (CPS)

Table 19 reports the indirect, direct and total effects of the predictor variables within the theoretical extension of the Job Characteristics Model on the dependent variables of motivation, satisfaction, performance and perception of quality for those professional nurse employees high in growth need. The direct effect of the interaction between professional identity and the feelings of the critical psychological states is negative for two of the four outcomes - satisfaction and performance. The interaction between organizational culture and the feelings of the

critical psychological states has a negative direct effect only on the perception of quality.

Table 19

Indirect, Direct and Total Effects of the Variables Within the Theoretical Extension of the Job Characteristics Model for Professional Nurses High in Growth Need (n=52)

Dependent Variable	Predictor Variable	Total Effect	Indirect Effect	Direct Effect
	MPS	.221	.003	.218
Internal	PI x CPS	.057	---	.057
Motivation	OC x CPS	.465	---	.465
Satisfaction	MPS	.387	-.004	.392
	PI x CPS	-.148	---	-.148
	OC x CPS	.221	---	.221
Performance	MPS	.009	-.003	.012
	PI x CPS	-.122	---	-.122
	OC x CPS	.175	---	.175
Quality	MPS	.196	-.016	.213
	PI x CPS	.433	---	.433
	OC x CPS	-.265	---	-.265

Legend: Motivating Potential of the Work (MPS)
Professional Identity (PI)
Organizational Culture (OC)
Critical Psychological States (CPS)

The schematic path representation of the original Job Characteristics Model and the theoretical extension for the personal outcomes of motivation and satisfaction and the work outcomes of performance and perception of quality for professional nurse employees low in growth need are portrayed in Figure 7 through Figure 14. Figures 15 through Figure 22 depict the schematic paths of the personal outcomes and the work outcomes within the original and

theoretical extension of the model for professional nurses high in growth need.

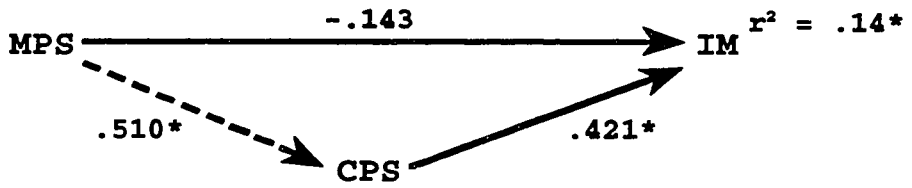

Figure 7

Schematic Path of the Personal Outcome of Internal Motivation Within the Job Characteristics Model for Professional Nurses Low in Growth Need

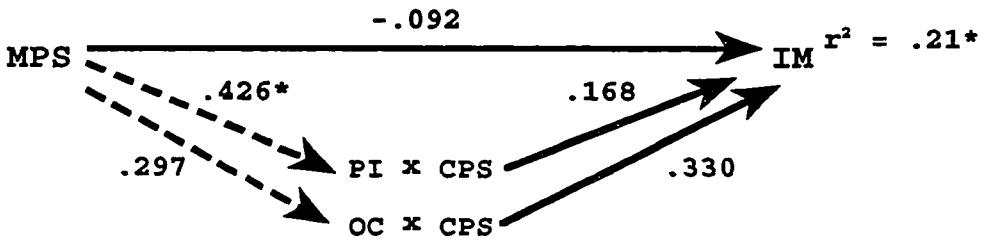

Figure 8

Schematic Path of the Personal Outcome of Internal Motivation Within the Theoretical Extension of the Job Characteristics Model for Professional Nurses Low in Growth Need

* Significant at $p<.05$

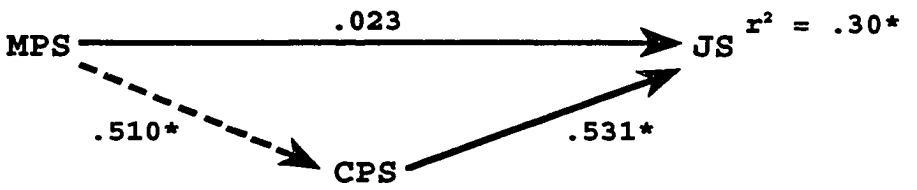

Figure 9

Schematic Path of the Personal Outcome of Job Satisfaction Within the Job Characteristics Model for Professional Nurses Low in Growth Need

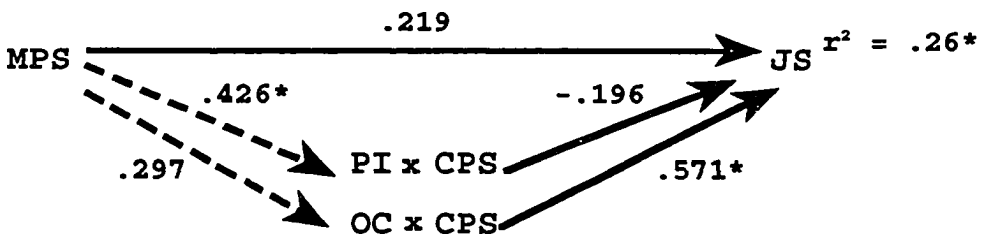

Figure 10

Schematic Path of the Personal Outcome of Job Satisfaction Within the Theoretical Extension of the Job Characteristics Model for Professional Nurses Low in Growth Need

* Significant at $p<.05$

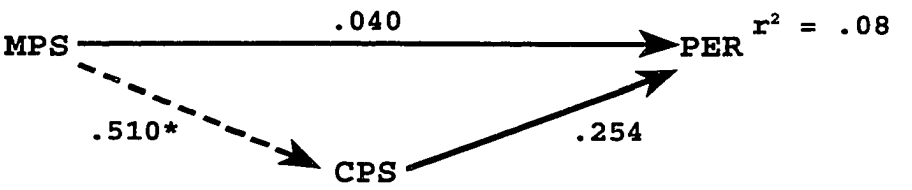

Figure 11

Schematic Path of the Work Outcome of Performance
Within the Job Characteristics Model
for Professional Nurses Low in Growth Need

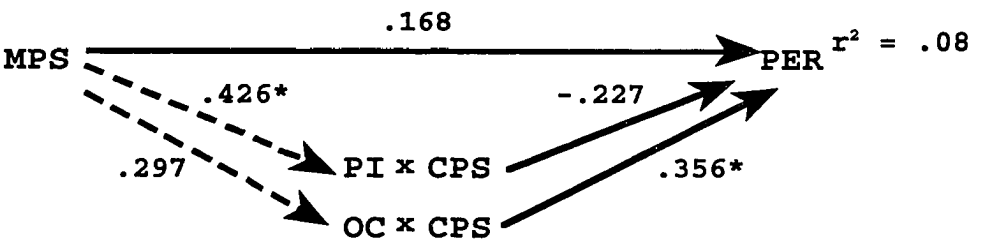

Figure 12

Schematic Path of the Work Outcome of Performance Within
the Theoretical Extension of the Job Characteristics Model
for Professional Nurses Low in Growth Need

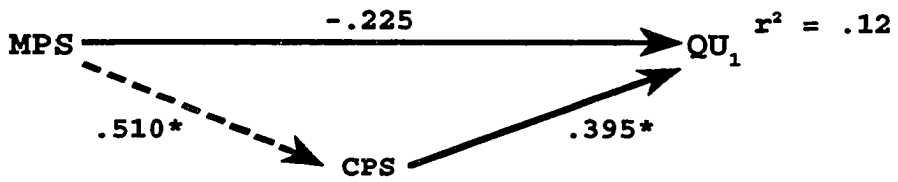

Figure 13

Schematic Path of the Work Outcome of Perception of Quality Within the Job Characteristics Model for Professional Nurses Low in Growth Need

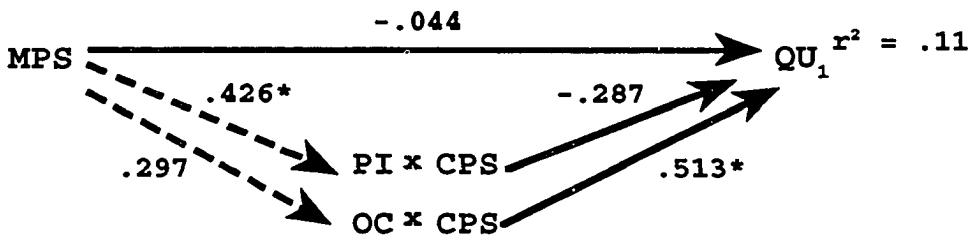

Figure 14

Schematic Path of the Work Outcome of Perception of Quality Within the Theoretical Extension of the Job Characteristics Model for Professional Nurses Low in Growth Need

* Significant at $p<.05$

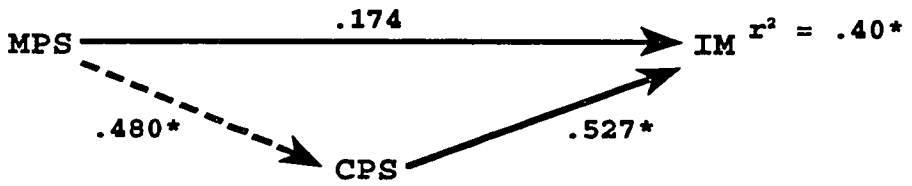

Figure 15

Schematic Path of the Personal Outcome of Internal Motivation Within the Job Characteristics Model for Professional Nurses High in Growth Need

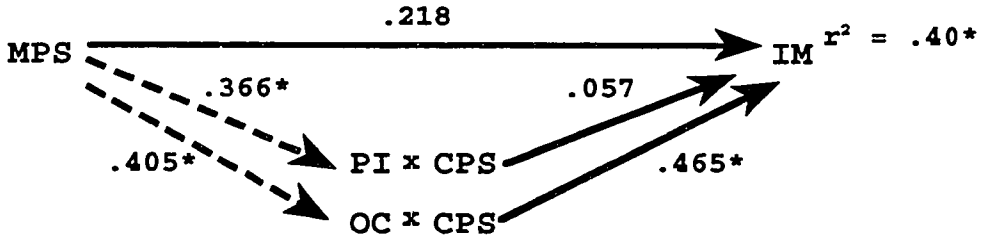

Figure 16

Schematic Path of the Personal Outcome of Internal Motivation Within the Theoretical Extension of the Job Characteristics Model for Professional Nurses High in Growth Need

* Significant at p<.05

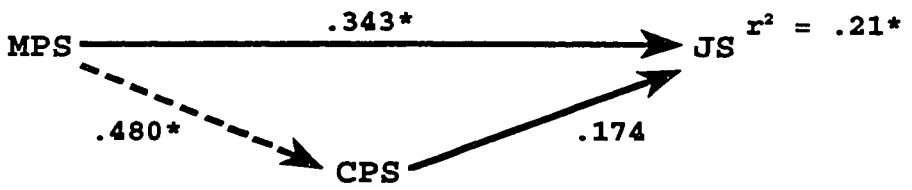

Figure 17

Schematic Path of the Personal Outcome of Job Satisfaction Within the Job Characteristics Model for Professional Nurses High in Growth Need

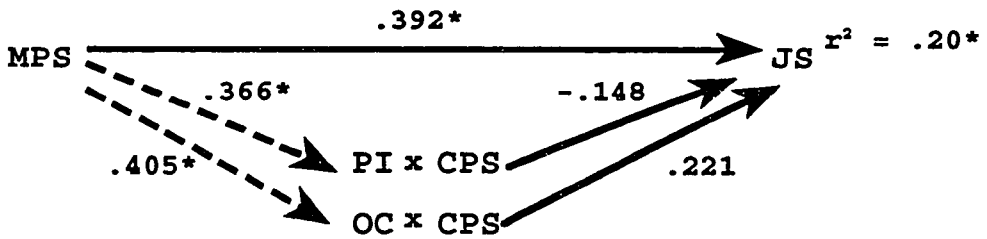

Figure 18

Schematic Path of the Personal Outcome of Job Satisfaction Within the Theoretical Extension of the Job Characteristics Model for Professional Nurses High in Growth Need

* Significant at $p<.05$

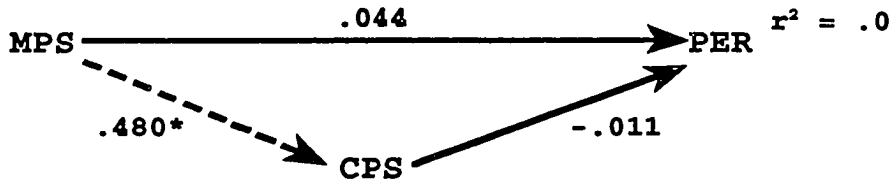

Figure 19

Schematic Path of the Work Outcome of Performance
Within the Job Characteristics Model
for Professional Nurses High in Growth Need

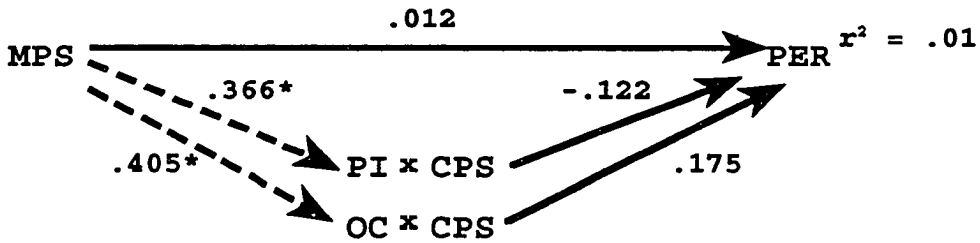

Figure 20

Schematic Path of the Work Outcome of Performance Within
the Theoretical Extension of the Job Characteristics Model
for Professional Nurses High in Growth Need

* Significant at p<.05

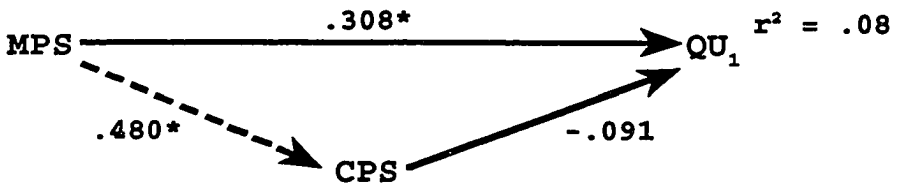

Figure 21

Schematic Path of the Work Outcome of Perception of Quality Within the Job Characteristics Model for Professional Nurses High in Growth Need

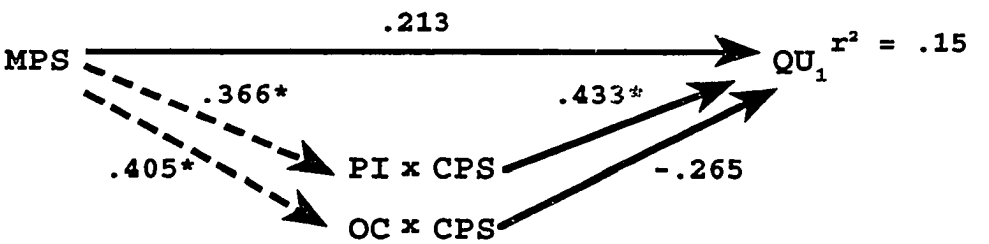

Figure 22

Schematic Path of the Work Outcome of Perception of Quality Within the Theoretical Extension of the Job Characteristics Model for Professional Nurses High in Growth Need

* Significant at p<.05

Hypothesis III

The addition of the variables of professional identity and organizational culture to the original Job Characteristics Model will positively affect the unit-level work outcomes of productivity and quality.

An assumption of the theoretical extension of the Job Characteristics Model states that the acute care hospital environment impacts professional nurse perceptions of their job as well as the outcomes of their work. In addition, the model posited that nurse managers and executives are informed by individual data sets which are aggregated and interpreted at the unit level. Based on these two assumptions, the ability of the theoretical extension of the model to explain variance(s) in the unit level work outcomes of quality and productivity was examined. The findings are reported for the total group, aggregating the scores of both groups of professional nurse employees: low growth need and high growth need. The individual level assumptions, which underlie the Job Characteristics Model, did not support examining unit level work outcomes.

Hypothesis III was not supported. The association among the variables was not strengthened by the addition of the variables of professional identity and organizational culture to the theoretical extension of the original model. Neither of the models examining unit level productivity (r^2 = .016; NS) nor quality (r^2 = .024; NS) explained practically significant amounts of the variance.

The indirect, direct and total effects of the predicator variables of the motivating potential of the job, professional identity of the nurse, the organizational

culture of the acute care hospital setting and the feelings of the critical psychological states on the dependent variables of unit-level productivity and quality are reported in Table 20. A schematic representation of the findings are shown in Figure 23 and Figure 24.

Table 20

Indirect, Direct and Total Effects of the Variables Within the Theoretical Extension of the Job Characteristics Model for the Unit-Level Outcomes of Productivity and Quality (n=12)

Dependent Variable	Predictor Variable	Total Effect	Indirect Effect	Direct Effect
Productivity	MPS	-.124	.000	-.124
	PI x CPS	-.026	---	-.026
	OC x CPS	.025	---	.025
Quality	MPS	-.031	-.009	-.022
	PI x CPS	-.253	---	-.253
	OC x CPS	.240	---	.240

Legend: Motivating Potential of the Work (MPS)
Professional Identity (PI)
Organizational Culture (OC)
Critical Psychological States (CPS)

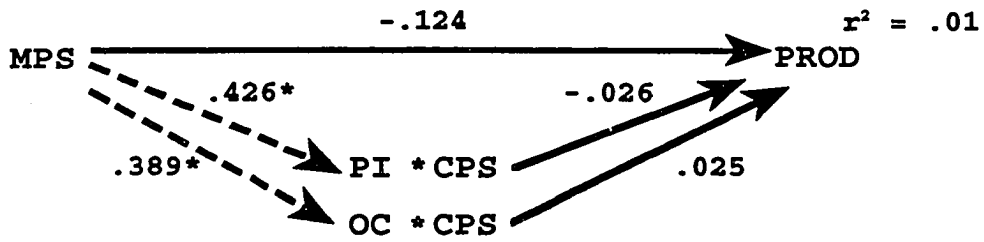

Figure 23

Schematic Path of the Unit Level Outcome of Productivity
for the Theoretical Extension of
the Job Characteristics Model

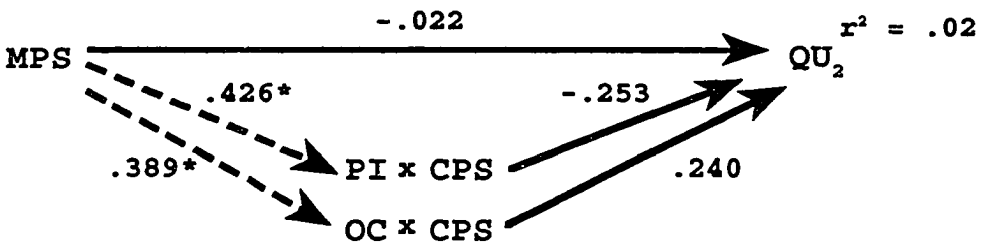

Figure 24

Schematic Path of the Unit Level Outcome of Quality
for the Theoretical Extension of
the Job Characteristics Model

* Significant at p<.05

Summary

Hypothesis I was partially supported. The theoretical extension of the Job Characteristics Model explained more of the variance in the personal outcome of motivation ($p<.05$) for those professional nurses low in growth need.

Hypothesis II was partially supported. The theoretical extension of the model, which included the variables of professional identity and organizational culture, explained more of the variance in the perception of quality for those nurses high in growth need, the outcome however was not significant ($p<.05$).

Hypothesis III was not supported. The theoretical extension of the original Job Characteristics Model did not explain variance in the unit level work outcomes of quality and productivity.

CHAPTER FIVE

DISCUSSION AND RECOMMENDATIONS

The results of the data analysis are discussed from a theoretical as well as methodological perspective. Recommendations for the management of professional nursing practice in acute care organizations and nursing administration's future research agenda are presented based on the findings of the study.

Discussion

Theoretical Contributions of the Study

The purpose of this study was to compare a theoretically derived work design theory with the original Job Characteristics Model as developed by Hackman and Oldham (1975, 1980). Two hypotheses examined the impact of the variables of the motivating potential of work, growth need, professional identity, organizational culture and the critical psychological states on the personal and work outcomes of professional nurse employees in acute care organizations. The third hypothesis examined the impact of those same relationships on unit level work outcomes.

The first hypothesis, which posited that a model which included the variables of professional identity and organizational culture would explain more of the variance in the personal outcomes of professional nurse motivation and satisfaction was partially supported. The outcomes of both the original Job Characteristics Model and the theoretical

extension were significant ($p<.05$). The findings were consistent across low and high growth need professional nurse employees.

While not necessarily a statistically significant amount, the theoretical extension explained more of the variance in motivation [20%] for those professional nurses low in growth need than the original model [14%]. In addition, both professional identity and organizational culture had a positive direct effect on the personal outcome of motivation.

For professional nurses high in growth need, there was no difference in the amount of explained variance in the personal outcome of motivation between the theoretical perspectives. The original model explained 40% of the variance. The theoretical extension also explained 40%. The direct effects of the motivating potential of the work and the organizational culture along with the psychological states in the theoretical extension were the major contributors of the amount of variance explained in this personal outcome. Professional nurses were found to be motivated by their work as well as influenced by the environment in which their professional nursing practice takes place.

The original as well as the theoretical extension of the Job Characteristics Model explained more of the variance in motivation for high growth need individuals than for those individuals in which growth need is not quite so strong. With the differences in the direction and magnitude of the direct effect of the motivating potential of the work between nurses with high and low growth needs, the strength

of the nurse's desire for a challenging job (growth need) influenced the impact of the three critical psychological states on motivation. These findings highlight differences between high and low growth need professional nurse employee perceptions of their work as well as their emotive response to that same work.

There was little difference between the theoretical perspectives in the amount of explained variance in job satisfaction for those nurse's whose desire for challenging work was low. The original Job Characteristics Model explained 30% of the variance in professional nurse job satisfaction whereas, the theoretical extension explained, 26%. The outcome of both the original Job Characteristics Model and the theoretical extension were significant ($p<.05$). In addition, regardless of theoretical perspective, the direct effects of the motivating potential of the work on the personal outcome of job satisfaction were not as influential in explaining the variance in job satisfaction as were the critical psychological states and organizational culture.

Within the theoretical extension of the model, the interaction between a constructive organizational culture and the psychological states was positively associated with job satisfaction for this group of professional nurses. This finding contrasts with the negative direct effect of the interaction between professional identity and the feelings of meaningfulness, responsibility and knowledge of work results. Thus, the work environment, an affiliative constructive organizational culture style, was found to have

a substantial impact on professional nurse job satisfaction, especially for those professional nurses low in growth need.

For those professional nurses high in growth need, there was little difference in the amount of explained variance in professional nurse job satisfaction between the original Job Characteristics Model and the theoretical extension, 21% and 20%, respectively. The strength of the impact of the motivating potential of the work on job satisfaction was substantiated across theoretical perspectives. This was the only instance in which the direct impact of the work was stronger than the direct effects of both the nurse's professional identity or the organizational culture of the environment. The actual perception of the motivating potential of the work rather than the feelings of the meaningfulness of, responsibility for and feedback from the work strongly influenced the outcome of job satisfaction for those nurses desiring a challenging professional practice. This finding contrasts the mostly affective response to the motivating potential of the work, through the critical psychological states, for professional nurses low in growth need.

With the differences in the magnitude of the explained variances of job satisfaction between nurses with low and high growth needs, the strength of the nurse's desire for a challenging job (growth need) appears to have moderated the direct impact of the motivating potential of the work as well as the impact of the feelings of the critical psychological states on job satisfaction. The difference in the amount of explained variance in job satisfaction highlights the perceptual differences (based on growth need)

of the motivating potential of the work and the influence of the three feelings of the critical psychological states on job satisfaction.

The findings of this study's comparison between the original Job Characteristics Model and the theoretical extension support prior work on the influence of an individual employees' growth need on the perception of the motivating potential of work and their subsequent affective responses to the job (Brief & Aldag, 1975; Hackman & Oldham, 1976; Oldham, 1976; O'Reilly et al., 1980). The fact that the effect of the motivating potential of the work and the magnitude of the personal outcomes do not operate consistently across employees with varied levels of growth need can be viewed as supportive of one of the basic assumptions of the original Job Characteristics Model: individuals not only perceive, but also respond to, the motivating potential of their work differently (Brousseau, 1978; Brousseau & Prince, 1981; Dunham et al., 1977; Freid & Ferris, 1986; Hackman & Oldham, 1975, 1980; O'Reilly, 1977; Taber et al., 1985.)

Contemporary organizational behavioralists have reported that variance in job satisfaction is often associated with basic genetic or dispositional differences between individuals (Arvey, Bouchard, Segal & Abraham, 1989; Arvey, Carter & Buerkley, 1991; Bouchard, Arvey, Keller & Segal, 1992; Keller, Bouchard, Arvey, Segal & Dawis, 1992). Likewise, the results of recent nursing administration studies have begun to document differences in professional nurse job satisfaction based on the employees' positive or negative affectivity (Agho, 1993), inherent desire for

growth and challenge from the practice of professional nursing (Stechmiller & Yarandi, 1992) and the nurses' perception of the degree to which work relationship issues are addressed by the practice environment (Tumulty, Jernigan & Kohut, 1994).

This study provides mixed results for the strength and direction of the effect of professional identity (value congruence between the profession and the practicing nurse) on the personal outcomes of work. The effect of professional identity on the entire group was positive for the outcome of motivation. Whereas, professional identity had a negative impact on job satisfaction for professional nurses both low and high growth need. The professional identity of the nurse working on a medical-surgical unit motivates but does not positively contribute to job satisfaction. The inability of the professional identity of the nurses to consistently and positively interact with the feelings of the meaningfulness, responsibility and knowledge of work results and therefore increase the amount of explained variance in the personal outcomes contradicts much of the professional socialization literature, to date.

The positive influence of work environment on the perception of the work as well as on the personal outcomes of motivation and satisfaction, is consistent with the findings of Cooke and Rousseau (1988), Kramer and Hafner (1989), McDaniel and Stump (1992), Thomas et al. (1990), and Tumulty et al. (1994). The highest ranking of the organizational culture constructive substyles, affiliative, had a positive direct effect on the personal outcome of motivation across both groups of professional nurses. In

addition, an affiliative work environment, as perceived by those professional nurses low in growth need, had a large impact on their satisfaction with the job.

The second hypothesis, which posited that a theoretical perspective which included the variables of professional identity and organizational culture would explain more of the variance in the professional nurse work outcomes of the perception of the quality and job performance than the original Job Characteristics Model, was partially supported. The relationships between the motivating potential of the work and professional identity, organizational culture and feelings of the meaningfulness, the responsibility and the knowledge of work results accounted for 15% of the variance in the work outcome of the perception of quality for those professional nurse employees high in growth need, whereas the original model explained 8%.

Neither the original Job Characteristics Model or the theoretical extension of the model accounted for a significant amount of the variance ($p<.05$) in the self-report of performance in the professional nurse sample. For professional nurses low in growth need, both theoretical perspectives explained only 8% of the variance in performance. None of the variance in the performance of high growth need professional nurses was explained by either theoretical perspective. Thus, variations in professional nurse's self-report of performance were not captured by either set of variables within the competing models for professional nurses high in growth need. The restricted range, small standard deviation (and variance) in the (raw

data) performance scores may have contributed to these insignificant results.

Just as with the personal outcomes, the impact of professional identity and an affiliative organizational culture on the work outcomes was mixed based the professional nurses desire for a challenging practice. Professional identity had a moderate negative effect on performance across both groups of nurses. An affiliative organizational culture had a large positive effect on the outcome of performance but only for those professional nurses low in growth need. Yet, that same affiliative culture exerted only moderate positive impact on the performance of high growth need professional nurse employees.

For those professional nurses low in growth need, the original Job Characteristics Model explained 12% variance in perception of quality (.05<p.<06) The theoretical extension explained 11% of the variance but this result was not statistically significant.

The impact of the motivating potential of the work on the perception of quality differed among professional nurses with high and low growth need. For those nurses low in growth need, the feelings of the critical psychological states positively impacted the perception of quality. For those nurses high in growth need, it was the motivating potential of the work which positively impacted the perception of quality. This finding supports two of the theoretical tenets of the models: individual differences in the perception and influence of the motivating potential of the work on outcomes; and, the differences in the emotive

response to the work (through the critical psychological states) based on the strength of the individuals' growth need.

The professional identity of high growth need nurses working on a medical-surgical nursing unit positively impacted the outcome of quality and therefore contributed to the amount of explained variance in this work outcome. The positive influence of work environment on the work outcomes (of low growth need professional nurses) is consistent with the findings of Cooke and Rousseau (1988), Kramer and Hafner (1989), McDaniel and Stump (1992), Thomas et al. (1990). The highest ranking of all the identified organizational substyles, affiliative, had a large positive direct effect on the performance and perception of quality for those professional nurses low in growth need. However, for those professional nurse employees whose desire for a challenging job was strong, an affilitative organizational culture had a negative impact on the work outcome of perception of quality.

The relationships between the variables of the original Job Characteristics Model and the theoretical extension somewhat successfully predicted the personal outcomes of motivation and satisfaction and the work outcome of quality. Yet, the amount of the explained variance was consistently influenced by the strength of the individual professional nurse's growth need. If the work outcome of performance is viewed as a behavioral response and the personal outcomes of motivation and satisfaction and the work outcome of perception of quality are viewed as affective responses to work, both the original and theoretical extended model can

be described by their ability to predict variance in employee feelings about their work rather than behavior on the job.

Perhaps insight into the link between job-related feelings and behavior can be gained by reviewing turnover models currently in the literature. Hinshaw and Atwood (1983) and more recently, in a replication of the original study, Lucus, Atwood and Hagaman (1993) reported a significant relationship (p.<.05) between feelings associated with job satisfaction and dissatisfaction, the affective state of intent to leave the job and the subsequent behavior of actual employee turnover from the organization.

The third hypothesis, that a theoretical perspective which included the variables of the professional identity and organizational culture would predict unit-level work outcomes of quality and productivity was not supported. The relationships between the variables of the motivating potential of the job, critical psychological states, growth need strength of the nurse, professional identity of the nurse and the organizational culture of the acute care hospital as posited within the theoretical extension of the Job Characteristics Model were not significant (p<.05) nor did they account for any measurable variance in the unit level work outcome of productivity or quality. Thus, variation in unit-level work outcomes was not captured by the set of variables in theoretical extension of the Job Characteristics Model. These findings are consistent with the results of the individual level analysis which supported and explained variance in the personal outcomes of

professional nurse employees but not the behavioral aspects of performance on the job.

Methodological Considerations

The empirical contributions of theory-testing research activities rest upon the methodological rigor with which the study was designed, the procedures carried out, and subsequently, the data reviewed and analyzed. Three methodological concerns, sample size, reliability, and validity of the variable measures, and meeting the underlying assumptions of the inferential tests are considered imperative to the overall validity of a study. Each of the concerns can limit the potential theoretical contributions of an empirical study. These three concerns are discussed within the context of this study.

Sample

The size and distribution of a sample contribute to establishing the statistical significance of the findings of data analysis and the external validity of the results of empirical studies. The representativeness of the sample to the population of interest and the ability of the participants to honestly and confidentially participate in the study are discussed as specific sample characteristics which can limit the interpretation of the results of this study.

Response bias, the tendency for a select group of individuals within the sample to respond or participate in the study, can also adversely effect both the internal and external validity of study results. Yet, "whether the nonresponders cause a substantial increase in error

depends on the reason for their nonresponse or if the characteristics of nonparticipants are somehow different from those of the participants in the study" (Simon & Burstein, 1985, p. 267).

Several organizational, sociopolitical and economic trends were observed during the data collection period. All three organizational sites from which the medical-surgical nurse sample was drawn initiated work-force reductions and/or hiring freezes several weeks prior to the data collection period. Health care reform was cited as the impetus behind this work-force downsizing. The actual impact of these trends on the actual response rate of this study is unknown. However, this reduction in the work-force resulted in a net loss of 16% (n=44) of the original sample size (n=288). The sample attrition rate during the one month data collection period due to scheduling changes, internal transfers, and departmental and organizational turnover is also not known.

A total response rate of 44% was achieved in this sample of medical-surgical professional nurses. The response rate across all three data collection sites was consistent: 43%; 44%; and, 45%, respectively. The response rate achieved in this study did not appear to adversely impact the representativeness of the sample. The demographic characteristics of the sample appear to be representative of the general population of professional nurses (in the state in which the study took place) in regard to age, gender, level of current education, and years of job experience (Raimond, 1991). The nearly equal groups of high (n=52) and low (n=49) growth need professional

nurses also lends confidence in the representativeness of the total sample (n=101) to the population of interest.

An adequate response rate (the number of actual participants in the study) is required not only to ensure representation of the population but also to support any statistical method of choice for hypothesis-testing. In addition, sample size (as well as the reliability of the instruments) can often unfavorably impact the magnitude of measurement error. The amount of systematic measurement error introduced into the regression equations due to response bias should be considered. However, the size of the sample in this study met the recommended limit of at least 20 respondents per variable. The sample size of 101 supported the inclusion of the two variables of interest in the original Job Characteristics Model and the three variables of interest in the theoretical extension.

Stability of the Construct Measures

The questionnaires used in this study, the Job Diagnostic Survey (JDS), Brenner Professional Identity Index (BPII), Organizational Culture Inventory (OCI) and the Nurse's Perception of Quality Scale (NPQS), had acceptable internal consistency reliability coefficients. The construct and criterion-related validity have been previously established through rigorous testing of the instruments by the original authors.

A ceiling effect for the dependent variable of self-reported individual performance may have contributed to the insignificance ($p<.05$) of the models hypothesized to explain variance in this work outcome. This sample of professional nurses consistently ranked themselves above average in

performance while reporting their job classification as Staff Nurse II on a scale with four levels. The transformation of the performance (raw data) scores into dichotomous data sets would have addressed this ceiling effect, however, the underlying distribution would have remained positively skewed.

Perhaps the use of objective performance data would have decreased the likelihood of this ceiling effect and increased the variance in professional nurse respondents performance scores. The use of objective patient outcome data as a measure of professional nurse on-the-job performance would have decreased the likelihood of biased responses based on the sample's positive self-presentation (Christenson, 1981).

The amount of measurement error introduced into the regression analysis as a result of inadequate concept measurement by the survey instruments, especially the JDS, could be a concern. Aiken and West (1991) have noted that "when the reliability of a measure deceases to .80 [from 1.00] the variance accounted for by interaction terms can decrease by as much as 50%" (p. 163). Likewise, a certain amount of measurement error was probably introduced into the regression equations due to not including (additional) salient endogenous variables in the theoretical extension of the Job Characteristics Model. Measurement error is therefore a realistic concern considering the reliability of the concept measures drawn from the JDS (.77), the number of the nonsignificant path coefficients, nonsignificant outcomes and subsequently the small amount of variance explained.

Measurement error in the outcome measures of the unit level concepts of quality and productivity are also possible. Measures of reliability, in particular inter-rater reliability, between the professional nurse employees who retrieve such [management] data on a daily basis were unavailable from the data collection sites. Likewise, the construct validity of the work outcome of unit level quality may be tenable in light of the measure's underlying [nursing] process perspective. Perhaps a more suitable outcome measure would have assessed patient outcomes relative to the nurse's perception of, feelings about, and behavior on the job in an acute care hospital. The use of a patient outcome measure might provide preliminary descriptive information regarding the link between professional nurse differences in the perception of their work and the self-reported behavioral outcomes.

Assumptions Underlying Inferential Testing

The assumptions underlying a general regression analysis and path analysis techniques were met. The theoretical models being tested were linear, the data responses were independent and the data were transformed into ranks.

The data were also examined for multicollinearity problems using two suggested procedures. The correlation matrices were reviewed for relationships greater than .8. None of the inter-item correlations between the concept measures exceeded the upper limit. Tolerance measures were also obtained on all of the concept measures used in the regression equations.

Descriptive statistics as well as the examination of the scatterplots of the variable measures revealed that some of the data were positively skewed, therefore distribution free statistics were used to analyze the data. The positively skewed distribution of the dependent variables of motivation and performance at the individual level and quality and productivity at the unit level identified a ceiling effect as well as documented a decreased variance between the individual raw scores of the data set. With little variance in the raw scores, explaining variance in the outcome variables, as a result of the relationships between the variables in the respective models, becomes increasingly dependent upon sample size and the corresponding effect size. The size of the sample in this study was statistically capable of detecting effects of .50 or larger.

The recruitment of a larger sample as well as the use of a more sensitive measure for as well as scaling of the outcome variables could have contributed to explaining more of the variance in the personal outcomes of motivation for those nurses whose growth need was low and the work outcomes of performance and quality. Likewise, a larger number of survey respondents might not have compromised the power of the planned analysis.

It should also be noted that if forward or step-wise regression approaches were performed, several of the variables would not have been entered into the models because of their nonsignificant ($p<.05$) contribution to the outcome measure of the equation. In addition, alternative statistical techniques, such as ANCOVA or hierarchical

linear modeling, might have more precisely partitioned out the main effects from the interaction effects between the mediating variables in the models, especially for the unit-level outcome variables.

Recommendations for Practice

The results of this study provide several implications for the management of professional nursing practice in acute care organizations. In addition, several challenges are identified for the nurse executives who lead them. Based on the varied effect of the strength of the growth need of the professional nurse employee on the personal outcomes of motivation and satisfaction and the work outcome of quality, recruitment, and retention practices will become an issue. The patient outcome implications related to the aggregate contributions of low versus high growth need employees to the outcomes of the practice of professional nursing on medical-surgical units in acute care hospitals will need to be identified as well as the cost differentiated.

The professional identity of the staff nurses working on medical-surgical units in acute care hospitals positively impacts motivation for professional nurses with low growth need. Whereas, for those nurses high in growth need, professional identity positively impacts both the personal outcome of motivation as well as the work outcome of perception of quality. The nurse's perception of the complexity of the work, the congruence between their value system and that of the profession and their feelings of the meaningfulness of, responsibility for, and the knowledge of work results did not positively contribute to explaining any measurable variance in the job-related behavioral outcome.

Clinical ladder programs which recognize and reward professional practice values and behaviors based on unit, organizational and national standards reinforce the professional identity of the professional nurse. Yet, the perceptual differences (in the effect of professional identity on the work outcomes) between the low and high growth need professional nurse will continue to need addressed by a sensitive and communicative nurse executive.

The difference in the effect of an affiliative organizational culture on the work outcomes of professional nurses with low versus high growth need also poses a challenge for the nurse executive. The results of this study suggest that the impact of current work redesign strategies on the personal and work outcomes of professional nurse employees low in growth need could be lessened through the use of initiatives which foster affiliative aspects of a constructive organizational culture. However, innovatively creating professional practice environments which blend affiliative aspects which meet the lower order needs of some professional nurses with achievement and actualizing aspects for those professional nurses possessing a stronger need for growth on the job will be a sizable challenge for the nurse executive.

Recommendations for Research

The current paradigm of the discipline of nursing administration has embraced the study of concepts such as professional identity and organizational culture as potential moderators of both personal and work outcomes of professional nursing practice in acute care organizations. However, based on the findings of this study the

organizational environment impacts only the personal outcomes of motivation and satisfaction across both groups of professional nurse employees. In addition, an affiliative organizational culture was found to have a negative effect on the work outcome of quality for those nurses high in growth need.

While this study confirms the dispositional and emotive effect of the attributes of the nurse on the perception of the work and nurses feelings about the job, little has been gained in the pursuit of measurable outcomes related to performance at the individual level or productivity and quality at the unit level. The identification of the behavioral aspects of professional nursing practice and the characteristics of an organizational environment which consistently predict effective work outcomes, especially at the aggregated level, should become a priority. The future testing and use of multi-level theory (and analysis) to explain unit level work outcomes, however, are dependent upon timely empirical inquiries which focus on theory building activities. The refinement of subjective and objective measures would support studies which examine the link between the affective and behavioral outcomes of the work of professional nursing in acute care organizations.

APPENDICES

APPENDIX A

TOP TEN DIAGNOSTIC-RELATED GROUPINGS IN THREE ACUTE CARE HOSPITALS ACROSS TWELVE MEDICAL-SURGICAL NURSING UNITS

Top Ten Diagnostic-Related Groupings (DRG)
In Three Acute Care Hospitals
Across Twelve Medical-Surgical Nursing Units

DRG	Hospital A Description	#Cases	DRG	Hospital B Description	#Cases	DRG	Hospital C Description	#Cases
127	Heart Failure	368	112	Percutaneos CV Procedures	676	112	Percutaneous CV Procedures	513
124	Circ. Dis. AMI W/C & COMD	310	410	Chemo Ac Link	219	127	Heart Failure & Shock	231
125	Circ. Dis. Exc. AMI W/C & PIMD	281	125	Circ. Dis. Exc. Ami - W/C PIMD	155	106	CoronaryBypass W/Cardiac Cath	179
143	Chest Pain	237	106	Coronary Bypass W/ Cardiac Cath	103	182	Esoph/Gastro Digestive	174
14	Cerebrovasular Disorder	222	124	Circ. Dis. AMI - W/C & COMD	101	143	Chest Pain	163
410	Chemo AC Link	201	127	Heart Failure	98	89	Pneum/Pleur	156
89	Pnuem/Pleur	187	182	Esoph/Gast Digestive	85	320	Kid/Urinary Infection	155
182	Epoph/Gast Digestive	172	320	Kid/Urinary Infection	41	125	Circ Disor Exc AMI W/Cath	122
112	Cardiovascular Procedure	151	296	Nutr/Metabolic Disorder	35	138	Arrhyth/Conduc Dis W/CC	121
107	Coronary Bypass W/O Cardiac Cath	151	14	Cerebrovasular Dis	17	296	Nutr/Metabolic Disorder	113

Based on Third Quarter Fiscal Data YR1993

APPENDIX B

THE JOB DIAGNOSTIC SURVEY

JOB DIAGNOSTIC SURVEY

This questionnaire was developed as part of a study of jobs and how people react to them. The questionnaire helps to determine how jobs can be better designed, by obtaining information about how people react to different kinds of jobs.

On the following pages you will find several different kinds of questions about your job. Specific instructions are given at the start of each section. Please read them carefully.

The questions are designed to obtain *your* perceptions of your job and *your* reactions to it.

There are no trick questions. Your individual answers will be kept completely confidential. Please answer each item as honestly and frankly as possible. Thank you for your cooperation.

SECTION ONE

This part of the questionnaire asks you to decide your job, as *objectively* as you can. Please do *not* use this part of the questionnaire to show how much you like or dislike your job. Questions about that will come later. Instead, try to make your description as accurate and as objective as you possibly can.

A sample question is given below.

To what extent does your job require you to work with mechanical equipment?

1——2——3——4——5—— (6) ——7

Very little: the job requires almost no contact with mechanical equipment of any kind.	Moderately	Very much: the job requires almost constant work with mechanical equipment.

You are to *circle* the number which is the most accurate description of your job.

If, for example, you job requires you to work with mechanical equipment a good deal of the time—but also requires some paperwork — you might circle the number six, as was done in the example above.

* * * * * * * * * * *

1. To what extent does your job require you to *work closely with other people* (either "clients," or people in related jobs in your own organization)?

1——2——3——4——5——6——7

Very little: dealing with other people is not at all necessary in doing the job	Moderately: some dealing with others is necessary.	Very much: dealing with other people is an essential and crucial part of doing the job.

2. How much *autonomy* is there in your job? That is, to what extent does your job permit you to decide *on your own* how to go about doing the work?

1----------2----------3----------4----------5----------6----------7

Very little: the job gives me almost no personal "say" about how and when the work is done.	Moderate autonomy: many things are standardized and not under my control, but I can make some decisions about the work.	Very much: the job gives me almost complete responsibility for deciding how and when the work is done.

3. To what extent does your job involve doing a *"whole" and identifiable piece of work?* That is, is the job a complete piece of work that had an obvious beginning and end? Or is it only a small *part* of the overall piece of work, which is finished by other people or by automatic machines?

1----------2----------3----------4----------5----------6----------7

My job is only a tiny part of the overall piece of work; the results of my activities cannot be seen in the final product or service.	My job is a moderate-sized "chunk" of the overall piece of work; my own contribution can be seen in the final outcome.	My job involves doing the whole piece of work, from start to finish; the results of my activities are easily seen in the final product or service.

4. How much *variety* is there in your job? That is, to what extent does the job require you to do many different things at work, using a variety of your skills and talents?

1----------2----------3----------4----------5----------6----------7

Very little: the job requires me to do the same routine things over and over again.	Moderate variety.	Very much: the job requires me to many different things, using a number of different skills and talents.

5. In general, how *significant or important* is your job? That is, are the results of your work likely to significantly affect the lives or well-being of other people?

1----------2----------3----------4----------5----------6----------7

Not very significant; the outcomes of my work are not likely to have important effects on other people.	Moderately significant.	Highly significant; the outcomes of my work can affect other people in very important ways.

6. To what extent to *managers and co-workers* let you know how well you are doing on your job?

1----------2----------3----------4----------5----------6----------7

Very little; people almost never let me know how well I am doing.	Moderately; sometimes people may give me "feedback"; other times they may not.	Very much; managers or co-workers provide me with almost constant "feedback" about how well I am doing.

7. To what extent does *doing the job itself* provide you with information about your work performance? That is, does the actual *work itself* provide clues about how well you are doing—aside from any "feedback" co-workers or supervisors may provide?

1————2————3————4————5————6————7

Very little; the job itself is set up so I could work forever without finding out how well I am doing.	Moderately; sometimes doing the job provides "feedback" to me; sometimes it does not.	Very much; the job is set up so that I get almost constant "feedback" as I work about how well I am doing.

SECTION TWO

Listed below are a number of statements which would be used to describe a job.
You are to indicate whether each statement is an *accurate* or an *inaccurate* description of *your* job.
Once again, please try to be as objective as you can in deciding how accurately each statement describes your job—regardless of whether you like or dislike your job.

Write a number in the blank beside each statement, based on the following scale:

How accurate is the statement in describing your job?

1	2	3	4	5	6	7
Very Inaccurate	Mostly Inaccurate	Slightly Inaccurate	Uncertain	Slightly Accurate	Mostly Accurate	Very Accurate

_____ 1. The job requires me to use a number of complex or high-level skills.
_____ 2. The job requires a lot of cooperative work with other people.
_____ 3. The job is arranged so that I do *not* have the chance to do an entire piece of work from beginning to end.
_____ 4. Just doing the work requires by the job provides many chances for me to figure out how well I am doing.
_____ 5. The job is quite simple and repetitive.
_____ 6. The job can be done adequately by a person working alone—without talking or checking with other people.
_____ 7. The supervisors and co-workers on this job almost *never* give me any "feedback" about how well I am doing in my work.
_____ 8. This job is one where a lot of people can be affected by how well the work gets done.
_____ 9. The job denies me any chance to use my personal initiative or judgment in carrying out the work.
_____ 10. Supervisors often let me know how well they think I am performing the job.
_____ 11. The job provides me the chance to completely finish the pieces of work I begin.
_____ 12. The job itself provides very few clues about whether or not I am performing well.
_____ 13. The job gives me considerable opportunity for independence and freedom in how I do the work.
_____ 14. The job itself is *not* very significant or important in the broader scheme of things.

SECTION THREE

Now please indicate how *you personally feel about your job.* Each of the statements below is something that a person might say about his or her job. You are to indicate your own personal *feelings* about your job by marking how much you agree with each of the statements.

Write a number in the blank for each statement, based on this scale:

How much do you agree with the statement?

1	2	3	4	5	6	7
Disagree Strongly	Disagree Slightly		Neutral	Agree Slightly		Agree Strongly

_____ 1. It's hard, on this job, for me to care very much about whether or not the work gets done right.

_____ 2. My opinion of myself goes up when I do this job well.

_____ 3. Generally speaking, I am very satisfied with this job.

_____ 4. Most of the things I have to do on this job seem useless or trivial.

_____ 5. I usually know whether or not my work is satisfactory on this job.

_____ 6. I feel a great sense of personal satisfaction when I do this job well.

_____ 7. The work I do on this job is very meaningful to me.

_____ 8. I feel a very high degree of *personal* responsibility for the work I do on this job.

_____ 9. I frequently think of quitting this job.

_____ 10. I feel bad and unhappy when I discover that I have performed poorly on this job.

_____ 11. I often have trouble figuring out when I'm doing well or poorly on this job.

_____ 12. I feel I should personally take the credit or blame for the results of my work on this job.

_____ 13. I am generally satisfied with the kind of work I do in this job.

_____ 14. My own feelings generally are *not* affected much one way or the other by how well I do on this job.

_____ 15. Whether or not this job gets done right is clearly *my* responsibility.

SECTION FOUR

Now please indicate how *satisfied* you are with each aspect of your job listed below. Once again, write the appropriate number in the blank beside each statement.

How satisfied are you with this aspect of your job?

1	2	3	4	5	6	7
Extremely Dissatisfied		Slightly Dissatisfied	Neutral		Slightly Satisfied	Extremely Satisfied

_____ 1. The amount of job security I have.
_____ 2. The amount of pay and fringe benefits I receive.
_____ 3. The amount of personal growth and development I get in doing my job.
_____ 4. The people I talk to and work with on my job.
_____ 5. The degree of respect and fair treatment I receive from my boss.
_____ 6. The feeling of worthwhile accomplishment I get from doing my job.
_____ 7. The chance to get to know other people while on the job.
_____ 8. The amount of support and guidance I receive from my supervisor.
_____ 9. The degree to which I am fairly paid for when I contribute to this organization.
_____ 10. The amount of independent thought and action I can exercise in my job.
_____ 11. How secure things look for me in the future in this organization.
_____ 12. The chance to help other people while at work.
_____ 13. The amount of challenge in my job.
_____ 14. The overall quality of the supervision I receive in my work.

SECTION FIVE

Now please think of the *other people* in your organization who hold the same job you do. If no one has exactly the same job as you, think of the job which is most similar to yours.
Please think about how accurately each of the statements describe the feelings of those people about the job. It is quite all right if your answers here are different from when you described your *own* reactions to the job. Often different people feel quite differently about the same job.

Once again, write a number in the blank for each statement, based on this scale:

How much do you agree with the statement?

1	2	3	4	5	6	7
Disagree Strongly	Disagree	Disagree Slightly	Neutral	Agree Slightly	Agree	Agree Strongly

_____ 1. Most people on this job feel a great sense of personal satisfaction when they do the job well.

_____ 2. Most people on this job are very satisfied with the job.

_____ 3. Most people on this job feel that the work is useless or trivial.

_____ 4. Most people on this job feel a great deal of personal responsibility for the work they do.

_____ 5. Most people on this job have a pretty good idea of how well they are performing their work.

_____ 6. Most people on this job find the work very meaningful.

_____ 7. Most people on this job feel that whether or not the job gets done right is clearly their own responsibility.

_____ 8. People on this job often think of quitting.

_____ 9. Most people on this job feel bad or unhappy when they find that they have performed the work poorly.

_____ 10. Most people on this job have trouble figuring out whether they are doing a good or a bad job.

SECTION SIX

Listed below are a number of characteristics which could be present on any job. People differ about how much they would like to have each one present in their own jobs. we are interested in learning *how much you personally would like* to have each one present in your job.

Using the scale below, please indicate the *degree* to which you *would like* to have each characteristic present in your job.

NOTE: The numbers on this scale are difference from those used in previous scales.

4	5	6	7	8	9	10
Would like having this only a moderate amount (or less)			Would like having this very much			Would like having this *extremely* much

_____ 1. High respect and fair treatment from my supervisor.
_____ 2. Stimulating and challenging work.
_____ 3. Chances to exercise independent thought and action in my job.
_____ 4. Great job security.
_____ 5. Very friend co-workers.
_____ 6. Opportunities to learn new things from my work.
_____ 7. High salary and good fringe benefits.
_____ 8. Opportunities to be creative and imaginative in my work.
_____ 9. Quick promotions.
_____ 10. Opportunities for personal growth and development in my job.
_____ 11. A sense of worthwhile accomplishment in my work.

SECTION SEVEN

People differ in the kinds of jobs they would most like to hold. The questions in this section give you a chance to say just what it is about a job that is most important to you. *For each questions, two different kinds of jobs are briefly described. You are to indicate which of the jobs you personally would prefer* — if you had to make a choice between them.

In answering each question, assume that everything else about the jobs is the same. Pay attention only to the characteristics actually listed. Two examples are given below.

JOB A				*JOB B*
A job requiring work with mechanical equipment most of the day.				A job requiring work with other people most of the day.
1	2	(3)	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

If you like working with people and working with equipment equally well, you would circle the number 3, as had been done in the example.

This example asks for a harder choice—between two jobs which both have some undesirable features.

JOB A				*JOB B*
A job requiring you to expose yourself to considerable physical danger.				A job located 200 miles from your home and family.
1	(2)	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

If you would slightly prefer risking physical danger to working far from your home, you would circle number 2, as has been done in the example.

JOB A				*JOB B*
1. A job where the pay is very good.				A job where there is considerable opportunity to be creative and innovative.
1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B
2. A job where you are often required to make important decisions.				A job with many pleasant people to work with.
1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

3. A job in which greater responsibility given to those who do the best work.

A job in which greater responsibility is given to loyal employees who have the most seniority.

1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

4. A job in an organization which is in financial trouble—and might have to close down within the year.

A job in which you are not allowed to have any say whatever in how your work schedule, or in the procedures to be used in carrying it out.

1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

5. A very routine job.

A job were your co-workers are not very friendly.

1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

6. A job with a supervisor who is often very critical of you and your work in front of other people.

A job which prevents you from using a number of skills that you worked hard to develop.

1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

7. A job with a supervisor who respects you and treats you fairly.

A job which provides constant opportunities for you to learn new and interesting things.

1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

8. A job where there is a real chance you could be laid off. — A job with very little chance to do challenging work.

1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

9. A job in which there is a real chance for you to develop new skills and advance in the organization. — A job which provides lots of vacation time and an excellent fringe benefit package.

1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

10. A job with little freedom and independence to do your work the way you think best. — A job where the working conditions are poor.

1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

11. A job with very satisfying teamwork. — A job which allows you to use your skills and abilities to the fullest extent.

1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

12. A job which offers littles or no challenge. — A job which requires you to be completely isolated from co-workers.

1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

APPENDIX C

THE BRENNER PROFESSIONAL IDENTITY INDEX

The Brenner Professional Identity Index is copyrighted and can be secured from the author, Phyllis Brenner PhD, RN.

University of Colorado Health Sciences Center

4200 East Ninth Avenue
Denver, Colorado 80262

University Hospitals
School of Medicine

School of Nursing
School of Dentistry

School of Pharmacy
Graduate School

January 24, 1992

Ms. Cynthia Fleischer
4733 Center Avenue, Apartment 7A
Pittsburgh, Pennsylvania 15213

Dear Cynthia:

It was a pleasure speaking with you last week. I'm delighted I may be of assistance to you in your dissertation research. Enclosed is a copy of the Brenner Professional Identity Index (BPII). I would appreciate it if you would notify me, in writing, if you decide to utilize the index in your research.

Permission to use the index is granted, pending agreement with the following conditions:

1) the index will be reproduced only for use in your dissertation research.

2) the index will be used in entirety without any modifications.

3) appropriate acknowledgement of my authorship of the index.

4) access to measurement data and demographics will be provided to me on floppy disks in either ASC11 format or as an SPSS-PC file in order to facilitate future analysis of a pooled data set for further reliability and validity analysis.

Best wishes to you in your explorations of EQS: Structural Equations Program Manual by Peter M. Bentler (1989). BMDP Statistical Software, Inc., 1440 Sepulveda Boulevard, Los Angeles, California 90025; (213) 479-7799 or FAX (213) 312-0161.

The requested information regarding my dissertation is as follows: Temporal Perspective, Professional Identity, and Perceived Wellbeing, Dissertation Abstracts International, 47, 4821B. The full dissertation was printed by University Microfilms International in 1987 and is number 8706150.

I'm looking forward to hearing from you soon, after you've reviewed the BPII. As indicated when we spoke, I am working on a manuscript regarding my

Ms. Cynthia Fleischer
January 24, 1992
Page 2

instrumention study and I hope to be able to share a draft with you by late February or early March.

Congratulations again on successfully completing your qualifying exams!

Sincerely,

Phyllis S. Brenner

Phyllis S. Brenner, PhD, RN
Assistant Professor
PHONE: (303) 270-4237

PSB:dl

Enclosure

University of Colorado Health Sciences Center

4200 East Ninth Avenue
Denver, Colorado 80262

University Hospitals
School of Medicine

School of Nursing
School of Dentistry

School of Pharmacy
Graduate School

October 20, 1992

Cynthia Fleischer, MSN, RN
Doctoral Student
School of Nursing
University of Pittsburgh
3500 Victoria St.
Pittsburgh, PA 15261

Dear Ms. Fleischer:

I hereby grant you permission to use the instrument I developed entitled the Brenner Professional Identity Index (BPII) in your dissertation research. As discussed previously, I would appreciate your sharing your data on sample demographics and the psychometric testing of the BPII.

I'd also be delighted if you'd share the full citation for your dissertation when it is completed. The combination of variables you are studying are intriguing and I am looking forward to being able to read your entire dissertation. Best wishes to you in this important endeavor.

Sincerely,

Phyllis S. Brenner

Phyllis S. Brenner, PhD, RN
Assistant Professor
University of Colorado Health Sciences Center
School of Nursing, Campus Box C-288
4200 East Ninth Avenue
Denver, Colorado 80262

APPENDIX D

THE ORGANIZATIONAL CULTURE INVENTORY

human synergistics/
center for applied research, inc.

February 23, 1993

Cynthia G. Fleischer, MSN, RN
School of Nursing,
University of Pittsburgh

Dear Ms. Fleischer:

This letter is in reference to the use in your dissertation of our survey, the *Organizational Culture Inventory* (Cooke, R.A. and Lafferty, J.C.. Plymouth, MI: Human Synergistics, 1983, 1989).

I am pleased to confirm that you have permission to use this survey for the collection of data for your doctoral dissertation. Your may include in your dissertation copyrighted materials from the inventory (i.e., style descriptions, the culture profile) provided that you notify Human Synergistics in advance and use appropriate references and copyright notices in presenting such materials.

We look forward to receiving a copy of your completed dissertation.

Sincerely,

Robert A. Cooke, Ph.D.

Director,
Center for Applied Research

Associate Professor of Management,
University of Illinois at Chicago

216 Campus Drive Suite 102 Arlington Heights, IL 60004 Tel. (708) 590-0995 Fax (708) 590-0997

The Organizational Culture Inventory is copyrighted and can be secured from the author, Robert A. Cooke, PhD.

APPENDIX E

THE CULTURAL STYLES OF AN ORGANIZATION

The Cultural Styles of an Organization

Constructive Styles

(1) A Humanistic-Helpful culture characterizes organizations that are managed in a participative and person-centered way. Members are expected to be supportive, constructive, and open to influence in their dealings with one another. (Helping others to grow and develop; taking time with people)

(2) An Affiliative culture characterizes organizations that place a high priority on constructive interpersonal relationships. Members are expected to be friendly, open, and sensitive to the satisfaction of their work group. (Dealing with others in a friendly way; sharing feelings and thoughts)

(3) An Achievement culture characterizes organizations that do things well and value members who set and accomplish their own goals. Members of these organizations set challenging but realistic goals, establish plans to reach these goals, and pursue them with enthusiasm. (Pursuing a standard of excellence; openly showing enthusiasm)

(4) A Self-Actualization culture characterizes organizations that value creativity, quality over quantity, and both task accomplishment and individual growth. Members of these organizations are encouraged to gain enjoyment from their work, develop themselves, and take on new and interesting activities. (Thinking in unique and independent ways; doing even simple tasks well)

Passive-Defensive Styles

(5) An Approval culture describes organizations in which conflicts are avoided and interpersonal relationships are pleasant - at least superficially. Members feel that they should agree with, gain the approval of, and be liked by others. (Making sure people accept you; "going along" with others)

(6) A Conventional culture is descriptive of organizations that are conservative, traditional, and bureaucratically controlled. Members are expected to conform, follow the rules, and make a good impression. (Always following policies and practices; fitting into "the mold")

(7) A Dependent culture is descriptive of organizations that are hierarchically controlled and non-participative. Centralized decision making in such organizations leads members to do only what they are told and to clear all decisions with superiors. (Pleasing those in positions of authority; doing what is expected)

(8) An Avoidance culture characterizes organizations that fail to reward success but nevertheless punish mistakes. This negative reward system leads members to shift responsibilities to others and avoid any possibility of being blamed for a mistake. (Waiting for others to act first; taking few chances)

Aggressive-Defensive Styles

(9) An Oppositional culture describes organizations in which confrontation prevails and negativism is rewarded. Members gain status and influence by being critical and thus are reinforced to oppose the ideas of others and to make safe (but ineffectual) decisions. (Pointing out flaws; being hard to impress)

(10) A Power culture is descriptive of non-participative organizations structured on the basis of the authority inherent in members' positions. Members believe they will be rewarded for taking charge, controlling subordinates and, at the same time, being responsive to the demands of superiors. (Building up one's power base; motivating other any way necessary)

(11) A Competitive culture is one in which winning is valued and members are rewarded for outperforming one another. People in such organizations operate in a "win-lose" framework and believe they must work against (rather than with) their peers to be noticed. (Turning the job into a contest; never appearing to lose)

(12) A Competence/Perfectionistic culture characterizes organizations in which perfectionism, persistence, and hard work are valued. Members feel they must avoid all mistakes, keep track of everything, and work long hours to attain narrowly-defined objectives. (Doing things perfectly; keeping on top of everything)

APPENDIX F

THE NURSE'S PERCEPTION OF QUALITY SCALE

The Nurses' Perception of Quality Scale is copyrighted and can be secured from the author, Mary R. Lynn, PhD, RN.

THE UNIVERSITY OF NORTH CAROLINA
AT
CHAPEL HILL

Dean's Office (919) 966-3731
Associate Dean's Office 966-3733
Graduate Studies' Office 966-3733
Undergraduate Studies' Office 966-7511
Social and Admin. Systems Dept. 966-5681
Adult and Geriatric Health Dept. 966-4269
Community and Mental Health Dept. 966-4352
Health of Women and Children Dept. 966-4298

School of Nursing
CB# 7460, Carrington Hall
Chapel Hill, NC 27599-7460
FAX (919) 966-7298

Student Services 966-4260
Continuing Education 966-3638
AHEC Nursing 966-3735
Research Support Center 966-5420
Design and Technology Center 966-3601
Business Office 966-4266
Public Relations/Alumni Affairs 966-1412
Development Office 966-4619

October 30, 1992

Cynthia G. Fleischer, MSN, RN
Doctoral Student
School of Nursing
University of Pittsburgh
3500 Victoria Street
Pittsburgh, PA 15261

Dear Ms. Fleischer:

Thank you for your letter of October 1, 1992, in which you returned the agreement for use of the Nurse's Perception of Quality Scale (NPQS). You have my permission to use the NPQS in your dissertation research in which you will ne testing the strength of growth need strength, professional identity and organization culture on nurses' productivity and work quality. I look forward to hearing about the results of this interesting research.

If you have any questions as you proceed, please contact me at the above address or by phone at (919) 966-5450 (office) or (919) 942-9961.

Best of luck as you proceed with your research.

Sincerely,

Mary R. Lynn, PhD

NPQS-ACV Agreement Form

In order to use the NPQS-ACV, I agree to the following:

1. The NPQS-ACV will be reproduced and distributed only for the purposes of this research or evaluation project. Neither the NPQS-ACV or the weighting scheme will be distributed to others for their perusal or use.

2. A copy of both the raw data and any written results from use of the scale will be mailed to Mary Lynn upon completion of the study. If these data are used in any publication describing the scale, credit will be given for the data in whatever manner you describe.

3. The NPQS-ACV or its weighting scheme will not be published in any manner, either as an internal document, paper published in a conference proceeding or a journal article, without explicit written permission from Mary Lynn.

4. The weighting scheme will not be shared with anyone outside the project team for this particular project.

5. All copies of the NPQS-ACV will contain the following statement at the bottom of the first page:

_____
Signature

_____
Name

_____
Date

_____
Anticipated completion date of study

APPENDIX G

DEMOGRAPHIC DATA FORM

Demographic Data Form

Please select the best possible descriptor in each category. Answer by placing an X in the most appropriate space. Thank you for your candor.

1. Age _____ 2. Gender _____

3. How many years have you been a licensed professional nurse?

_____

4. How many years worked on your present unit?

_____

5. How many years have you worked at this hospital?

_____

6. What is your current job classification?

_____ Nurse I
_____ Nurse II
_____ Nurse III
_____ Nurse IV
_____ Other (please specify)
_____

7. How many hours do you usually work per week?

_____ < 8 hours
_____ 8 - 16 hours/week
_____ 17 - 24 hours/week
_____ 25 - 32 hours/week
_____ 40 hours/week
_____ more than 40/week

8. How many hours do you usually work per shift?

_____ 4 hours or less
_____ 8 hours or less
_____ 10 hours
_____ 12 hours
_____ > 12 hours
_____ Other (please specify)
_____

9. What shifts do usually work?

_____ daylight
_____ evenings
_____ nights

10. When do you usually work?

_____ rotate D/E
_____ rotate D/N
_____ rotate E/N
_____ weekdays only
_____ weekends only
_____ rotate weekdays, weekends, and holidays

11. What is the highest level of education you have attained?

_____ Diploma
_____ ADN
_____ BSN
_____ MSN
_____ PhD
_____ Degree in discipline other than nursing
Please specify degree and discipline
_____

12. Which type of nursing delivery system is used in your hospital?

_____ Functional
_____ Team
_____ Modular
_____ Primary
_____ Case Management
_____ Other (please specify)
_____
_____ Don't Know

13. How would you rate your job performance as a nurse?

much better than average _____
better than average _____
about average _____
slightly below average _____
considerably below average _____

14. How would most of your professional nurse co-workers rate your job performance as a nurse?

much better than average _____
better than average _____
about average _____
slightly below average _____
considerably below average _____

15. How would your immediate supervisors rate your job performance as a nurse?

much better than average _____
better than average _____
about average _____
slightly below average _____
considerably below average _____

APPENDIX H

CRITIKON PATIENT CLASSIFICATION SYSTEM

The Critikon Patient Classification System is copyrighted and can be secured from the author: Critikon Inc. A Johnson & Johnson Company. 4110 George Road, Tampa, FL

APPENDIX I

INSTITUTIONAL REVIEW BOARD APPROVAL

University of Pittsburgh
SCHOOL OF NURSING

TO: Cynthia G. Fleischer, MSN, RN

FROM: Janyce G. Dyer, DNSc, RN, CS
Authorized Representative
Psychosocial IRB
360 Victoria Building
(412) 624-6950

DATE: May 26, 1993

SUBJECT: **Exempt IRB Classification**
Title: An Empirical Test of the Work Design Moderators of the Personal and Work Outcomes of Professional Nursing Practice in Acute Care Organizations
Advisor: Enid Goldberg, PhD, RN
File Number: 5-93-2

Your study is classified as Exempt Research under Part 45, Section 46.101(b) of the Code of Federal Regulations as follows:

> "Research activities in which the only involvement of human subjects will be in one or more of the following categories are exempt...
> (3) Research involving a survey or interview procedures..."

The study protocol assures that data is handled in a confidential manner. No risk of criminal or civil liability is apparent nor is material of a sensitive nature to be collected.

According to IRB guidelines, this exemption is effective until 5/26/94, and a progress report or letter of termination and final report are due to this office by that date. If any untoward reaction occurs as a result of this study, or the study is terminated for any reason, please send particulars to this office as soon as possible. If the study extends beyond one year, renewal of all protocols are mandatory and must be approved at least 30 days before the anniversary of the original approval date.

Please refer to the above IRB file number on all correspondence or telephone inquiries.

June 30, 1993

Janyce G. Dyer DNSc, RN, CS
Assistant Professor
University of Pittsburgh
School of Nursing VB #360
Authorized Representative
Psychosocial IRB

Dear Dr. Dyer,

I have recently discussed and received permission from my dissertation chair, Enid Goldberg PhD, RN, to offer an incentive to the professional sample participating in the study entitled "An Empirical Test of the Work Design Moderators of the Personal Nad the Work Outcomes of Professional Nursing Practice in Acute Care Organizations" (protocol #5-93-2). I-am respectfully submitting the required modification form for your review and signature.

Attached are modification forms to be signed, a revised protocol with the modifications highlighted in the text, and the letters distributed to the Unit Managers and professional nurse group which explain the incentive. Please return to me the additional modification forms that I have enclosed for your signature. I will need to inform each of the hospital settings IRB Chairs of the modification as well as forward one to Dr. Goldberg.

Thank you for your support in this ongoing academic project.

Sincerely,

Cynthia G. Fleischer
Doctoral Candidate

The Mercy Hospital of Pittsburgh
1400 Locust Street
Pittsburgh, PA 15219-5166
412-232-

Mercy Hospital

April 6, 1993

Roger R. Barrette, M.D.
Chair
Research and Human Rights Committee
Mercy Hospital of Pittsburgh
1400 Locust Street
Pittsburgh, PA 15219

Dear Dr. Barrette:

The Nursing Research Committee approved Cynthia Fleischer's proposed study, "An Empirical Test of the Work Design Moderators of the Personal and Work Outcomes of Professional Nursing Practice in Acute Care Organizations" on March 29, 1993. I am willing to serve as Ms. Fleischer's sponsor for this proposed study here at Mercy Hospital.

She will ask the Registered Nurses on 10 Mercy Tower, 12 Mercy Tower, 8 McAuley, and the Intermediate Care Unit to complete the survey. There will be no identifiers on the survey form except for a number which indicates to which unit the survey was distributed. The nurse subjects will be asked to complete the survey on their own time so there is minimal financial impact on Mercy Hospital to participate in this study. The Nurse Managers of the involved units have agreed to facilitate the distribution of the surveys by Ms. Fleischer.

If you have any questions about this study please contact me at 232-7269. Thank you.

Sincerely,

Gail Mallory

Gail Mallory, PhD, RN
Nurse Researcher

The Mercy Hospital of Pittsburgh
1400 Locust Street
Pittsburgh, PA 15219-5166
412-232-

195

Mercy Hospital

March 16, 1993

Roger R. Barrette, M.D.
Chair
Research and Human Rights Committee
Mercy Hospital of Pittsburgh
1400 Locust Street
Pittsburgh, PA 15219

Dear Dr. Barrette:

This letter is in support of Cynthia Fleischer's, MSN, RN research proposal, "An Empirical Test of the Work Design Moderators of the Personal and Work Outcomes of Professional Nursing Practice in Acute Care Organizations".

Ms. Fleischer has discussed her proposed study with us. She is requesting to ask RNs on 12MT, 10MT, 8 McAuley, and the IMC to participate in this study. We will be happy to facilitate her access to our respective staff nurses by introducing her at staff meetings and/or at the change of shifts. We understand that the completion of this survey will take approximately one hour and that our staff will be expected to complete the survey on their own time.

We are very interested in learning the results of Ms. Fleischer's study. If you have any questions about our support please contact us or Dr. Mallory, Nurse Researcher, at 232-7269

Thank you.

Sincerely,

Cathy Ebel

Cathy Ebel, RN, BSN, OCN
Nurse Manager, 10MT

D Frank RN MSN

Deborah Frank, RN, MSN
Nurse Manager, 12MT

Sharon Thrush

Sharon Thrush, RN, CCRN
Nurse Manager, 8 McAuley and IMC

The Mercy Hospital of Pittsburgh
1400 Locust Street
Pittsburgh, PA 15219-5166
412-232-

196

Mercy Hospital

April 23, 1993

Cynthia G. Fleischer Ph.D.(c), M.S.N., R.N.
4733 Center Avenue #7A
Pittsburgh, PA 15213

RE: "An Empirical Test of the Work Design Moderators of the Personal and Work Outcomes of Professional Nursing Practice in Acute Care Organizations"
Protocol #351

Dear Dr. Fleischer:

Thank you for submitting the above referenced protocol to the Research and Human Rights Committee.

This is to inform you that upon review of your protocol it was determined that it will be exempt from full or expedited review. The entire Research and Human Rights Committee will review your protocol at their meeting on April 26, 1993.

This is a provisional approval letter that allows you to proceed with your study. A follow-up letter will be sent to you after the meeting either giving approval or asking for revisions to your protocol. If you have any questions, please feel free to call me at 232-7786.

Sincerely yours,

Roger R. Barrette, M.D., Chairman
Research and Human Rights Committee

/pd

cc: JoAnn V. Narduzzi, M.D.
Gail Mallory, Ph.D., R.N.

4733 Centre Avenue #7A
Pittsburgh, PA 15213
May 10, 1993

Roger R. Barrette MD
Chairman
Research and Human Rights Committee
Mercy Hospital
1400 Locust Street
Pittsburgh, PA 15219-5166

Dear Dr. Barrette,

I have received and reviewed the recommendations suggested by the Research and Human Rights Committee for Protocol #351, entitled An Empirical Test of Work Design Moderators of the Personal and Work Outcomes of Professional Nursing Practice in Acute Care Organizations. In addition, my dissertation chair, Enid Goldberg PhD, RN has reviewed both your recommendations and this response to them. The recommendations of Mercy Hospital's Research and Human Rights Committee will be addressed narratively in the order in which they were presented as well as referenced with attachments where appropriate.

The level of risk to the participants in any survey study is minimal. While however slight, some psychological distress can occur during and after completing any questionnaire. The amount of psychological distress is related to the respective emotional stamina of the respondent and the relative strength of any introspective prompts within the content of a questionnaire. There have been, however, no prior reports of any psychological ramifications in study participants who have responded to the questionnaires used in this study (The Job Diagnostic Survey, The Professional Identity Index, The Organizational Culture Inventory, and The Nurse's Perception of Quality Scale).

Three sites will be employed to draw the professional nurse sample in this study of the personal and work outcomes of professiona! nursing practice in acute care organizations. Each one of the acute care organizations uses the same patient classification system to measure professional nursing productivity at the unit and organizational level. This productivity measure is one of several dependent variables in this study. Mercy Hospital will be used to draw one-third of the professional nurse sample, the remaining two-thirds of the sample will be drawn from professional nurses working at Shadyside Hospital and West Penn Hospital. The identifiers Hospital A, Hospital B and Hospital C were arbitrary labels assigned by the investigator and will not be disclosed due to the confidentiality concerns of each respective acute care organization.

A curriculum vitae of the Investigator is included in this response and is labeled Attachment A.

The questionnaires operationalize all of the independent variables and two of the dependent variables of the theoretical framework being tested by this study. (Attachment B depicts the theoretical framework of the study in schemata form). The job Diagnostic Survey measures the motivating potential of work, the psychological states, the growth need strength of the employee, and the personal outcomes of motivation and satisfaction. The Professional Identity Index measures the registered staff nurse's identification with professional prescriptions of nursing as a discipline. The Organizational Culture Inventory measures the staff nurse's perception of the workplace environment. The Nurse's Perception of Quality Scale measures an individual registered nurse's view of the aspects of nursing care quality.

There is only one professional nurse sample in this study. The professional nurse sample is being drawn from three respective acute care organizations to increase the external validity of the findings of the study.

The data collected in this study will be reported in professional journals and at academic seminars in an aggregate form. Individual respondent identifiers or organizational descriptions will not be examined or reported in this study.

Response rates for mailed surveys have been reported to be lower than techniques which support a participative relationship between the respondent and the investigator. The exposure of the professional nurse sample to the investigator during the frequent retrieval of completed surveys from the collection box was hoped to increase the response rate in this group. Removing the sealed data collection box from the daily view of the respondents may have an adverse affect on the response rate of this professional nurse sample. In addition, the recommended change in this study's data collection procedure (a mailing of completed questionnaires back to the investigator) will need to be approved by my dissertation committee as well as the other data collection sites Institutional Review Boards. However, I am willing to pursue this recommendation if access to this professional nurse group is contingent upon the change.

The consent form was modified per the Chairpersons's original request of 4-15-93. (Attachment C).

Thank you for the opportunity to address the Committee's concerns and recommendations. I look forward to a favorable response from you as well as the Committee. I will call your office later this week to inquiry of the status of Protocol #351 as well as make myself available to personally meet with you if needed. Thanks again, Dr. Barrette for your support in this academic endeavor.

Sincerely,

Cynthia G. Fleischer MSN, RN
Doctoral Candidate
University of Pittsburgh
School of Nursing

cc: Gail Mallory PhD, RN

The Mercy Hospital of Pittsburgh
1400 Locust Street
Pittsburgh, PA 15219-5166
(412) 232-

199

Mercy Hospital

June 1, 1993

Cynthia G. Fleischer, Ph.D.
4733 Centre Avenue, #7A
Pittsburgh, PA 15213

RE: Protocol #351
"An Empirical Test of the Work Design Moderators on the Personal and Work Outcomes of Professional Nursing Practice in Acute Care Organizations"

Dear Dr. Fleischer:

Thank you for submitting the requested revisions to the above referenced protocol.

This is to inform you after review of the revisions, the Research and Human Rights Committee has given the protocol approval.

As required for all approved protocols, annual reports are expected to be submitted to the Committee.

If you have any questions or comments, please feel free to call me at 232-7786.

I would like to offer my personal wishes for continued success with your study.

Sincerely yours,

Roger R. Barrette, M.D., Chairman
Research and Human Rights Committee

/jmb

cc: JoAnn V. Narduzzi, M.D.
Gail Mallory, Ph.D., RN

July 5, 1993

Roger R. Barrette MD
Chair
Research & Human Rights Committee
Mercy Hospital
1400 Locust Street
Pittsburgh, PA 15219

Dear Dr. Barrette,

I have recently received permission from my dissertation chair, Enid Goldberg PhD, RN, and The University of Pittsburgh Psychosocial Institutional Review Board to offer an incentive to the professional nurse sample in the study entitled "An Empirical Test of the Work Design Moderators of the Personal and the Work Outcomes of Professional Nursing Practice in Acute Care Organizations." A one year subscription to a refereed journal of the unit's choice will be purchased by the investigator for those units which reach a response rate of 70%. The 70% response rate must be achieved by the end of the data collection period, July 11, 1993. A copy of the University of Pittsburgh IRB acknowledgement of the modification of my dissertation proposal is attached.

A revised proposal with the modifications highlighted in bold type is also been enclosed. A letter, to again solicit participation in the study, has been inserted into the professional nurse employee unit-based mailboxes. A copy of the letter the staff nurse received is attached.

To date, the overall response rate across all three settings is 40%. Alternative data analysis plans will be discussed with my statistician, Steven Belle PhD upon completion of data collection.

Please feel free to call me or my dissertation chair (624-5496) if you have questions or concerns. Thank you for your continued support of this academic project.

Sincerely,

Cynthia Fleischer MSN, RN
Doctoral Candidate

The Mercy Hospital of Pittsburgh
1400 Locust Street
Pittsburgh, PA 15219-5166
(412) 232-

201

Mercy Hospital

August 4, 1993

Cynthia G. Fleischer, Ph.D.
4733 Centre Avenue, #7A
Pittsburgh, PA 15213

RE: Protocol #351
"An Empirical Test of the Work Design Moderators of the Personal and Work Outcomes of Professional Nursing Practice in Acute Care Organizations"

Dear Dr. Fleischer:

Thank you for submitting the amendments to the above protocol.

This is to inform you that the Research and Human Rights Committee, at its meeting of July 26, 1993, approved the amendments as submitted.

As required for all approved protocols, annual reports are expected to be submitted to the Committee.

If you have any questions or comments, please feel free to call me at 232-7786.

I would like to offer my personal wishes for continued success with your study.

Sincerely yours,

Roger R. Barrette, M.D., Chairman
Research and Human Rights Committee

/mdt

cc: JoAnn V. Narduzzi, M.D.

4800 Friendship Avenue
Pittsburgh, PA 15224
(412) 578-5000

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WESTERN PENNSYLVANIA HOSPITAL
NURSING DIVISION
NURSING EDUCATION AND RESEARCH

Nursing Research Project Approval

Title of Project An Empirical Test of Work Design Moderators of Professional Nursing Practice in Acute Care Organizations

Investigator Cynthia G. Fleischer, MSN, RN

Date Project to Begin 5/15/93

Date Project to End 6/15/93

I approve the above research project to be conducted at West Penn Hospital.

Kathy A McLaughl	5/5/93
(Director, Nursing Education & Research)	(Date)
[signature]	5/5/93
(Nurse Manager)	(Date)
[signature]	5/5/93.
(Nurse Manager)	(Date)
[signature]	5/5/93
(Nurse Manager)	(Date)
[signature]	5-5-93
(Nurse Manager)	(Date)

SS:aah

5/5/93

ProjAppr.doc

SHADYSIDE HOSPITAL

5230 Centre Avenue
Pittsburgh, Pennsylvania 15232
412/623-2121

March 29, 1993

Bob Weber, R.Ph., M.S.
Secretary, Human Investigation Committee

Dear Bob,

Enclosed is a proposal entitled "An Empirical Test of the Work Redesign Moderators of the Personal and Work Outcomes of A Professional Nursing Practice". This is a doctoral dissertation proposal from Cynthia Fleischer from the University of Pittsburgh. This proposal was approved in the Nursing Executive Committee Meeting of March 18, 1993 and we are hereby submitting it to you for expedited review through the Human Investigation Committee. Thank you.

Sincerely,

Mary E. Auberman

Mary E. Auberman, R.N., Ph.D.
Director School of Nursing

cc: Cynthia Fleischer

SHADYSIDE HOSPITAL

5230 Centre Avenue
Pittsburgh, Pennsylvania 15232
412/623-2121

May 14, 1993

Cynthia Fleischer, R.N., M.S.N.
4733 Centre Avenue #7A
Pittsburgh, PA 15213

Dear Ms. Fleischer:

This letter is in response to your protocol titled "An Empirical Test of the Work Redesign Moderators of the Personal and Work Outcomes of a Professional Nursing Practice" which you have submitted for review by the Human Investigation Committee. Following review of this protocol by the Human Investigation Committee, approval has been granted by the expedited process.

Shadyside Hospital and FDA regulations required that you notify the Chairman or his designee should there be any adverse effects from your protocol. In addition, should there be any changes in the protocol and informed consent, please notify the Chairman as soon as possible. Finally, you will be asked to submit an annual summary of your results.

Thank you for your cooperation with these requests.

Sincerely,

Robert J. Weber, R.Ph., M.S., FASHP
Secretary, Human Investigation Committee

RJW/drm

cc: Thaddeus A. Osial, Jr. M.D., Chairman

APPENDIX J

LETTER OF INTRODUCTION AND CONSENT

University of Pittsburgh
SCHOOL OF NURSING

5/26/93 Approved
Psychosocial IRB
University of Pittsburgh

Dear Professional Nurse,

The work you do as a professional nurse in an acute care hospital is sometimes challenging and fulfilling on both a personal and professional level. Yet, that same work, for any number of reasons, can be boring or frustrating.

As a graduate student at the University of Pittsburgh, School of Nursing, I am conducting a study of professional nurse perceptions of their work. I am respectfully requesting your participation in this study.

Participation in this study is entirely voluntary and will not in any way affect your educational or employment status at this facility. You are free to refuse to participate. There are no adverse affects known to be associated with participation in survey research. Your responses to the survey questions are confidential, will be reported at the group level, and will only be shared with others in the form of research papers or presentations.

A returned, completed survey will indicate your individual consent to participate in this study. The survey packet attached to this letter contains four sections and will take approximately 60 minutes to complete. Answer each question as honestly as possible. Please insert the completed survey into the envelope provided and deposit the sealed envelope in the collection box labeled C. Fleischer located on your nursing unit.

If questions should arise regarding the study or your participation in the study, please do not hesitate to contact me or my dissertation chairperson, Enid Goldberg, PhD, RN, at the University of Pittsburgh, School of Nursing, VB #416, 3500 Victoria Street, Pittsburgh, PA, 15261 or by phone at (412) 624-9256.

Thank you for your support in this academic endeavor. Your participation in this study will contribute to a better understanding of the work of the professional nurse in acute care hospitals. Your candor and cooperation are appreciated.

Sincerely,

Cynthia Fleischer MSN, RN
Doctoral Candidate
University of Pittsburgh
School of Nursing

3500 VICTORIA STREET, PITTSBURGH, PA 15261

APPENDIX K

ABSTRACT OF PROPOSAL

An Empirical Test of the Work Design Moderators of the Personal and Work Outcomes of Professional Nursing in Acute Care Organizations

Ever increasing numbers of nurse executives, especially those in acute care organizations, have accepted the challenge to identify the most efficient and effective method of (re)designing the work of professional nursing. However, theory-generated work design strategies are not currently guiding the conceptualization of professional practice models or the implementation of the organizational interventions which support them. Empirically tested theoretical frameworks are needed to guide current professional nursing work (re)design strategies, especially those undertaken in acute care organizations. The purpose of this study is to empirically test an extension of The Job Characteristics Model of work redesign (Hackman & Oldman, 1975, 1980). This study will use a correlational survey design to explore the strength and direction of the relationships among the variables of the extension of The Job Characteristics Model. Three (3) acute care organizations in southwestern Pennsylvania, which meet the established setting inclusion criteria, will be used to draw the sample. The sample will consist of a total of 300 professional nurses. One hundred (100) professional nurses will be solicited from each of three respective acute care organizations. The entire professional nurse sample will be collectively surveyed over a two week period. The Job Diagnostic Survey, as originally developed by Hackman and Oldham (1975), will be used to measure the individual characteristics of the job, the critical psychological states, the growth need strength of the employee, and the personal work outcomes of motivation and satisfaction. The Brenner Professional Identity Index, a 33 item tool, comprised of six empirically confirmed factors, will measure an individual's professional identity (Brenner, 1991). The Organizational Culture Inventory, as developed and refined by Cooke (1988, 1991) will operationalize the employee's perception of the organizational environment. The work outcome measure of quality will be measured at the individual level using the Nurse Perception of Quality Scale (Lynn, 1991). At the unit level, the work outcome of quality will be measured using pre-established clinical indicators of quality care within each of the settings. Productivity of the individual nurse will be measured using three likert-scaled questions. At the unit level, productivity will be measured in hours of nursing care per day using the existing patient classification data available from each of the settings. If the sample remains of sufficient size and the data are normally distributed, parametric statistical procedures will be used to analyze the data. Alpha will be set at .05 for all statistical analysis procedures. Path analysis procedures will be used to determine the strength and direction of the predicted relationships within the original Job Characteristics Model as well as the proposed theoretical extension of the model.

APPENDIX L

FOLLOW-UP LETTER

University of Pittsburgh
SCHOOL OF NURSING

July 1, 1993

Dear Professional Nurse,

As a graduate student at The University of Pittsburgh, School of Nursing I am conducting a study of the relationship between professional nurse perceptions of their work and the personal outcomes of motivation and job satisfaction and the work outcomes of quality and productivity. During the week of June 14, 1993 I personally requested your individual participation in this dissertation research project entitled "An Empirical Test of the Work Design Moderators of the Personal and Work Outcomes of Professional Nursing Practice in Acute Care Organizations."

Research activities impact treatment protocols, professional practice standards as well as the unit and organizational strategies which support the delivery of patient care. Clinical research over the past decade has shaped the nursing and the medical treatment protocols that are currently considered to be state-of-the-art care modalities. The clinical effectiveness of using of saline rather than heparin to maintain the patency of IV access lines exemplies nursing research turned state-of-the-art practice. Likewise, progressive exercise programs (Cardiac Rehab) have replaced prolonged bedrest as the treatment of choice during recovery from an MI.

Nursing administration research activities also support professional nursing practice in hospitals. Participation at the staff nurse level is often necessary to identify and test the management strategies currently used by nurse administrators. Your active participation in nursing administration research studies today will help shape the professional nursing work environment of the future.

If you have already completed the survey and returned the packet to me, thank-you. Be assured that your individual contribution to the development state-of-the-art nursing administration practices will significantly impact your professional practice.

However, if you have not completed and returned the survey, I am again requesting your participation. A refereed nursing journal of your unit's choice will be purchased by the investigator for all units in the study that achieve at least a 70% response rate. The 70% response rate must be reached by the end of the data collection period, July 11, 1993. Currently, the overall response rate achieved across all 12 nursing units during the first two weeks of data collection is 30%.

Thank you for your support of this academic endeavor. Your participation in this study will contribute to a better understanding of the work of professional nurses in acute care hospitals. If questions arise, please to not hesitate to call me or my dissertation chair, Enid Goldberg PhD, RN at the University of Pittsburgh, School of Nursing, by phone at (412) 624-9256.

Sincerely,

Cynthia Fleischer MSN, RN
Doctoral Candidate

3500 VICTORIA STREET, PITTSBURGH, PA 15261

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BIBLIOGRAPHY

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