

The Relational Resource Distribution Model: An Evaluation Of Control Over Nursing  
Practice And The Design Of Nurses' Work

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## Abstract

Leo Yurek: The Relational Resource Distribution Model: An evaluation of control over nursing practice and the design of nurses work

(Under the direction of Donna Sullivan Havens, Linda C. Hughes, Joseph Vasey, Rumay Alexander, and Gwen Sherwood)

The conception of control over nursing practice (CONP) is examined in the nursing literature along with the business and organizational behavior literature in an effort to reduce the conceptual ambiguity associated with control. Measures for control in the nursing literature are examined. In particular, the number and variation among different scales used to measure control, confounding of disparate conceptions within the same measure, conceptual definitions, dimensionality, reliability, and assessments of validity are investigated that may explain the falsifiability and empirical disconfirmation, threats to construct validity, and the diminution of explanatory power associated with the measurement instability of CONP. The Relational Resource Distribution Model, an investigator developed framework is introduced and evaluated as a relevant tool in the examination and design of nurses' work. The Relational Resource Distribution Model is used to examine the influence of CONP on staff nurse perceptions of patient care quality and job satisfaction.

CONP is examined as a 2-dimensional construct with a content dimension related to the sanctioned duties of nurses bound to a special body of knowledge and specific set of nursing skills; and the context dimension of CONP that relates to how nurses perform within the structural dimensions of organization. Both dimensions of control are investigated in different models to explore the differential effects related to each specific

dimension. Empirical support from confirmatory factor analytic techniques distinguishes the content dimension of CONP from the context dimension of CONP. Each dimension is evaluated separately at the work-group level for its effects on patient care quality and job satisfaction using hierarchical linear modeling. Content-CONP is a stronger predictor of patient care quality than job satisfaction at the group level of analysis. However, context-CONP is not a significant predictor of either job satisfaction or patient care quality in this analysis for this sample. Lastly, emotional exhaustion is evaluated as a mediator in the CONP-outcome relationship and found to have a significant indirect effect. Indirect effects were confirmed with the Sobel product coefficient test. A 95% CI was established with the use of PRODCLIN, a web-based calculator that uses an asymmetric distribution of the product coefficient resulting in a more accurate estimate.

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## Table of Contents

List of Tables.....	xi
List of Figures.....	xii
Chapter	
I. Introduction.....	1
Autonomy or Control over Nursing Practice (CONP).....	3
Control.....	5
Decisional Involvement.....	7
Work Design.....	9
Conclusion.....	10
References.....	13
II. Theoretical Perspectives On Work Design.....	20
Job Design: The Early Years.....	20
Prominent Work Design Theories.....	24
Job Characteristics Model (JCM).....	24
Job Demands-Control Model (DCM).....	26
Job Demands-Resources Model (JD-RM).....	27
Job Impact Framework (JIF).....	29
Integration of Theoretical Perspectives on Work Design.....	30
Operant Mechanism.....	31
Job Characteristics.....	31

Cognitive-Energetic Processes.....	33
Job Control.....	35
The Relational Resource Distribution Model.....	38
Conclusions.....	40
References.....	42
III. An Integrative Review of the Literature on Control Over Nursing Practice (CONP).....	47
Methodology for Integrative Literature Review.....	50
Study Selection Criteria.....	50
Data Extraction.....	51
Unit of Analysis.....	52
Theoretical or Conceptual Frameworks.....	53
Conceptual Definition of CONP.....	54
CONP and Conceptual Dualism.....	57
Measurement of CONP.....	58
Reliability and Validity.....	60
Dimensionality.....	61
Study Findings.....	61
CONP and Satisfaction.....	63
CONP and Patient Care Quality.....	64
CONP and Emotional Exhaustion.....	66
Discussion.....	68
Chapter Summary.....	70
References.....	72



IV. Factorial Validity of the Decisional Involvement Scale as a Measure of CONP: A Two Dimensional Construct.....	89
Study Methodology.....	92
Research Design.....	92
Procedures for Data Collection.....	92
Sample.....	93
Measure: Decisional Involvement Scale (DIS).....	94
Data Analysis.....	95
Content Validity of DIS as a Measure of CONP....	95
Factorial Validity of DIS as a Measure of CONP...	96
Study Findings.....	97
Discussion.....	100
Limitations.....	104
Implications for Future Research.....	104
Conclusion.....	105
References.....	107
V. Control Over Content and Context of Nursing Practice as a Group-Level Predictors of Nurse-Reported Patient Care Quality and Job Satisfaction.....	118
Theoretical Perspectives.....	119
Review of Literature.....	121
Control Over Nursing Practice.....	121
Nurse Satisfaction.....	122
Emotional Exhaustion.....	123

Methods.....	123
Design.....	123
Procedures for Data Collection.....	124
Sample.....	125
Measurement of Key Study Variables.....	126
Control Over Nursing Practice.....	126
Emotional Exhaustion.....	127
Desired Outcomes.....	128
Data Analysis.....	128
Aggregation to the Group-Level.....	129
Model Testing.....	129
Results.....	130
Group-Level of Analysis.....	130
Control over the content of nursing practice.....	130
Control over the context of nursing practice.....	131
Multilevel Mediation Analysis.....	131
Content-CONP and patient care quality.....	131
Content-CONP and job satisfaction.....	132
Context-CONP and desired outcomes.....	132
The Sobel Test for Indirect Effect.....	132
Discussion.....	133
Limitations.....	134
Implications for Future Research.....	135

	Conclusions.....	136
	References.....	138
VI.	Dissertation Summary.....	144
	References.....	149

## List of Tables

### Table

3.1	References by Measure of CONP and Relationship Job Satisfaction, Patient Care Quality, or Emotional Exhaustion.....	82
3.2	Instrumentation for CONP: Conceptualization, Dimensionality, Level of Analysis, and Conceptual Framework.....	83
3.3	Confounded Measures of Control and Work Characteristics.....	85
3.4	Reliability and Validity of Instruments Measuring Control.....	87
4.1	Item Means and Standard Deviations and Inter-item Covariance Matrix.....	111
4.2	Model Fit Indices	113
5.1	Aggregation Analysis: $Rwg_{(j)}$ For Measures at Designated Levels of Analysis.....	142
5.2	Relationship Between Criterion and Dimensions of CONP.....	143

## Table of Figures

### Figure

2.1	The Relational Resource Distribution Model.....	46
3.1	Selection Process for Review of Literature.....	81
4.1	One-Dimensional First-Order Structure of CONP.....	114
4.2	Two-Dimensional First-Order Structure of CONP.....	115
4.3	Six-Factor Second-Order Structure of CONP.....	116
4.4	Two-Factor Second-Order Structure with Dimensions for Content and Context.....	117

## **Chapter 1**

### **Introduction**

In 2000, the Institutes of Medicine (IOM) reported unacceptable rates for preventable adverse events such as patient falls, nosocomial infections, and medication errors during hospitalization; yet little evidence exists to demonstrate a sustained decline in preventable adverse events during the past decade (Kohn, Corrigan, & Donaldson, 2000; Page, 2004). Surprisingly, the National Health Care Quality Report (NHQR) which monitors the implementation of evidence-based practice guidelines among health care organizations recently documented that the rate at which formalized practice guidelines are implemented has slowed significantly from only 2.3% between 1994 and 2005 to just 1.5% between 2000 and 2005 (AHRQ, 2007). The most recent NHQR published in 2009 by the Agency for Healthcare Research & Quality (AHRQ) reported that measures of patient safety in the [2008] NHQR not only failed to improve but in fact declined. This report raises important questions about the way patient care is provided in this country. Specifically, there is growing recognition that hospital governing structures and the operating systems that support patient care delivery may not only diminish patient care quality but also contribute to patient harm (Page, 2004; AHRQ, 2009).

The governing structures and operating systems that support patient care delivery play an integral role in determining the quality of nursing practice in hospitals. Although there may not be one single best way to design nurses' work in hospitals, governing structures and operating systems that support the work of nurses are critical. Nurses are

the largest group of providers in hospitals and, in their role as key frontline providers contributes the following essential services: (a) patient surveillance (Mitchell & Shortell, 1997), (b) delivery of high quality and safe patient care, and (c) interception of potential adverse drug events and medication errors (Leape et al., 1995). In fact, there is growing evidence that governing structures and operating systems that are inadequate to support quality nursing practice can have dire consequences for patients (AHRQ, 2009; Kohn et al., 2000; Page, 2004). Inadequate staffing, burnout and fatigue resulting from staffing shortages, and unhealthy practice environments that fail to support nurses' autonomy and participation in decision-making have been identified as factors that predispose individuals to make mistakes that can result in deleterious patient outcomes (Clarke & Aiken, 2006). Although the role of human fallibility in the causation of errors cannot be avoided, governing structures and operating systems can be designed to support safe and effective nursing practice and, in so doing, minimize the risk of preventable errors and adverse events (Page, 2004; Nolan, 2000; Reason, Carthey, & de Leval, 2001).

Yet, most hospitals have been slow to recognize the implications of governing structures and operating systems that comprise the broader organizational context for the quality of nursing practice and, ultimately, patient safety (Kohn et al., 2000, 2004). Consequently, little attention has been given to the ways in which the broader organizational context influences bedside nursing practice. It is possible that the inability to consistently reduce potentially preventable adverse events and errors during hospitalization can be traced, at least partially, to a failure to align hospital governing structures and operating systems in ways that enhance higher quality and safer nursing practice (Liang, 2002; Pearson, 2005). In an international study conducted among

hospitals in five countries, for example, Aiken and colleagues (2001) found that hospitals with higher rates of medication errors and avoidable adverse events were more likely to use work processes that were inadequate to support quality nursing practice and were less able to effectively manage their nursing workforce. Based on these findings, it can be argued that, when aligned with key elements of nurses' work, the broader organizational context, including the governing structures and myriad operating systems that are relevant to nurses' control over their work, may contribute to greater organizational effectiveness and better safety-related outcomes.

### **Autonomy or Control over Nursing Practice (CONP)**

Initial conceptions within the industrial/organizational (I/O) psychology and management literatures described autonomy as employee freedom, independence and discretion in the scheduling of work and determining the methods used in carrying it out (Hackman & Oldham, 1975; Sims, Szilagyi, & Keller, 1976). Often used interchangeably with autonomy in the nursing literature (Kramer et al., 2009; Weston, 2008), control over nursing practice (CONP) incorporates dimensions of both nurses' practice (i.e., the *content* of nurses' work) and the environment (i.e., the *context*) within which nurses work (Gerber, Murdaugh, Verran, & Milton, 1990; Kovner, Brewer, Wu, Cheng, & Suzuki, 2006; Laschinger & Havens, 1996). The requisite combination of both is recognized as essential for the development of professional nursing practice (McClure, Poulin, Sovie, & Wandelt, 2002).

Kramer, Maguire, and Schmalenberg (2006) described three specific dimensions of autonomy: (a) *work autonomy* which provides staff the discretion to identify performance criterion, choose appropriate procedures, and order, pace, or schedule work-



related tasks, (b) *clinical autonomy* which describes the independent and interdependent freedom to make decisions that benefit patients, and (c) *CONP autonomy* which describes “the regulation, determination, and policy development of nursing practice and the practice environment for nursing by nurses”, that is, how nursing practice is enacted in a specific clinical setting. (p. 281) Although the former description of work autonomy is not specific to nurses’ work it is commensurate with conceptual definitions in several interdisciplinary literatures (Hackman & Oldham, 1975; Breugh, 1985; Humphrey, Nahrgang, & Morgeson, 2007; Weston, 2008). The latter two descriptions of autonomy purportedly are specific to nurses’ work, however, clinical aspects of decision-making autonomy and control over nursing practice autonomy remain conceptually ambiguous (Kramer & Schmalenberg, 2003a, 2003b; Steward, Stansfield, & Tapp, 2004; Weston, 2008).

For example, the notion of autonomy was refined further to describe the discretion that staff is *allowed* to exercise over work scheduling, methods, criterion, and decision-making within an organization (Morgeson & Humphrey, 2006), thereby significantly limiting the freedom in how work is done. Further, task interdependence amongst workers enables the coordination between phases and the completion of work. Interdependence differentiates the more socially interactive characteristic of shared work that is typical of nurses’ work from less frequent independent work; and distinguishes it from work autonomy (Breugh, 1985; Kiggundu, 1983). Hence, clinical nursing autonomy is better described as professional decision-making behaviors about how nurses’ work is performed within interdependent practice boundaries (Porter-O’Grady, 2001; Weston, 2008). As such, efforts to clarify the conceptions of autonomy and control

may benefit from further examination of work design (Parker & Wall, 1998, 2001), the environmental, social, and motivational design features that are inherent in nurses' work (Oldham & Hackman, 1981; Humphrey et al., 2007), and the structural influence of organization on work processes, performance, and outcomes (Klein & Kozlowski, 2000; Pugh, Hickson, Hining, & Turner, 1969).

### **Control**

The Demands-Control Model developed by Karasek (1979) defines control as *both* decision latitude and skill discretion at work. Morgeson & Humphrey (2006) equate decision latitude with decision-making authority and decision-making autonomy. Hence, to avoid further conceptual ambiguity between control and autonomy, decision-making autonomy will be referred to as decision latitude from this point forward in this discussion.

Skill or intellectual discretion is a cognitive feature of work that describes the capability of staff to determine what skills to use and to develop. Skill discretion increases when work complexity can not be structured by formalizing programmed instructions and necessitates specific knowledge requirements such as the work of professionals (Scott, 2003). Skill discretion along with decision latitude, information-processing, and problem-solving are recognized as motivational work characteristics in the industrial/ organizational psychology, management, nursing, and organizational behavior literatures (Breugh, 1985; Hackman & Oldham, 1975; Humphrey et al., 2007; Richards, 2000; Tonges, Rothstein, & Carter, 1998). Work characteristics purportedly foster the emergence of critical psychological states that create the intrinsic motivation necessary for performance and the achievement of desired outcomes.

Hence, skill discretion may describe the knowledge that is required for specific problem-solving and information-processing activities that are related to both the clinical (content) and environmental (context) dimensions of professional nursing practice. On the other hand, control over nursing practice may best be described as staff nurse perceptions of skill discretion for problem-solving and information-processing characteristics of work plus decision latitude (i.e., decision-making autonomy) that is permitted over both clinical and environmental dimensions of nursing practice.

Further, two distinguishing attributes purportedly differentiate autonomy from control over nursing practice (Kramer & Schmalenberg, 2008). First, CONP is described as a group-level phenomenon that involves actions taken by the nursing workgroup in response to issues that affect nurses, nursing, and patient care. Second, CONP represents a process that is linked to a consciously and deliberately constructed organizational structure (Kramer & Schmalenberg, 2003a, 2008). As such, the level of staff nurse decisional involvement permitted by the governing structures of organization and the coordinating systems for patient care delivery determine the decision latitude that is delegated to staff nurses and, thus, qualifies as a motivational task characteristic capable of influencing individual and group attitudes as well as performance. In other words, the scope of organizational bureaucracy such as centralized or decentralized governing structures determines the levels of control that nurses can exercise over both the content (practice) and context (work environment) dimensions of professional nursing practice. Hence, decision latitude may explain both the content and context dimensions of control over professional nursing practice (Kennerly, 2000; Porter-O'Grady, 2001).

Extant descriptions of autonomy and control (over nursing practice) differ conceptually within the nursing and between the nursing and organizational literatures. The absence of consensus amongst nurse researchers related to the conception of control over nursing practice (Aiken & Patrician, 2000; Clifford & Horvath, 1990; Kramer & Schmalenberg, 2003, 2006; Weston, 2008) identifies a primary source for the conception's ambiguity especially when attempting to link antecedent or outcome variables to CONP. Such conceptual ambiguity also has impeded knowledge development that builds on the interdisciplinary research efforts of investigators across the disciplines of nursing, industrial/organizational psychology, management and organizational behavior. Hence, decision latitude, a motivational characteristic of nurses' work is one of two attributes essential for control over nursing practice.

### **Decisional Involvement**

Attempts to successfully redesign nurses' work may benefit from conceptual clarification of the notion of control over nursing practice. The purpose of this study is to examine the relationship between control over nursing practice and the level of staff nurse involvement in decisions that influence critical dimensions of nurses' work, as a measure of structural decision latitude within existing bureaucratic and interdisciplinary practice boundaries. Staff nurse perceptions of actual decisional involvement represent the distribution of authority related to professional practice issues for both content and context (i.e., the clinical and environmental) dimensions of nurses' work (Havens & Vasey, 2003).

According to Havens and Vasey (2003, 2005), staff nurse decisional involvement encompasses six dimensions of the practice environment and work of nurses: (a) unit

staffing and scheduling, (b) quality of professional practice, (c) clinical liaison activities, (d) unit governance and leadership, (e) quality of support staff practice, and (f) professional recruitment. Nurses' involvement in decision making has been linked to nurses' professional behaviors such as patient assignments and interdisciplinary collaboration (Anthony, 1999; Hung, Rundall, Cohen, Talia, & Crabtree, 2006; Orsburn & Moran, 2000;), patterns of participation in decision making (Alutto & Vrendenbrugh, 1974; Blegen et al., 1993; Lawler, Mohrman, & Ledford, 1998; Shapiro, 2000), and organizational outcomes such as patient care quality and safety (Meirovich, Brender-Ilian, & Meirovich, 2007; Norrish & Rundall, 2001). However, nurses both report and desire greater levels of decision involvement in areas that focus on the content (clinical dimension) of nursing practice rather than the context (environmental aspects) of nursing practice (Anthony, 1999; Blegen et al., 1993; Mrayyan, 2005; Varjus, Suominen, & Leino-Kilpi, 2003).

Further, nurses working in different settings may not desire or require the same level of decisional involvement in all dimensions of nursing practice. Critical care nurses may desire less decisional involvement related to the quality of support staff practice as nurse-patient staffing levels often are significantly lower (1:2) than staffing levels in other work settings. On the other hand, participation in the quality of support staff practice may be considerably more important to nurses when staffing levels are significantly higher (1:4-8) and nurses depend on non-licensed assistive personnel for particular patient care functions. The findings from several studies suggest that nurses desired greater participation in decision-making, hence, control over design of the work area (context), the quality of support staff practice (context), and the quality of

professional staff practice (content), but desired no involvement in areas like processing orders for lab tests and procedures (Alutto & Vrendenburgh, 1979; Blegan et al., 1993).

### **Work Design**

Although efforts to align the broader organizational context with the work of nurses has been linked to lower hospital mortality rates (Knaus, Draper, Wagner, & Zimmerman, 1986) and higher quality nurse-physician communication (Estabrooks, Midodzi, Cummings, Ricker, & Giovannetti, 2005; Mitchell, Armstrong, Simpson, & Lentz, 1989;), reports by the Institute of Medicine (IOM) indicate that the nursing work environment continues to be seen as a threat to the safety of hospitalized patients (Kohn et al, 2000; Page, 2004). Such evidence suggests the need to better understand approaches that can be used to successfully align the organizational context of hospitals with the work of nurses so that a healthy work environment that is conducive to patient safety and nurse satisfaction can be created.

Such approaches likely benefit from the effective interplay of three elements: (a) environmental structures and processes within the organization, (b) attitudes and perceptions of frontline providers, and (c) safety-related behaviors of health care providers (Cooper, 2000; Page, 2004). While patient safety focuses on avoidable adverse events associated with the processes of care, organizational safety targets the role of the organization and systems in preventing accidents. High-hazard industries typically focus on both as a way to sustain performance reliability and improve safety and quality (Gaba, 2000; Shapiro, 2000). The investigation of nurses' decisional involvement provides a measure of varying degrees of bureaucratic control anchored between centralized and decentralized decision making. A greater understanding of the existing bureaucratic and

interdisciplinary constraints governing both the content (clinical) and context (practice environment) of nurses' work may provide a better understanding of hospitals' failure to align the wider organizational context with the work of nurses. Governing structures may limit staff nurses' level of desired involvement within critical dimensions of nurses' work. For example, organizational constraints are inversely associated with staff nurse job performance and job satisfaction (Kovner, et al., 2006; Spector & Jex, 1998).

Inadequate organizational support for patient care quality in the practice environment of nurses may stifle nurses' work engagement, intrinsic motivation, and sense of psychological ownership of their practice, resulting in higher levels of emotional exhaustion (Grant, 2007; Leiter & Laschinger, 2006). As a consequence, staff nurses' safety-related behaviors may be adversely affected. Further, inadequate decision latitude related to contextual constraints within the practice environment of nurses may also explain the lower levels of control over the context dimension of nurses' work. A greater understanding of staff nurse perceptions of actual decisional control over patient care quality mediated by emotional exhaustion may provide new insight to improve the practice environment of nurses and care environment of patients.

### **Conclusion**

The purpose of this study is to evaluate the design of nurses' work – the examination of relationships among staff nurses' control over both the content and context of professional nursing practice and staff nurse self-reports of patient care quality and job satisfaction. The role of emotional exhaustion which has been described as a component of burnout also will be explored. Greater understanding of staff nurses' decisional involvement and its implications for patient and nurse outcomes is an

important step in identifying the organizational structures and work processes that are effective in improving patient care quality and job satisfaction within the care environment of patients and the practice environment of nurses.

Chapter II integrates the conceptual framework of four prominent work design strategies from the business and organizational literatures. Emphasis is placed on characteristics of nurses' work with nurses as knowledge workers characterized by cognitively demanding activities such as skill discretion, information-processing, and problem-solving that is dependent on a specialized body of knowledge such as nursing knowledge. The influence of structural controls is examined along with how characteristics of nurses' work foster critical psychological states that cultivate desired performance and subjective outcomes. The investigator's Relational Resource Distribution Model (Yurek, 2008) is introduced as a novel approach to evaluate nurses' work in hospitals, examine the effects of work characteristics on motivation and performance behaviors capable of creating safer and healthier practice environments for nurses and care environments for patients. Hence, Chapter II describes the development of a research model to explore the influence of CONP on staff nurses' reports of patient care quality and job satisfaction. Decision latitude is conceptualized as a motivational work characteristic and operationalized as the level of actual decisional involvement for both the content and context of nurses' work as reported by staff nurses. The CONP-subjective performance relationship is further explored with emotional exhaustion as a potential mediator.

A review of the nursing literature is presented in Chapter III and integrated with the business and organizational literature that will focus on the conceptualization and



dimensionality of control over nursing practice (CONP), the influence of structural configuration of the organization on staff nurses' CONP, and the influence of conceptual ambiguity between staff nurse decision latitude and CONP on nurses' work and organizational outcomes. The findings and discussion are presented in the context of work design theories in an effort to reduce the conceptual ambiguity associated with the notions of control and autonomy in the nursing literature and the design of nurses' work.

The methods section will comprise separate and distinct analyses in two consecutive chapters (Chapters IV and V). The first analysis begins with the survey of a panel of nurse experts to determine whether the proposed construct operationalized with the Decisional Involvement Scale (DIS) can be supported as a measure to explain CONP representing both the content and context dimensions of professional nursing practice. The variance / covariance matrices of four different factor structures (monolithic, first-order, and 2 different second-order structures) are evaluated to determine fit of the optimal model to the data. In the second analysis (Chapter V), a multilevel (hierarchical) model is used to determine the effects of CONP as a group-level construct with both content and context dimensions on job satisfaction and patient care quality mediated by emotional exhaustion. The hierarchical model accounts for correlated error terms expected amongst clusters of nurses nested within work units. The final chapter provides a discussion of the study findings and implications for future research.

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## **CHAPTER 2**

### **THEORETICAL PERSPECTIVES ON WORK DESIGN**

This chapter begins with an historical overview of the evolution of work design based on a review of the organizational literature. This overview will serve as an introduction for the discussion of four theoretical perspectives that are recognized as dominant paradigms for understanding work design in organizations: (a) the Job Characteristics Model (JCM) by Hackman and Oldham (1975), (b) the Demands-Control Model (DCM) by Karasek (1979), (c) the Job Demands-Resources Model (JD-RM) by Demerouti, Bakker, Nachreiner, and Schaufeli (2001), and (d) the Job Impact Framework (JIF) by Grant (2007). Based on an integration of these perspectives, the investigator-developed Relational Resource Distribution Model (RRDM) is presented and used as the overarching theoretical framework for this study. Relevance of the RRDM for investigating relationships among control over nursing practice and nurses' job and professional satisfaction as mediated by emotional exhaustion will be discussed.

#### **Job Design: The Early Years**

Work design is based on the fundamental assumption that successful attainment of organizational goals depends on optimal alignment of the structural dimensions of the work environment with characteristics of the tasks that are performed to achieve those goals (Morgeson & Humphrey, 2006; Parker & Wall, 2001). Interest in work design and its implications for organizational performance began when work moved from the home where individual family members served as the labor force to factories where work was

completed by groups of employees functioning in collectives (Parker & Wall, 2001). Factory work not only introduced a social element that was absent when work was completed in the home but also led to the advent of division of labor as an effective and efficient approach to production. Adam Smith first introduced the idea of job simplification and the horizontal division of labor by arguing that complex jobs could be broken down into simpler tasks and performed more efficiently when assigned to individual workers who completed the same tasks repetitively. This idea led to a proliferation of job design initiatives in the early 1900s as the relationship between efficient task performance and optimal production became increasingly apparent. These initiatives were seen as especially beneficial because they reduced the skill needed to complete work tasks, thus permitting the use of a less skilled labor force and lowering production costs (Parker, Wall, & Cordery, 2001). As a result, work design strategies such as job simplification and horizontal deskilling gained popularity at the turn of the 20<sup>th</sup> century as viable and profitable approaches to the organization of work.

Beginning in 1903, Frederick Taylor extended the work of Adam Smith by conducting time and motion studies to identify the one best way to complete work tasks. Taylor advocated the use of scientific management principles to decompose tasks into discrete steps which then could be simplified, timed, and sequenced to achieve maximally efficient task completion both by individual workers and through the use of newly crafted tools and production machinery (Parker et al., 2001). Hence, the pace of work could be controlled by management, task completion could be standardized, and worker compensation could be determined by output productivity using measures like the number of units processed in a given time interval. In addition, the use of Taylor's

management principles shifted decision-making authority to management, thus creating a vertical chain of command which severely limited staff discretion in work-related decision-making. One of the many well known and successful applications of Taylor's approach to work design occurred around 1912 when the Ford Motor Company, in conjunction with the use of the first conveyor belt-based assembly line, implemented the principles of scientific management to increase production and decrease cost of the Model T.

Despite the obvious benefits of scientific management, it also limited opportunities for social interaction among workers since work flow was automated while workers remained stationary (Scott, 2003). Further, tasks became repetitive and boring and, thus work was less interesting and psychologically engaging for workers. In fact, one of the major criticisms of scientific management as an approach to work design was that it had a dehumanizing effect on workers who were given little or no input into how work assignments were completed. Despite the absence of research addressing the effects of job simplification for workers, a Congressional Investigation held in 1912 concluded that scientific management was a useful organizational approach to work design (Kanigel, 1997). Although some types of work are better suited to job simplification than are others, scientific management was recognized throughout the United States and Europe as the "best" approach for the organization of work.

During the first half of the 20<sup>th</sup> century, mass production technologies along with the use of horizontal deskilling and vertical division of labor persisted as the primary approach to work design in the United States. Over time, however, it became apparent that these approaches not only contributed to inordinate worker fatigue and boredom but

also were linked to deleterious effects on employees' mental health (Parker & Wall, 2001; Scott, 2003). As a result, work was redesigned and duties were serialized by combining a range of tasks that required differing levels of work skills. Such changes, which later became known as horizontal job enrichment, were expected to reverse the negative consequences of job simplification for workers.

Despite numerous studies to investigate horizontal job enrichment as a way to reduce the effects of job simplification for workers, limited success was achieved in linking job enrichment to employees' attitudinal or behavioral outcomes. Consequently, organizational theorists extended the investigation of relationships among work characteristics and employee attitudes and behaviors by introducing the notion of employee motivation. Herzberg, for example, developed the motivation-hygiene theory of motivation, arguing that some characteristics of the work environment are linked to employee satisfaction and, therefore, can be seen as motivators while other factors are linked to employee dissatisfaction and can be seen as necessary to prevent dissatisfaction but not sufficient for increasing employee satisfaction or motivation. Work characteristics identified by Herzberg as sources of dissatisfaction included, for example, work conditions, salary, and relationship with superiors and peers. In contrast, satisfiers or motivators included opportunities for achievement, recognition, responsibility, advancement, and growth (Parker & Wall, 2001; Scott, 2003).

Extending beyond the theoretical interest in isolated work motivators, Hackman and Oldham introduced the Job Characteristic Theory (JCT) in 1975. Unlike motivational theorists who conducted studies primarily in laboratory settings, Hackman and Oldham shifted their research to organizational settings and addressed

methodological limitations of previous research by developing a valid and reliable measure of job characteristics that are relevant to employee work-related attitudes and behaviors. Since its introduction in 1975, JCT has been a widely recognized theoretical perspective that has been frequently used to investigate work design in organizations. Building on the foundation provided by JCT, other work design theories have been introduced that provide different yet complementary perspectives about job characteristics and their implications for employee attitudes and behaviors. These theories include the Demands-Control Model (DCM) by Karasek (1979), the Job Demands-Resources Model (JD-RM) by Demerouti, Bakker, Nachreiner, and Schaufeli (2001), and the Job Impact Framework (JIF) by Grant (2007). In the following section, these four theories will be discussed as the foundational perspectives that contributed to the development of the Relational Resource Distribution Model (RRDM), an investigator-developed model that was used as the theoretical framework for this study.

Work design can be seen as an umbrella term that encompasses the introduction of new technologies to perform a job, modification of systems to support a job, and revision of processes that change how job tasks are completed. However, a far more deliberate and purposeful meaning of work design, limited to activities with the a priori intention of enhancing staff satisfaction, motivation, and performance, will be used in this discussion. As such, work design as represented in these theories will be discussed in terms of activities that are intended to promote positive affectivity in staff and encourage the use of a broad range of staff abilities (Hackman & Oldham, 1976).

### **Major Theoretical Perspectives on Work Design**

#### **Job Characteristics Model (JCM)**

JCM is a normative approach to job enrichment, a technique that enables maximum use of employees' skills and abilities, thereby enhancing responsibility, motivation, and satisfaction (Hackman & Oldham, 1975). The primary focus of JCM is the interaction of job characteristics and individual employee differences on organizational outcomes. Specifically, the major premise of JCM is that specific job characteristics function as motivators that result in employee attitudes and behaviors that contribute to the attainment of desired organizational goals (Hackman & Oldham, 1976). Drawing from Burns and Stalker (1961) who first described mechanistic and organic forms of organization, JCM focused specifically on the organic form as an ideal approach to organize work. In contrast to more structured mechanistic forms in which work is controlled through centralized decision-making and standardized work processes, the organic form emphasizes the organization as a network of people with differing capabilities who work together to coordinate task completion. In this less structured form of organization, work is controlled through decentralized decision-making, mutual adjustments in response to unpredictability in the task environment, and horizontal contact and communication with peers to coordinate work activities.

According to the JCM, five core job characteristics foster the emergence of critical psychological states that purportedly result in desired outcomes. These work characteristics are seen as employee motivators because they contribute to the emergence of psychological states that promote positive employee attitudes like intrinsic motivation and job satisfaction and behaviors like effectiveness and accountability in job performance. Three task characteristics are identified in this model: (a) *skill variety* or the number of activities that require different skills and talents to perform the work; (b)

*task identity* or the ability of the employee to recognize ownership of the entire task from start to finish; and (c) *task significance* or the degree to which an individual has a positive effect on the outcome resulting from task completion. These task characteristics foster a sense of *experienced meaningfulness*, a particular psychological state in which the task is recognized as beneficial and worthwhile; and *experienced responsibility* is the perception that an individual is personally accountable for the work. *Experienced responsibility*, in particular, is closely tied to *autonomy*, the fourth core job characteristic, which is described as the degree to which the job provides an employee with freedom and discretion in scheduling work and choosing the methods to accomplish the work. Finally, *feedback* is described as the degree to which an individual receives clear and direct information about the effectiveness of work performance. Feedback plays a role in the emergence of a third critical psychological state, *knowledge of result*, which is the degree to which effectiveness in the performance of one's job is associated with unambiguous results (Hackman & Oldham, 1975, 1976).

### **Demands-Control Model (DCM)**

The DCM (Karasek, 1979) extended beyond JCM by introducing job strain as a key factor in explaining employee attitudes and behaviors. Karasek (1979) argued that job demands or stressors like time pressure, physical workload, cognitive demands, and the physical work environment must be balanced with job control in terms of the authority that is delegated to staff to meet job demands. According to this theory, job control comprises both *decision latitude* or the ability to make decisions about work and *skill discretion* or the ability to develop and use skills that are appropriate to a given task assignment. Karasek's description of decision latitude is comparable to decision-making

autonomy as described in the JCM because it refers to the authority that is delegated to staff for making work-related decisions (Morgeson & Humphrey, 2006). Skill discretion is the ability to choose the skills that are used to complete job tasks. *Active* work environments in which both job demands and job control are high provide staff with the freedom to learn and apply the skills that are needed to respond to job stressors and, thus, achieve organizational performance goals. In contrast, a highly stressful work environment in which staff is given limited control over performance-related decisions is more likely to result in job strain. The basic premise of DCM is that when the work environment is characterized by an imbalance between job demands and job control, job strain is created which can be detrimental to employees' health and well-being. In fact, researchers who have investigated the DCM have linked job strain to employee depression, anxiety, fatigue, and cardiovascular disease. Additionally, prolonged exposure to job strain stifles the motivation and cognitive abilities of staff and can result in job dissatisfaction, employee alienation, absenteeism, and turnover, all of which can contribute to an increase in unsafe work practices and work-related errors (Karasek & Theorell, 1990).

### **Job Demands-Resources Model (JD-RM)**

The JD-RM (Demerouti et al., 2001) added the notion of job resources to the explanation of the relationship between job characteristics and employee attitudes and behaviors. The major premise of JD-RM is that performance behaviors depend on the cognitive and contextual job demands that are placed on staff, the job resources that are available to staff for task completion, and the combined intervening influence of working conditions on the cognitive ability and energy of staff that are needed to achieve



performance goals (Hockey, 1997; Schaufeli & Bakker, 2004). According to JD-RM, employee well-being and performance are dependent on a work environment in which job demands and job resources are balanced (Demerouti et al., 2001; Hakanen, Bakker, & Schaufeli, 2006). Bakker, Demerouti, and Verbeke (2004) defined job demands as the contextual and cognitive characteristics of the work environment that can have negative implications for employee attitudes and behavior. Such demands can include, for example, physical workload, time pressure, and contact with clients who require increased information processing and problem solving, both of which increase the cognitive demands of the work. On the other hand, job resources are conceptualized as motivational characteristics of the work environment that support positive employee attitudes and behaviors. Job resources can include the significance of the task and opportunities for the development of relationships and meaningful social interaction in the work setting.

The JD-RM focuses specifically on the effects of working conditions on performance with an orientation towards positive psychology and affectivity by incorporating psychological *engagement in the work* as a valued employee attitude with implications for job performance. Engagement is comprised of two core components: (a) *vigor* or a high energy state coupled with mental resilience, motivation to devote effort to one's actions, and persistence despite challenges and (b) *dedication* characterized by pride, purpose, and enthusiasm. The major premise of JD-RM is that job resources enhance employee engagement in the work, with subsequent implications for effective job performance. In contrast, excessive job demands contribute to *emotional exhaustion* as a component of burnout, meaning that employees feel that they are emotionally

overextended and exhausted by their work (Maslach, Jackson, & Leiter, 1996).

Similarly, the absence of adequate job resources contribute to the depersonalization or *cynicism* component of burnout, meaning that employees experience themselves as distant from others (Bakker et al., 2004; Maslach, Schaufeli, & Leiter, 2001).

Consequently, psychological engagement in the work can be seen as the positive antipode to burnout, with emotional exhaustion and cynicism as polar opposites of vigor and dedication (Bakker et al., 2004; Maslach et al., 1996; Maslach et al., 2001).

Findings from studies using the DCM suggest that both job demands and job resources make unique contributions to the explanation of variance in the emotional exhaustion and cynicism components of burnout (Demerouti et al., 2001). Additionally, job resources have been found to consistently predict staff engagement while job demands consistently predict job strain (Bakker et al., 2004; Hakanen et al., 2006)). Additionally, job demands and job resources have been shown to initiate distinct psychological processes that affect differing organizational performance outcomes in terms of required and expected in-role behaviors and discretionary extra-role behaviors that are known to improve organizational effectiveness.

### **Job Impact Framework (JIF)**

The JIF introduced socio-structural job design elements, described as the relational architecture, to argue that structural properties of work shape behaviors through interpersonal interactions that enable employees to connect the impact of their actions with the well-being of others (Grant, 2007). The relational architecture of the JIF comprises two major components: impact on beneficiaries and contact with beneficiaries. *Impact on beneficiaries* refers to the magnitude, scope, and frequency of employee

actions that affect the lives and well-being of those who are beneficiaries of the action and *contact with beneficiaries* refers to the opportunities that are provided by the job to interact directly with those who benefit from one's work (Grant, 2007). Relational architecture emphasizes how the structural and social design of the work and the work environments motivate staff to have a positive influence on the lives and well-being of beneficiaries, described by Grant as *staff motivation to make a prosocial difference*.

According to the JIF, two novel psychological states result from a job's relational architecture in which staff are motivated to make a prosocial difference: (a) *perceived impact on beneficiaries* or "an awareness of the effect of one's actions on others," and (b) *affective commitment to beneficiaries*, meaning an "emotional concern for and dedication to those individuals and groups who benefit from one's work" (Grant, 2007, pp. 399 & 401). Hence, motivation to make a prosocial difference emerges from the perception that outcomes depend on the actions of the employee and that the outcomes resulting from those actions are valued. The behavioral consequence of staff motivation to make a prosocial difference purportedly influences employee work efforts, determination to achieve work goals (persistence), and the willingness to engage in voluntary behaviors that go above and beyond regular job duties (in-role behaviors) with helping behaviors (extra-role behaviors). Effort, persistence, and helping behaviors facilitate the development of an identity in which staff sees themselves as competent, self determined, and self worthy.

### **Integration of Theoretical Perspectives of Work Design**

In this section, these different yet complementary theoretical perspectives will be discussed as the foundation for the RRDM. Specifically, the link between motivational

work characteristics and the influence of operant mechanisms on desired outcomes as described in each of these theories will be reviewed and integrated to explain contemporary work design and its implications for employee attitudes and behaviors.

### **Operant Mechanism**

Motivation is the operant mechanism for these four job design models. According to motivation theorists, individuals are more apt to engage in particular behaviors when the expected outcome is valued either personally (e.g., intrinsic motivation) or materially (e.g., extrinsic motivation). Outcomes are expected to satisfy individual physiological or psychological needs and, when satisfied, provide the incentive to repeat the same behaviors. Therefore, structuring working conditions to align employee satisfaction with organizational goal achievement encourages effort, persistence, and goal attainment (Grant, 2007; Parker & Wall, 2001). As such, increased employee effort and successful attainment of organizational goals are linked to the alignment of the broader organizational context (job resources) with characteristics of the work itself (job demands). In the absence of alignment, employee effort and job performance are less likely to be satisfying, thus diminishing the successful attainment of organizational goals. Although these theories are similar in their conceptualization of employee motivation as the operant mechanism in explaining the job characteristics-employee performance relationship, each suggests different perspectives of the job characteristics that function as motivators.

### **Job Characteristics.**

Contemporary work design theory integrates the motivational, cognitive, social, and contextual dimensions of the job as specific features of work design (Demerouti et

al., 2001; Grant, 2007; Humphrey, Nahrgang, & Morgeson, 2007). However, each of the work design models described in this chapter employ a unique perspective by linking different job characteristics with desired outcomes. Hence, the use of a single model to examine the characteristics of a particular job may be inadequate in terms of addressing important features that can contribute to meaningful improvement in the design of work.

JCM provides a broad perspective of work design by incorporating job characteristics that predict affective and behavioral outcomes, but it is limited in terms of predicting effective job performance (Humphrey et al., 2007). In contrast, the DCM emphasizes a narrow set of job characteristics which limits its predictive power in explaining job performance. Further, only one motivational job characteristic (specifically, decision-making autonomy or decision latitude) and one cognitive characteristic (skill variety) are used to represent job control in this theory with all other contextual job characteristics defined as job demands. The interaction between job demands and job control is used to predict work-related job strain, which then mediates the relationship between demands-control and employee attitudes and behaviors.

Similarly, the JD-RM incorporates many of the same job characteristics that are identified in the DCM but categorizes them according to their influence on staff behaviors and performance. For example, job demands are seen as either contextual or cognitive characteristics that can result in an energetic-activation response resulting in employee vigor and dedication or an energy depletion response in which employees experience emotional exhaustion and cynicism. These responses, in turn, predict the extent to which employees are likely to engage in only in-role behaviors or expand their work performance to include the voluntary use of extra-role behaviors. On the other

hand, job resources depend on extrinsic sources such as decision latitude which is delegated to staff through the way work is structured by the organization as well as intrinsic sources such as individual self-efficacy which contributes to a cognitive-involvement response that fosters staff engagement and the use of extra-role behaviors that are indicative of positive organizational citizenship.

Lastly, the JIF emphasizes task significance in terms of the relational aspects of work and its implications for employee effort, persistence, and use of helping behaviors. For this reason, JIF offers a unique perspective that is not addressed in the other three models in which job characteristics, seen as beneficial to an individual employee, are identified as motivators of effective job performance. Rather, JIF suggests that employees are motivated not only by the desire to benefit themselves but by the desire to benefit others. Specifically, emotional connections to others motivate the employee to have a positive impact on beneficiaries. This, in turn, leads to increased effort and persistence in achieving desired outcomes. In other words, employees who are aware of the impact of their actions on beneficiaries tend to be motivated to work harder and longer in achieving performance goals. As such, this theory is especially relevant to service organizations where the work is emotionally demanding, as is the case with health care providers.

### **Cognitive-energetic processes.**

The cognitive-energetic processes described in these theories examine demanding aspects of work such as the contextual and cognitive job characteristics that require an unusually high work effort. In the DCM and JD-RM models, in particular, effort increases to meet job demands, but such effort exacts a personal cost for the employee in

terms of fatigue, irritability, and attentional difficulties that may lead to emotional exhaustion and cynicism. In particular, when job resources like decision latitude, leadership support, and feedback are insufficient to meet job demands, employees are likely to become less engaged in their work and experience greater emotional exhaustion and cynicism (Maslach et al., 1996; Schaufeli & Bakker, 2004). Because employees depend on adequate resources to meet job demands, they, in fact, may adopt withdrawal behaviors by reducing their psychological involvement in the work and distancing themselves emotionally from beneficiaries (cynicism). In contrast, when resources are matched with job demands, employees are more likely to be personally engaged in and dedicated to their work, resulting in a willingness to use voluntary behaviors that can have important implications for effective job performance.

Hockey's (1997) cognitive-energetic framework provides insight into the theoretical premises of DCM and JD-RM, in particular. Hockey argues that maintenance of performance efficiency under demanding work conditions depends on whether a strain coping or a passive coping mode of response is activated. These two response modes are anchored by exhaustion-vigor and dedication-cynicism. The strain-coping response mode is consistent with vigor and dedication while the passive coping response mode is characterized by exhaustion and cynicism. Exhaustion and cynicism are seen to diminish employee performance by reducing the speed and level of accuracy in work activities. Work environments that support decision latitude, competence (skill discretion), and relatedness (performance feedback and social interactions) foster a strain-coping response mode that enhances employee well-being and increases intrinsic motivation (Schaufeli & Bakker, 2004). Work environments with such structural resources foster a willingness

among employees to dedicate their efforts and abilities towards task completion and persistently use positive work behaviors to achieve performance goals. Therefore, understanding how job demands and job resources differentially affect staff motivation, identification with the work, and outcomes may improve our ability to effectively design the work of nurses' in ways that contribute to positive work attitudes and behaviors and, ultimately, improved outcomes for nurses and their patients.

### **Job Control.**

Another unifying characteristic of these work design models is the role played by work design in terms of the structural dimensions of the work environment and the achievement of desired outcomes. Although each of these theories links structural control mechanisms such as centralization with desired outcomes and argues for the cultivation of psychological states that motivate staff to act and behave in a particular way, the structural dimensions of the work environment in terms of job control are conceptualized differently in each of these models. For example, decision-making autonomy is described as a motivational work characteristic in the JCM, a job resource in the JD-RM, decision latitude or a component of control in DCM, and decision-making authority as it relates to beneficiaries in the JIF.

Four dimensions of work autonomy have been described in the organizational literature: decision-making autonomy, scheduling autonomy, methods autonomy, and performance criterion autonomy (Breugh, 1985). For, example, the degree of discretion delegated to staff for performance-related activities describes *decision-making autonomy or decision latitude*, the extent workers control the sequencing, timing and pacing of work describes *scheduling autonomy*; the degree of discretion individuals exercise over



choice of methods and procedures used in accomplishing work describes *methods autonomy*; and the degree of discretion staff have in choosing performance and quality indicators describes *criterion autonomy* (Breugh, 1985; Humphrey et al., 2007; Karasek, 1979). Although autonomy has long been identified as a component of job control, these four work design theories define autonomy primarily in terms of the amount of discretion that is delegated to staff rather than the freedom or independence to choose the methods by which tasks are completed, the pace of one's work, or criteria that are used to judge performance effectiveness. In the context of these work design theories, therefore, autonomy is a structural attribute of the work environment rather than an attribute of the individual employee.

Autonomy in the original JCM confounded scheduling autonomy, methods autonomy, and criterion autonomy, while ignoring decision-making autonomy (Breugh, 1985; Morgeson & Humphrey, 2006). In the DCM, decision-making autonomy was conceptualized as decision latitude and a function of the structural dimensions of the organization such as centralization. Similarly, control in the original DCM confounded decision latitude, skill discretion, and job complexity (Karasek, 1979; Wall, Jackson, Malarkey, & Parker, 1996). However, there is evidence of similarity in the conceptualization of decision latitude in the DCM and autonomy in the JCM. In addition, skill discretion is conceptualized in both the DCM and JCM as the cognitive process of selecting the appropriate set of skills that are needed for a particular task. In the JD-RM, decision-making autonomy is seen as a job resource that facilitates dedication and helping behaviors (extra-role behaviors) and cultivates vigor in terms of increased effort and persistence (in-role behaviors) in achieving performance goals. However, poorly

engineered jobs with insufficient resources may impede staff vigor and dedication, resulting in emotional exhaustion and cynicism which can have implications for work-related errors. When properly aligned, job resources such as decision-making autonomy and programmed instructions that are formalized in checklists, for example, can enhance goal attainment, reduce the psychological and physiological costs associated with job demands, stimulate personal growth and development, reduce emotional exhaustion and minimize cognitive failures (Demerouti et al., 2001; Schaufeli & Bakker, 2004; Van Der Linden, Keijsers, Eling, & Schaik, 2005). In the context of nurses' work, therefore, adequate job resources may contribute to safer work practices and inadequate job resources may suggest the need for improvements in work design.

Along with autonomy, the conception of control in these job design theories remains ambiguous. For example, when control is defined as decision latitude plus skill discretion, it can be seen as both a job demand and a job resource. The cognitive demands of a job related to skill discretion, problem-solving, and information-processing represent the intellectual requirements for selection of *what* abilities are appropriate to develop and use during task completion while work autonomy and decision latitude are job resources governed by organizational structures that control over *how* work is completed. Hence, control comprises two distinct dimensions of work that characteristically affect different outcomes. The cognitive demands of nurses' work are likely to be related to professional and occupational satisfaction such as patient care quality while job resources are more likely to be related to organizational satisfaction such as job satisfaction as described by Hinshaw, Smeltzer and Atwood (1987).

Distinctions like these may be very important in understanding how the design of nurses' work is associated with nurse-sensitive outcomes.

### **The Relational Resource Distribution Model (RRDM)**

In the final section of this chapter, the Relational Resource Distribution Model is introduced as the conceptual framework for this study. The Relational Resource Distribution Model (RRDM) is an investigator-developed model in which selected job characteristics that are relevant to the work of nurses are identified and relationships among these characteristics and employee attitudinal and behavioral outcomes are proposed (Yurek, 2008). The RRDM incorporates propositions from each of the work design models described in this chapter. For example, job demands and job resources are specified as antecedents to staff perceptions of emotional exhaustion, cynicism, perceived impact on beneficiaries, and affective commitment, each of which are thought to influence staff motivation to make a prosocial difference. The motivation to make a prosocial difference cultivates desired behaviors such as effort, persistence and helping behaviors which facilitate safer practice environments, staff identification with and ownership of the work, interception of potential adverse events, and competence in nursing practice. A diagram of the RRDM is provided in Figure 1.

The RRDM examines the relationships among job characteristics, psychological states, safety-related behaviors, and performance outcomes. The psychological processes that explain the states of activation (exhaustion or vigor) and involvement (cynicism or dedication) are based on Hockey's (1997) cognitive-energetic framework. The relational features of nurses' work are conceptualized as cognitive and contextual demands that determine what attitudes and behaviors have the greatest potential impact on

beneficiaries. Nurses may respond to the demands of their work using an activation process that can result in either vigor and dedication or emotional exhaustion and cynicism (Bakker et al., 2004; Hockey, 1997). The response that is adopted is largely dependent on the extent to which job resources matched job demands. Therefore, the relationship between job demands and nurses' attitudes and behaviors is moderated by the availability of resources that adequately matched job demands. For example, cognitive and contextual job demands such as staffing and scheduling demands, problem-solving, information-processing, and skill discretion, when matched with sufficient work autonomy and decision latitude determines what nursing actions can be enacted to have a positive effect on the well-being of patients. Therefore, job control, when seen as a job resource, can facilitate a cognitive-involvement response that may diminish the negative effects of job demands in terms of emotional exhaustion and cynicism (Demerouti et al., 2001). This response, then, contributes to greater dedication and commitment to the organization and greater job satisfaction. These attitudes also cultivate a willingness to engage in helping behaviors, which have the potential to improve patient care quality (Ryan & Frederick, 1997).

An emphasis on patient care quality and job satisfaction may influence the goals of the health care delivery system as it relates to the nursing workforce and the safety of patients. Job demands require sustained levels of physical and emotional effort. Over time, the need for substantial effort impedes the performance of in-role behaviors which constitute the performance requirements of the job as well as the use of extra-role behaviors which may also contribute to effective job performance. In fact, heavy job demands such as emotional demands, staffing and scheduling demands, and the physical

work environment have been linked to emotional exhaustion and cognitive failure. Similarly, a lack of appropriate motivational and social resources in the design of nurses' work may result in cynicism or the emotional distancing of one's self from the work. For example, the lack of adequate job resources has been associated with staff behaviors that contribute to missed or incomplete patient care. As such, inadequate job resources may have deleterious effects on patients with increased reports of adverse events (e.g., medication errors, nosocomial infections, patient falls with injuries, and patient and family complaints), staff nurse reports of diminished patient care quality, and increased job dissatisfaction.

### **Conclusions**

The work design theories discussed in this chapter provide important propositions about the relationships between competing dimensions of work (demands and resources) that can either support or diminish desired outcomes. Many of these competing dimensions have not been adequately examined in the nursing research literature. Similarly, staff motivation to make a prosocial difference, burnout, perceived impact on beneficiaries, and affective commitment has not been well addressed in studies of nurses' work environment. In fact, there has been limited research to examine the relationships among nurses' job characteristics from the perspective of job demands or job resources, performance, and the intervening influence of individual psychological states. It is important to distinguish between different job characteristics to better understand the effects of job demands and job resources for both nurse and patient outcomes. It is just as important to use measures that do not confound dimensions of work autonomy with dimensions of control or other motivational characteristics of nurses' work. Failure to

align the work of nurses with the wider organizational context may have implications for patient care quality and, thus, explain how the practice environment of nurses has become a threat to patient safety (Page, 2004). A better understanding of the job characteristic-staff motivation-performance relationships may improve our ability to create healthier work environments for nurses and safer care environments for patients.

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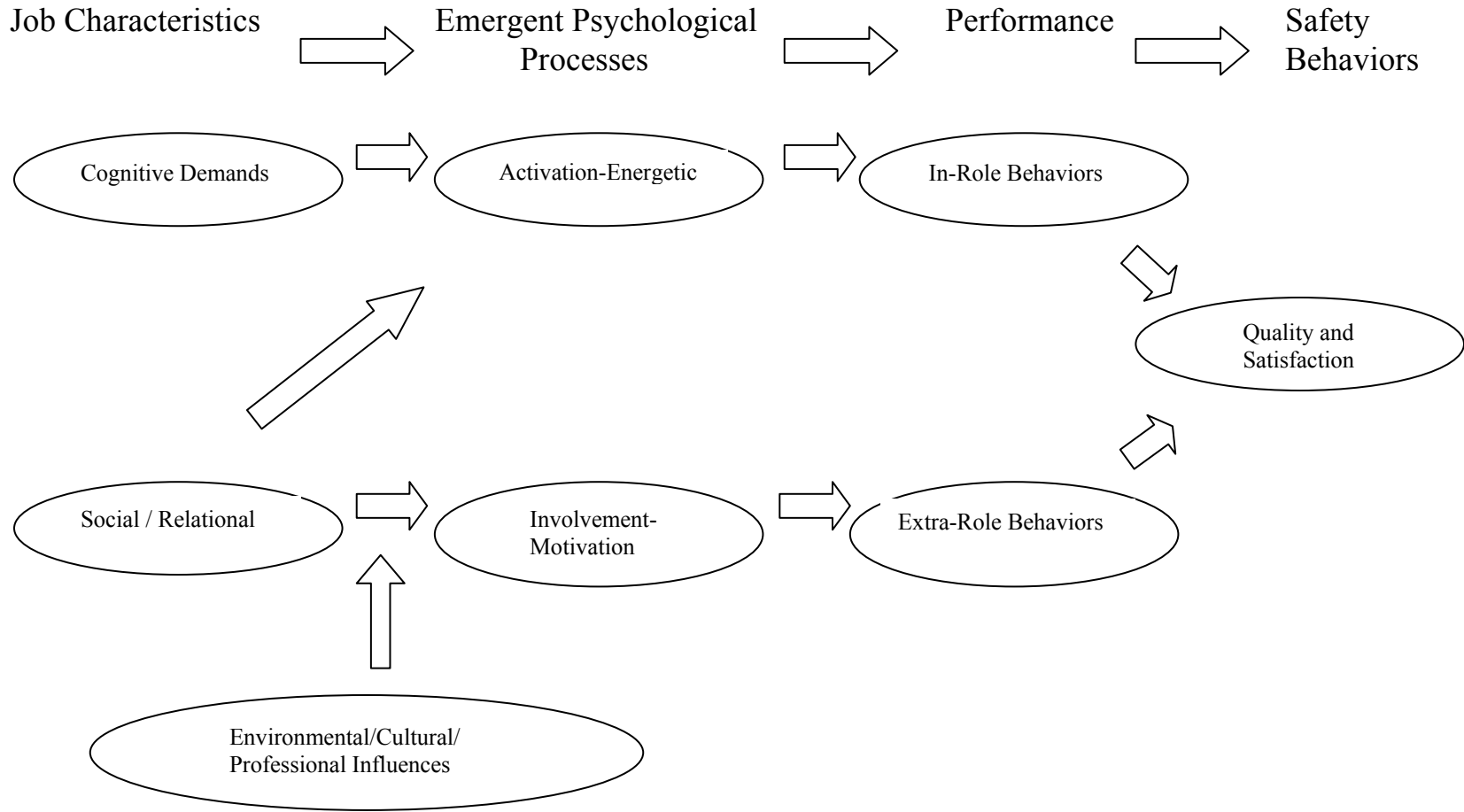
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Figure 1  
The Relational Resource Distribution Model



**CHAPTER 3**  
**AN INTEGRATIVE REVIEW OF THE LITERATURE ON**  
**CONTROL OVER NURSING PRACTICE**

The Institute of Medicine (IOM) identified the work environment of nurses (i.e., the organizational context within which professional nursing practice is situated) as a risk factor for error-related deaths among hospitalized patients (Kohn, Corrigan, & Donaldson, 2000; Page, 2004). In fact, there is growing evidence that the practice environment of nurses is inadequate to enhance patient outcomes and may have deleterious effects on staff satisfaction, patient care quality, and safety (Page, 2004). For example, recent strategies to redesign the work environment of nurses and manage the nursing workforce in the United States, Canada, United Kingdom, Germany, and Scotland have been linked to an increased number of medication errors and adverse events (Aiken, et al., 2001). Additional studies suggest that unacceptable staffing, burnout, fatigue, and poor practice environments are latent causes that create work conditions that are conducive to errors by nurses as well as other health care providers (Clarke & Aiken, 2006; Friese, Lake, Aiken, Silber, & Sochalski, 2008; Lake & Friese, 2006).

The organizational context in which health care is delivered changes rapidly (Aiken, Sochalski, & Lake, 1997) as do the structural attributes that influence the way nurses practice (Lake, 2002; Kramer & Schmalenberg, 2004). In fact, both the governing and coordinating systems that support nurses' work have undergone tremendous change

as hospitals (a) respond to public criticism about the quality and cost of health care (Sovie & Jawad, 2001), (b) increasingly rely on information and communication technologies (Parker, Wall, & Cordery, 2001), and (c) undergo organizational restructuring (Norrish & Rundall, 2001). Yet despite these changes, critical elements of nurses' work that contribute to the risk of errors and avoidable adverse events include the governing structures and coordinating systems that are intended to support the daily operations of patient care delivery (Page, 2004).

Two unintended consequences, in particular, have resulted from the frequency and scope of changes in the organizational context in which health care is delivered and the work redesign initiatives that have been introduced to address them. First, autonomy and control over nursing practice (CONP) continue to be poorly differentiated in most nursing practice settings. In fact, due to the conceptual ambiguity that has characterized the discussion of these concepts in the nursing literature, autonomy and CONP often are seen as different terms for the same concept (Cummings, Hayduk, & Estabrooks, 2006; Kramer et al., 2009; Weston, 2009). Second, many hospital work environments are poorly aligned with the demands of nurses' work. For this reason, these environments are often inadequate to support the goals of enhancing quality and safety in nursing practice and maximizing nurses' contribution to the attainment of positive patient outcomes (AHRQ, 2008; Kohn et al., 2000; Page, 2004). As such, there is a need for further research to guide the development and implementation of work designs that support the delivery of high quality and safe nursing care.

Work design has important implications for quality and safety in hospitals. Work designs in which the broader organizational context is appropriately aligned with the

work of nurses can create safer practice environments for patients, nurses, and nursing workgroups and also contribute to the attainment of desired organizational outcomes (Aiken, Clarke, Sloane, Lake, & Cheney, 2008, 2009; Humphrey, Nahrgang, & Morgeson, 2007; Kohn et al., 2000; Page, 2004; Parker & Wall, 2001). However, implementation of such work design initiatives will depend on clarification of the differences between autonomy and CONP so that structural dimensions of job control in hospitals can be best matched to characteristics of nurses' work.

In this chapter, findings from an integrative review of the literature will be discussed. The specific purpose of this literature review was to integrate the conceptualization and dimensionality of job control as described in the business and organizational literatures with control over nursing practice as it has been described in the nursing literature. Specifically, the conceptualization, dimensionality, and instrumentation of control over nursing practice (CONP) as an essential component of a professional practice environment will be examined along with the role of work design in creating environments that support staff nurses' control over their practice. As part of this discussion, sources of conceptual ambiguity between CONP and autonomy will be identified and discussed. Finally, the findings from studies to investigate dependent variables that are associated with control over nursing practice such as job satisfaction and patient care quality, as well as emotional exhaustion as a potential mediator will be discussed and a synthesis of these findings with recommendations for future research will be presented.

## **Methodology for Integrative Literature Review**

Studies addressing “control over nursing practice” were identified through a search of three electronic databases: (a) National Library of Medicine (MEDLINE), (b) Cumulative Index to Nursing and Allied Health Literature (CINAHL), and (c) Business Source Premier. The search terms used to identify appropriate references were: “control over nursing practice,” OR “control over work,” OR “practice control,” OR “content control,” OR “job control,” OR “decision control,” OR “decisional involvement,” OR “participative decision-making,” OR “decision-making autonomy,” OR “professional autonomy,” OR “clinical autonomy,” OR “organizational autonomy,” AND “scale,” but NOT “student autonomy,” NOT “physician autonomy,” and NOT “patient autonomy.

The search was limited to articles written in English and published in peer reviewed journals from January of 1983 through January of 2009. The search commenced with 1983 because that was the year that findings from the *original magnet hospital study* conducted by the American Academy of Nursing Task Force on Nursing Practice in Hospitals were published (McClure, Poulin, Sovie, & Wandelt, 1983). This study is recognized as one of the most influential reports on organizational features that facilitate professional nursing practice.

### **Study Selection Criteria**

References selected for this review were chosen according to the following criteria: (a) studies in which staff nurses working in general acute care hospitals were used as the sample (advanced practice nurses, clinical nurse specialists, nurse practitioners, school nurses, new graduates (0-12 months experience), community health nurses, case managers, and studies conducted in nursing homes, Veteran Administration

and Department of Defense facilities were excluded); and(b) studies in which CONP was measured using instruments or scales with documented evidence of reliability and validity.

The selection process is summarized in Figure 1. Based on the eligibility criteria, a total of 20 studies were identified for inclusion in this literature review. Additionally, the despondency method described by Cooper (1987) recommends that additional references on the subject of interest can be identified through a critical examination of reference lists from published books and articles that were located using the search terms (Cooper, 1987). Use of the despondency method led to the identification of four additional references. Therefore, based on the eligibility criteria and the search methods used, a total of 24 studies were identified for inclusion in this literature review and are depicted in Table 1.

### **Data Extraction**

A data collection tool was developed to systematically extract key elements from each of these studies. The following information was extracted: (a) first author and year of publication, (b) unit of analysis, (c) theoretical or conceptual framework, if identified, (d) conceptual definition of control over nursing practice, (e) instrument used to measure CONP, and (f) findings with respect to the variables that were included in this study such as job satisfaction, patient care quality, and emotional exhaustion and their linkages to CONP. A summary of the key elements extracted from the studies in this literature review are reported in the following sections. Tables 2 through 4 describe the instrumentation of control in 12 specific studies rather than the entire collection of 24 as discussed in the findings section.



**Unit of Analysis.** Job control is based on an interdependent process that is particularly critical for but not specific to individual knowledge workers who have specialized skills. Rather, the ability to assess, intervene, and deliver safe and effective patient care requires information-processing, problem-solving, specialization, and skill discretion that are coordinated through the way in which work is structured in the organization. For this reason, nurses, as knowledge workers, may have individual perceptions about control over their practice, even though CONP can be seen as a group level attribute because it is affected by the structural mechanisms that organizations implement to manage and coordinate work activities (Walls, 1992). There is consensus amongst most nurse researchers that CONP is a group level attribute (Gerber et al., 1990; Lake, 2002; Kramer & Schmalenberg, 2004). In fact, the known group technique has been used to support the content validity of three different measures of CONP by demonstrating that these instruments can discriminate between Magnet from non-magnet hospitals as well as between various types of magnet hospitals (Aiken, Havens, & Sloane, 2009; Aiken, Smith, & Lake, 1994; Laschinger, Almost, & Tuer-Hodes, 2003; Schmalenberg & Kramer, 2008). Hence, the effects of structure on CONP can be investigated at the individual, group, and organization units of analysis.

CONP was measured at both the individual and group levels of analysis in the studies included in this review. The instruments used in seven studies were developed to measure perceptions of job control at the individual level of analysis only and instruments designed to measure CONP at the group level were used in five studies. Instruments used to measure CONP and levels of analysis are summarized in Table 2. Although no single instrument was consistently used to measure CONP in these studies,

the CONP-Scale (CONP-S) (Gerber, Murdaugh, Verran, & Milton, 1990) has gained popularity for use at the individual unit of analysis (Weston, 2007) and the scale continues to undergo revision for use at the work unit level (Parsons, Murdaugh, Erickson, & Paper, 2007). For example, the CONP-S has been used in studies at both the individual (Walls, 1992) and workgroup units of analysis (Weston, 2006). Similarly, measurement at the group level has been identified as an option when using the Nurse Work Index-Revised (NWI-R) and Practice Environment Scale (PES) (Aiken & Patrician, 2000; Lake, 2002). Additionally, the Essentials of Magnetism-II (EOM II) has been used primarily to evaluate hospital-wide Magnet characteristics and attributes of healthy work environments (Schmalenberg & Kramer, 2008).

**Theoretical or Conceptual Frameworks.** Seven studies identified a theoretical or conceptual model that guided the research. In contrast, no framework was identified in the remaining five studies; a finding that may contribute to the explanation of the conceptual ambiguity that has been characteristic of the nursing literature on CONP. Three studies used conceptual models that are congruent with the work of nurses in hospitals. The organizational attribute/patient outcome model (OAPO) advanced by Aiken, Sochalski, & Lake (1997) was used in two studies (Aiken & Patrician, 2000; Lake, 2002) with Hess's model of governance used in one study (Hess, 1998). Frameworks from the business and organizational behavior literatures were used in four studies. Spector's (1986) empowerment framework was used in one study (Gerber et al., 1990) and Donabedian's (1966) structure-process-outcome model was used in another study (Kramer & Schmalenberg, 2004). In two studies reported by Laschinger et al. (1997, 2001), the Job Characteristic Model (JCM) developed by Hackman and Oldham

(1975, 1976) and Karasek's (1979) Demands-Control Model (DCM), an extension of JCM, were used. Table 2 depicts the conceptual frameworks reported in the references included in this literature review.

**Conceptual Definition of CONP.** Conceptual definitions used to measure CONP varied from instrument to instrument and study to study. The instruments used in the studies included in this literature review are summarized in Table 2. In two studies, CONP was measured using instruments derived from Hackman & Oldham's (1975) JCM model. Laschinger and colleagues (1997) measured CONP using the Job Diagnostic Questionnaire (JDQ) (Hackman & Oldham, 1975, 1976, 1980; Sims, Szilagyi, & Keller, 1976). In a study to test a model predicting staff nurse turnover intentions, Hinshaw, Smeltzer, and Atwood (1987) measured CONP using CONP-I developed by Horsley and Pelz (1976) which ultimately was revised to become the CONP-S (Gerber et al., 1990).

In general, the instruments used in these studies do not make a clear conceptual distinction between CONP and autonomy which can be described as the amount of freedom and independence that an individual exercises over work assignments (Hackman & Oldham, 1975). Additionally, these instruments were developed prior to publication of Breugh's (1985) work in which three types of work autonomy were described. Specifically, Breugh identified *scheduling autonomy* as the freedom to decide about the pace of one's work, *methods autonomy* or the freedom to choose the methods and procedures used to complete work tasks, and *criterion autonomy* or the freedom to select the indicators that are used to evaluate effective task performance. Hence, items from both the JDQ and the CONP-I, for example, confound job control with types of work autonomy as described by Breugh. It can be argued that the use of these instruments in

nursing research added to the conceptual confusion between autonomy and CONP (Schmalenberg & Kramer, 2004; Weston, 2008).

As with CONP, the conceptualization of work autonomy has been extended to reflect the degree to which a job *allows* the freedom, independence, and discretion to schedule work, choose work methods, or make decisions about the evaluation of task performance (Breugh, 1985; Morgeson & Humphrey, 2006). Therefore, contemporary conceptualizations of work autonomy provide an important distinction that was ignored in earlier conceptualizations by suggesting that work autonomy, like CONP, is a function of structural control mechanisms that determine the degree of discretion or authority that employees are allowed to exercise over their work.

Karasek (1979) described *job control* in terms of both *decision latitude* and *skill discretion*. Decision latitude is described as the amount of discretion that is delegated to staff to make work-related decisions (Karasek, 1979). Skill discretion refers to the cognitive processes through which workers develop and use the skills that are needed for effective task performance (Karasek, 1979; Karasek & Theorell, 1990). Knowledge characteristics such as skill discretion, problem-solving, and information-processing represent the cognitive processes through which employees solve unique problems related to a specific body of knowledge (e.g., nursing knowledge) and interpret information from various internal and external sources to fulfill work requirements (Humphrey et al., 2007). Job control was measured in one study conducted by Laschinger, Finegan, Shamian, and Almost (2001) using Karasek's Job Content Questionnaire, an instrument that conceptualizes decision latitude and skill discretion as separate yet complementary dimensions of job control. However, similar to the

conceptual confusion between CONP and autonomy, instruments developed to measure job control often confound decision latitude with skill discretion as well as other work-related knowledge characteristics (Wall, Jackson, & Malarkey, 1995; Wall et al., 1996).

Decision latitude as described by Karasek (1979) can be seen as conceptually equivalent to decision authority and decision-making autonomy as described in the JCM (Humphrey et al., 2007; Morgeson & Humphrey, 2006). Hence, the study by Blegen et al. (1993) to investigate staff nurses' preferences for decision making autonomy in the areas of care-giving and unit operations can be described as a study of decision latitude. Along with the JCQ, remaining instruments used to measure CONP do not adequately differentiate between decision latitude, skill discretion, job control, and other work characteristics. Table 3 depicts how instruments have confounded the measurement of job control with other concepts. For example, the CONP subscale of the EOM-II incorporates items that tap extrinsic rewards like "recognition from MDs, administration, and others" (Schmalenberg & Kramer, 2008, p. 9) and the Nurse Participation in Hospital Affairs subscale of the Practice Environment Scale incorporates items that tap intrinsic rewards like "career development/ clinical ladder opportunities" (Lake, 2002, p. 181). On the other hand, the Job Demands Questionnaire used by Laschinger et al. (1997) isolates work autonomy as a one-dimensional construct, the control subscale of the NWI-R developed by Aiken & Patrician (2000) measures control in terms of centralized decision-making as "present in the current job," and the CONP-I used by Hinshaw et al. (1987) was derived from the centralization measure developed by Hage and Aiken (1967). Although none of these measures confound decision-latitude with skill discretion, they do confuse control with autonomy. The remainder of the scales and

instruments used to evaluate control confuse decision latitude with several dimensions of work autonomy.

**CONP and Conceptual Dualism.** CONP typically has been measured as a one-dimensional construct. For this reason, empirical evidence for the presence of conceptually distinct dimensions of CONP is limited (Breugh, 1985; Wall et al., 1996; Humphrey et al., 2007). Yet, there has been growing recognition in recent years of an inherent *conceptual dualism* to CONP. Specifically, CONP can be seen in terms of two complementary yet different dimensions of control: control over the content of nursing practice and control over the context in which nurses' practice (Kramer & Schmalenberg, 2004; Laschinger & Havens, 1996). The *content* dimension of control can be described as the scope of practice-related decisions and actions that nurses are legally authorized to enact (Clifford & Horvath, 1990; Laschinger & Havens, 1996; Laschinger et al., 1997; Weston, 2009). In contrast, control over the *context* in which nurses' practice can be described as the extent to which nurses exercise control over unit, departmental, and organizational operational policies and governance structures (Clifford & Horvath, 1990; Gerber et al., 1990; Hess, 1998; Kramer & Schmalenberg, 2003b; Laschinger & Havens, 1996; Laschinger et al., 1997; Weston 2009). The conceptualization of CONP as a two-dimensional construct suggests that both dimensions are essential for professional nursing practice. In fact, it can be argued that absence of control over either of these dimensions diminishes nurses' control over professional nursing practice (McClure et al., 2002). For example, nurses may actively participate in unit-level operational decisions but lack decision latitude and skill discretion when caring for patients. In this example, control over the context in nurses' practice is present but control over the content of nursing

practice is lacking (Hess, 1998; Meirovich, Brender-Ilan, & Meirovich, 2007). In contrast, nurses can contribute to improve patient care quality and patient outcomes by working in collegial and collaborative relationships with physicians and other nurses when nursing control over the content of practice is recognized. At the same time, these same nurses may be practicing in a setting where decisions about unit operations are centralized and employee input is limited, thus restricting nurses' control over the context in which they practice.

In Table 2, the prevalence with which CONP has been measured by incorporating, implicitly or explicitly, both dimensions of content and context is shown. Laschinger et al. (1997) explicitly differentiated between control over the content and context of nursing practice by using different instruments to measure each. Specifically, control over content was operationalized using items from the revised version of the JDQ and control over context was operationalized using the Participative Management Work Unit Description Scale developed by Lashbrook (1981, 1982). In all other studies, however, CONP was measured using a single instrument or subscale that included items measuring both content and context dimensions. Further, no studies were found in the nursing literature in which the factorial validity of both the content and context dimensions of CONP has been investigated.

**Measurement of CONP.** A distinction was made between the NWI-R and the revised NWI in this review. The revised NWI incorporates measures of control in its organizational support subscale which preclude examination of the effects of control alone. Hence, it is not reported in this review. On the other hand, the NWI-R, developed and reported by Aiken and Patrician (2000), includes 57 items that incorporate a control

subscale that has been used consistently in the literature, thus permitting comparisons across studies. For this reason, the NWI-R was included in this review.

One-dimensional measures like the CONP-S have been developed that evaluate both the content and context dimensions of CONP (Gerber et al., 1990). Other scales like the EOM includes a subscale that is specific to CONP but include items that tap other concepts like centralization and extrinsic rewards, thus making it difficult to compare specific CONP findings across studies. Further, multi-dimensional measures like the PES-NWI, EOM, CONP-S, and DIS include multiple subscales that have been developed to evaluate the practice environment of nurses. Although many of these instruments incorporate subscales that may reflect CONP, most researchers report findings for the entire instrument rather than specific subscales. Hence, the effects of CONP on job satisfaction, for example, are commingled with the effects of other variables like autonomy, responsibility and influence of head nurses, access to information, competent peers, and the integration of research and practice. Finally, specific subscales like the Nurse Participation in Hospital Affairs Scale (Lake, 2000) have been used to measure CONP. Additionally, some researchers use the term organizational autonomy to describe the context dimension of CONP and professional autonomy to describe the content dimension of CONP. The use of such varied approaches to the measurement of CONP has added to the conceptual ambiguity between autonomy and CONP that can be found in the nursing literature (Clifford & Horvath, 1990; Kramer & Schmalenberg, & Maguire, 2009; Weston, 2008).

Twelve different instruments were used to measure CONP in these 24 studies. The instrument in its entirety was used in seven studies. These instruments, listed in



descending order by use in peer-reviewed publications were the CONP-S (Gerber et al., 1990), NWI-R (Aiken & Patrician, 2000), Preference for Decision Authority Questionnaire (PDAQ) (Anthony, 1999), Preference for Decision Making Authority Questionnaire (PDMAQ) (Blegen et al., 1993), Decision Involvement Scale (DIS) (Havens & Vasey, 2004), Index of Professional Nursing Governance (IPNG) (Hess, 1998), and the Participative Management Work Unit Description Scale (Lashbrook, 1981). In six studies, CONP was measured using one or more subscales from a single instrument. These subscales, listed in descending order according to frequency of use, include the *Control Over Practice Setting* subscale of the NWI-R, *Nurse Participation in Hospital Affairs* subscale from the NWI-Practice Environment Scale (Lake, 2002), the *Control Over Nursing Practice* subscale of the EOM (Kramer & Schmalenberg, 2004), the *Control* subscale of the CONP-I (Hinshaw et al., 1987), and the *Autonomy* subscale of the *Job Diagnostic Questionnaire* (Hackman & Oldham, 1975). Table 1 lists the instruments and subscales that were used in these studies.

***Reliability and validity.*** The psychometric properties of the instruments used to measure CONP in these studies are summarized in Table 4. Although a reliability estimate for the measure used by Blegen et al. (1993) was not reported, other instruments meet minimum research standards for internal consistency reliability, with reported coefficient alphas of .70 or above. However, construct validity for these instruments can be questioned because some measures confound CONP with various types of autonomy and other measure CONP as a one-dimensional construct. Assigning a label to a construct does not necessarily confirm its existence nor does it necessarily represent the hypothesized construct of interest to the investigator. As such, much of the research on

CONP has been vulnerable to reification fallacy which ultimately diminishes construct validity (Kline, 2005). Further, the use of measures that confound disparate dimensions of control such as decision-latitude and skill discretion or commingle measures of control with autonomy also have made it difficult to compare findings across studies or develop consistent support for the dimensionality of CONP and its implications for the practice environment as well as nurse, patient, and organizational outcomes (Breugh, 1985; Kramer & Schmalenberg, 2009; Wall et al., 1996; Weston, 2008).

***Dimensionality.*** Monolithic scales such as the CONP-I (Hinshaw et al., 1987) provide a composite score that may not discriminate among specific dimensions of CONP (DeVellis, 2003). Instruments that measure CONP as having a monolithic structure were used in two of the studies in this literature review. In seven studies, CONP was measured using a multi-dimensional scale, however, the distinction between control over content and context is not readily apparent in these measures. The CONP dimensions measured in the studies from this literature review are presented in Table 2.

### **Study Findings**

Although CONP was not mentioned directly in the original Magnet Hospital study, it was implicitly identified by describing the professional practice environment as one that is characterized by decentralized decision-making and staff nurse participation in hospital affairs (McClure et al., 1983). Since publication of the original Magnet study, research has continued to suggest that attraction and retention of nurses depends on a professional practice environment that facilitates autonomy and control over practice (Aiken et al., 1997; Aiken, Havens, & Sloane, 2009). In fact, CONP has gained recognition as the single most discriminating characteristic of magnetism and an essential

factor in differentiating the nurse practice environment of Magnet from non-magnet hospitals (Kramer, Schmalenberg & Maguire, 2004b). Following the study by Aiken, Smith, & Lake (1994) documenting lower mortality among Magnet hospitals, the conceptualization of CONP has further evolved to include recognition of CONP as an organizational characteristic that enables staff nurses to shape patient-centered policies, standards for care quality, and access to appropriate resources at the unit and organizational level (Scott, Sochalski, & Aiken, 1999). In fact, CONP was recently defined by staff nurses who practice in Magnet Hospitals as the “participatory process enabled by a visible, organized, viable structure through which nurses have input and engage in decision making about practice policies and issues, as well as personnel issues affecting nurses” (Kramer & Schmalenberg, 2004b, p.46).

Despite the importance of CONP as essential for a professional practice environment, the extent to which it is conceptually distinct from autonomy continues to be debated in the nursing literature. Efforts to integrate these concepts have led some to describe autonomy as an antecedent of CONP while others describe CONP as an antecedent of autonomy. For example, some argue that autonomy is an independent process of clinical decision-making (Kramer et al., 2004), while others suggest that staff nurse decision-making is negotiated within interdependent practice boundaries (Porter-O’Grady, 1987; Weston, 2008). Still others argue that nurses’ ability to develop policy, direct and evaluate clinical care, and lead organizational operations that pertain to patient care quality, practice standards, and outcomes is indicative of decision-making control over nursing practice. Despite these various perspectives, decision-making control over nursing practice continues to be seen an essential component of a professional practice

environment because the operating systems and governing structures of hospitals influence “every decision affecting patient care” (AACN, 2005, p. 192).

In the following section, literature related to CONP, job satisfaction, and patient care quality, the two dependent variables in this study, will be summarized. Additionally, studies to investigate the possible effect of emotional exhaustion as a mediator of the relationships among CONP, job satisfaction, and patient care quality will be described.

### **CONP and Job Satisfaction**

Nurses’ job satisfaction can be defined as the degree to which nurses like or enjoy their jobs (McCloskey & McCain, 1987) and is seen to include both professional and organizational dimensions (Slavitt et al., 1978). The professional dimension describes nurses’ satisfaction with the impact of their work on patients while the organizational dimension describes nurses’ satisfaction with their job. Job satisfaction has been the most frequently studied outcome in relation to CONP. In general, there is consistent support to suggest that higher levels of CONP are associated with greater staff nurse job satisfaction (Forbes et al., 1997; Kramer & Schmalenberg, 2008; Parsons et al, 2004). Further, in a study to predict turnover intentions, CONP was identified as an important source of satisfaction for staff nurses. The direct effects of CONP predicted organizational job satisfaction while indirect effects of CONP predicted professional satisfaction (Hinshaw et al., 1987). In particular, these findings suggested that CONP as it relates to how nurses’ work is organized was a stronger predictor of *organizational or job satisfaction* when compared to CONP as it relates to providing quality patient care as a predictor of *professional satisfaction*.

The relationship between CONP and job satisfaction may differ depending on the unit of analysis at which these variables are measured. For instance, most researchers have found a significantly positive relationship between CONP and job satisfaction at the workgroup (Mark, Salyer, & Wan, 2003; Walls, 1992) or organizational unit of analysis (Schmalenberg & Kramer, 2008). Although similar findings have been reported at the individual unit of analysis, Walls (1992) reported a significant relationship between CONP and job satisfaction at the workgroup but not the individual unit of analysis. Additionally, Parsons and colleagues (2004) reported increased job satisfaction at the individual unit of analysis for subscales related to *involvement with physicians* and *involvement with staff* but not for overall job satisfaction. Finally, the predictive power of CONP has been found to be stronger at the workgroup unit of analysis for patient care quality than for job satisfaction (Mark et al., 2003). Hence, the evidence suggests that the relationships between CONP, job satisfaction, and patient care quality may be context-related, meaning that they are affected by hierarchical influences that operate at the workgroup and organizational levels. As such, these relationships are likely to differ when measured at an individual rather than a macro unit of analysis.

### **CONP and Patient Care Quality**

As with job satisfaction, the conceptualization and operationalization of patient care quality have differed by study. For example, patient care quality has been studied in terms of adverse events that include medication errors, nosocomial infections, and patient falls (Laschinger & Leiter, 2006), medication errors and falls individually (Mark et al., 2003, 2008), work effectiveness (Laschinger & Havens, 1996), and nurse reports of patient care quality using a single item measure (Schmalenberg & Kramer, 2008).

Despite these different approaches to the measurement of patient care quality, there is support to suggest that the relationship between CONP and staff nurse reports of patient care quality is stronger than that between CONP and staff nurse reports of job satisfaction (Laschinger & Havens, 1996; Laschinger et al., 2001; Laschinger, Finegan, & Shamian, 2001; Schmalenberg & Kramer, 2008). In two studies, Laschinger et al., (1996; 2001) tested components of Kanter's theory of structural empowerment which suggests that performance and organizational goal achievement depend on the structural characteristics and informal power relationships within the work environment. Structural characteristics provide access to the information, support, and resources that are needed for work completion as well as access to opportunities for the acquisition of new knowledge and personal and professional growth. Informal power structures describe professional and interdependent relationships and alliances that are negotiated within interdisciplinary practice boundaries for the purpose of providing high quality patient care. In these studies, CONP, measured using the NWI-R, was found to be a stronger predictor of patient care quality than of job satisfaction. The findings from these two studies suggest that the context dimension of CONP can be aligned with the content dimension CONP to predict desired outcomes such nurse-reported quality of care and job satisfaction.

However, studies to investigate the relationship between CONP and objective measures of patient care quality have resulted in mixed findings. Boyle (2004) found that nursing units where CONP was promoted reported fewer falls but more urinary tract infections. Mark et al. (2003) used a composite variable that incorporated decentralization, nurse-physician collaboration, and autonomy, measured using the 21-item CONP-S, to investigate outcomes associated with a professional practice

environment on nursing units. These researchers found that a professional nursing practice was not a significant predictor of patient care quality in terms of unit-level medication errors and patient falls. In a later study, Mark et al. (2008) developed a composite variable to represent work conditions that support professional nursing practice. This variable included autonomy, measured using the 16-item CONP-S, relational coordination, and nurses' participation in decision making. No relationship was found between work conditions that support professional practice and the number of unit-level medication errors and falls. However, safety climate on the nursing unit was identified as a moderator of the relationship between medication errors and falls. Due to the way the professional practice environment was measured in the studies by Mark, it is not possible to identify the direct effect of CONP on these outcomes.

Lastly, in a survey study conducted using EOM to measure CONP, researchers investigated factors by which Magnet hospitals could be differentiated from non-magnet hospitals. Using data obtained from over 10,000 nurses from 34 hospitals, these researchers found that CONP as well as outcome criteria were identified for each of the eight EOM scales including CONP and all three outcome criteria of patient care quality, job satisfaction, and professional satisfaction differed systematically across Magnet and non-magnet hospitals. Specifically, Magnet hospitals were characterized by greater CONP, better patient care quality, and higher levels of job and professional satisfaction among the nursing staff. Although these findings support a relationship between CONP and patient care quality, the EOM does not differentiate between control over the content and context dimensions of nursing practice.

### **Emotional Exhaustion and CONP**

Recognized as a key dimension of job burnout, emotional exhaustion can be described as the feeling of being emotionally overextended and exhausted by one's work (Maslach, Jackson, & Leiter, 1996). Emotional exhaustion results from the psychological and physiological costs of work resulting from the workload, staffing and scheduling issues, and the cognitive demands that are required for effective information processing, problem-solving, and use of skill discretion (Schaufeli & Bakker, 2004). High levels of emotional exhaustion have been linked to increased work-related errors (Van Der Linden, Keijsers, Eling, & Schaik, 2005). Hence, reducing emotional exhaustion is important to the goal of minimizing cognitive failures so that patient care quality is enhanced, a safe environment for patients is provided, and a more satisfying work environment for nurses is created.

There is evidence to suggest that emotional exhaustion may mediate the relationship between nurses' work environment and patient outcomes. In a study to investigate the quality of nurses' work life, Laschinger and Leiter (2006) found that a positive work environment for nurses was associated with significantly fewer adverse patient events. Although a direct relationship between emotional exhaustion and adverse patient events was not found, the overall fit of the model in this study provided support for a possible relationship between emotional exhaustion and adverse events. In another study, Laschinger et al. (2001) investigated the effects of hospital attributes on staff nurse perceptions of job satisfaction and patient care quality and included organizational commitment and emotional exhaustion as potential mediators of the organizational attribute-outcome relationship. Hospital attributes were measured in terms of autonomy, nurse-physician communication, and control over nursing practice, three structural



variables that are recognized as important for a professional nurse practice environment. As a group, these attributes were a strong and significant predictor of both patient care quality and job satisfaction, although they were more strongly predictive of patient care quality than of job satisfaction. Further, emotional exhaustion and organizational commitment mediated the relationship between hospital attributes and nurse reported patient care quality and job satisfaction. Despite these findings, however, the fit of the model tested in this study was poor. In addition, the direct effect of CONP on these outcomes is unknown due to the way that hospital attributes were measured in this study.

### **Discussion**

The findings from this literature review suggest that CONP is an outcome of the structural mechanisms that are used by organizations to control and coordinate work activities. Further, it is probable that CONP incorporates elements of both decision latitude and skill discretion. Investigating CONP as a construct that incorporates decision latitude and skill discretion as they relate to both the content and context of professional nursing practice may contribute to a better understanding of CONP and its implications for nurse, patient, and organizational outcomes. In addition, refinements to the conceptualization of CONP can contribute to the development of work design initiatives that promote patient care quality as well as nurses' professional and job satisfaction.

The argument that CONP arises from the way work is structured in the organization suggests that measurement of CONP beyond the individual unit of analysis is appropriate. This is especially true since CONP requires a realignment of the traditional hierarchical approach to decision-making and, thus, evolves as a top-down process rather than as an isomorphic process that evolves from CONP at the individual

level to the workgroup level. As such, structural features like centralization, standardization, and formalization may play a defining role in the extent to which CONP can be attained and sustained.

It is probable that alignment of the governing and coordinating systems that regulate daily patient care activities play a role in nurses' job performance. This is especially true since the interpretation of patient's signs and symptoms and selection of appropriate interventions impose cognitive demands that are consistent with complex work. Factors that erode the vigor and dedication of the nursing staff increase the vulnerability of the work environment in terms of potential threats to patient care quality and safety. Therefore, understanding how best to align both the content and context dimensions of control over nursing practice may contribute to the creation of safer work environments.

Research on CONP has been hampered by the use of multiple instruments that often have not been based on a clear understanding of job control and how it differs from autonomy. Further, instrument and scale items that have been used to measure CONP often have confounded the measure of job control with other work characteristics like autonomy and skill discretion, thereby challenging the empirical disconfirmation and falsifiability of much of the research that has been done on CONP (Bacharach, 1989). In other words, the use of instruments that measure more than one concept at the same time has resulted in measurement instability, which has limited the identification of consistent relationships between CONP and other variables that are of critical importance to patient safety and high quality outcomes.

The investigation of CONP using measures that do not confound control with work autonomy, decision latitude, skill discretion or other characteristics of nurses' work may minimize the conceptual ambiguity that has been characteristic of the research literature on CONP. Development and testing models that include the essential components of job control, incorporate both content and context dimensions of CONP, and discriminate among disparate aspects of nurses' work can clarify our understanding of how different aspects of nurses' work contribute to the attainment of desired patient and nurse outcomes. Evaluation of the factorial validity of instruments that measure CONP in terms of both the content and context dimensions also may demonstrate that decision latitude explains control, a distinction that can validate the role of decision latitude as a function of control and clarify the extant conceptual ambiguity between job control, decision-making autonomy, and decision latitude.

Effective decision-making is essential in establishing and sustaining healthy work environments. Yet control is an interdependent process particularly critical for but not specific to knowledge workers with specialized skills derived from mastering relevant content, and transforming data from patients through cognitive characteristics of complex work such as information-processing, problem-solving, specialization, and skill discretion that are required to assess, intervene, and deliver safe and effective patient care.

### **Chapter Summary**

In this chapter, a review of the theoretical and research literature on CONP was summarized. Additionally, areas in which the investigation of CONP can be improved were presented, including the need for greater conceptual clarity between CONP and

autonomy and the need for measures in which CONP is not confounded with other similar but different concepts. In Chapters 4 and 5, the findings from this study, written in manuscript form, are presented. Specifically, in Chapter 4, findings from an analysis of the factorial validity of the Decisional Involvement Scale as a measure of both the content and context dimensions of CONP are reported. In Chapter 5, results of model testing to evaluate the relationships among CONP, emotional exhaustion, nurse-reported patient care quality and nurses' job satisfaction are reported.

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## Figure 1

### Selection Process

- 5579 Potentially relevant articles identified and screened for retrieval
- 120 Excluded
  - Non-English
- 670 Excluded
  - Non-Peer Review Journals
- 199 Excluded
  - Date Constraints
- 3984 Excluded
  - Title & Abstract Review
- 585 Excluded
  - Content Review
- 5 Added by Purposive Selection (Despondency Methods)
- **24 Studies identified for Review**

Table 1

References by Measure of CONP and relationship with Satisfaction, Patient Care Quality, or Emotional Exhaustion

First Author(Year)	Measure								Criterion		
	CONP-I	CONP-S	NWI-R	PES	EOM	DIS	Control	IPNG	JS	PCQ	EE
Hinshaw et al., (1987)	X								X		
Forbes et al., (1997)	X								X		
Gerber et al., (1990)		X							X		
Walls (1992)		X							X		
Laschinger & Havens, (1996)		X							X	X	
Parsons et al., (2004)		X							X		
Molinari & Monserud, (2008)		X							X		
Mark et al., (2003)*		X							X	X <sup>1</sup>	
Mark et al., (2008)*		X								X	
Aiken & Patrician (2000)			X								
Laschinger et al., (2001)			X						X	X	X
Laschinger et al., (2003)			X						X		
Boyle (2004)			X							X	
Lake (2002)				X							
Leiter & Laschinger (2006)				X							X
Leiter & Laschinger (2006)				X						X	X
Kramer & Schmalenberg (2004)					X						
Kramer & Schmalenberg (2008)					X				X	X	
Havens & Vasey (2003)						X					
Laschinger et al., (2001)							X		X		
Hess (1998)								X			
Blegen et al., (1993)											
Anthony (1999)											
Laschinger et al., (1997)											

Note. \*Authors used CONP-Scale to construct a latent variable labeled autonomy.

Table 2

Instrumentation for CONP: Conceptualization, Dimensionality, Level of analysis, and Conceptual Framework

Instrument	Author/Year	Conceptualization	Dimensionality				LOA	Conceptual Framework
			C-ENT	C-EXT	STR			
CONP-I	Hinshaw et al., (1987)	Organizational features that impact decentralized clinical practice.	X	X	M	I		
CONP-S	Gerber et al., (1990)	Decision-making autonomy governing practice and practice environment.	X	X	M	I/G	Spector (1986) Empowerment	
DIS	Havens & Vasey (2003)	Distribution of decisional involvement for practice and practice environment.	X	X	MD	I/G		
PDMAQ	Blegen et al., (1993)	Decision-making authority and accountability for care-giving and unit operations	X	X	NR	I		
PDAQ	Anthony (1999)	Degree of influence decision-making has over practice and unit operations	X	X	NR	I		
EOM Sc-CONP	Kramer and Schmalenberg (2004)	Voice in shaping practice and environment through visible and viable decision making structures	X	X	MD	I/G	Donabedian Structure/Process/ Outcome (1967)	
NWI-R Sc-Control	Aiken & Patrician (2000)	Control implied as being structural and present in current job	X	X	MD	I/G	Aiken et al., (1997) OAPO Model	
PES Sc-NPHA	Lake (2002)	Structural decision-making participation for practice & environment by committee	X	X	MD	I/G	Aiken et al. (1997) OAPO	



Table 2

Instrumentation for CONP: Conceptualization, Dimensionality, Level of analysis, and Conceptual Framework (continued)

Instrument	Author/Year	Conceptualization	Dimensionality			LOA	Conceptual Framework
			C-ENT	C-EXT	STR		
IPNG	Hess (1998)	Distribution of professional nursing governance for organizational resources that support professional practice	X	X	MD	I	Hess (1994) Governance Model
WUDS	Laschinger et al., (1997)	Involvement in decisions that govern work unit		X	NR	I	
JDQ	Laschinger et al., (1997)	Decision-making autonomy founded on expert knowledge	X			E	Hackman & Oldham (1975) JCT
Control SD & DMA	Laschinger et al., (2001)	Decision-making autonomy plus skill discretion	X	X	I	MD	Karasek (1979) DCM

*Notes:* LOA – Level of Analysis; C\_ent – Content; C\_ext – Context; STR – Structure; M – Monolithic; E – Equivocal; I – Individual; I/G – Individual / Group; MD – Multidimensional; Sc – Subscale; CONP – Control over nursing practice; Control – Nurse control over practice environment; NPHA – Nurse participation in hospital affairs; OrgCon – Organizational Constraints; SD Skill discretion; DMA – Decision-making autonomy; Aut – Autonomy; NR – Not Reported; OAPO – Organizational Attribute / Patient Outcomes Model (1997), JCT – Job Characteristic Theory, DCM – Demands-Control Model

Table 3

## Confounded Measures of Control, Skill Discretion, and Work Characteristics

Instrument	Author/Year	Control			Work Characteristics						Comments	
		SD	C	DL(DMA)	SA	MA	CA	Spec	PS	IP		
Control SD & DL	Laschinger et al., (2001)	X	X	X	X	X						
CONP-I	Hinshaw et al., (1987)		X		X	X	X					
CONP-S	Gerber et al., (1990)	X	X	X	X	X	X	X	X	X		
DIS	Havens & Vasey (2003)	X	X	X	X	X	X		X	X		
PDMAQ	Blegen et al., (1993)	X	X	X	X	X	X		X	X		
PDAQ	Anthony (1999)		X	X	X	X	X					
EOM Sc-CONP	Kramer & Schmalenberg (2004)	X	X	X					X	X		
NWI-R Sc-NPHA	Aiken & Patrician (2000)	X	X						X	X		
IPNG	Hess (1998)	X	X	X	X	X	X		X	X		
WUDS	Laschinger et al., (1997)	X	X	X	X	X			X	X		Validity NR
JDQ (Sc-Aut)	Laschinger et al., (2001)			X	X	X						

*Notes* SD – Skill Discretion; DL – Decision Latitude; C – Centralization; WSA – Work/scheduling autonomy; MA – Methods Autonomy; CA – Criteria autonomy; Spec – Specialization; PS – Problem-solving; IP – Information-processing; Sc – Subscale; CONP – Control over nursing practice; Control – Nurse control over practice environment; NPHA – Nurse participation in hospital affairs; Aut – Autonomy; NR – Not Reported in the literatures.

Table 4

## Instrument Reliability and Validity for Dimensions of Control Reported in the Nursing Literature

Instrument	Author/Year	Psychometrics		Satisfaction	
		Reliability	Validity	Organizational/Job	Professional/ROQ
Control SD & DL	Laschinger et al. (2001)	$\alpha=.71$	Convergent, discriminant & predictive validity	X	
CONP-I	Hinshaw et al., (1987)	$\alpha=.73-.88$	Factor analysis, predictive modeling, & construct validity	X	X
CONP-S	Gerber et al., (1990)	$\alpha=.91-.94$	Factor analysis, convergent, discriminant, & predictive	X	X
DIS	Havens & Vasey (2003)	$\alpha=.91-.95$	Construct validity /CFA, CVI =1.0, contrasted groups, and predictive validity.	NR	NR
PDMAQ	Blegen et al., (1993)	NR	Expert Panel	NR	NR
PDAQ	Anthony (1999)	$\alpha=.76-.92$	Convergent & discriminant validity. Expert panel.	NR	NR
EOM Sc-CONP	Kramer & Schmalenberg	$\alpha=.89$	Factor analysis, CVI>.87 contrasted groups	X	X
NWI-R Sc-Control	Aiken & Patrician (2000)	$\alpha=.79$	Contrasted groups	X	X

Table 4

## Instrument Reliability and Validity for Dimensions of Control Reported in the Nursing Literature (Continued)

Instrument	Author/Year	Psychometrics		Satisfaction	
		Reliability	Validity	Organizational/Job	Professional/ROQ
PES Sc-NPHA	Lake (2002)	$\alpha=.83$	Factor analysis, Expert panel, Contrasted groups	X	X
IPNG	Hess (1998)	$\alpha=.87-.91$ , retest=.77	Factor analysis, CVI<.94, Convergent validity, contrasted groups	NR	NR
WUDS	Laschinger et al., (1997)	$\alpha=.87$	Convergent validity, Model Fit Indices	NR	NR
JDQ Sc-Aut	Laschinger et al., (1997)	$\alpha=.85$	Convergent validity, Model Fit Indices	NR	NR
DIS	Havens & Vasey (2003)	$\alpha=.91-.95$	Construct validity /CFA, CVI=1.0, contrasted groups, and predictive validity.	NR	NR

*Notes.* ROQ – Reports of Quality; SD & DL – Skill discretion & decision latitude; CFA – Confirmatory Factor Analysis; CVI – Content validity index; Sc – Subscale; CONP – Control over nursing practice; Control – Nurse control over practice environment; NPHA – Nurse participation in hospital affairs; Aut – Autonomy; NR – Not reported

## **Chapter IV**

### **Factorial Validity of the Decisional Involvement Scale as a Measure of Control over Nursing Practice: A Two Dimensional Construct?**

The original Magnet hospital study, published in 1983, documented the role of the practice environment as essential to the ability of hospitals to recruit and retain professional nurses. In particular, findings from this study suggested that nurses' work should be structured in ways that are conducive to a professional practice model that supports nurses' participation in decision-making and control over nursing practice (CONP). In their study documenting lower mortality among Magnet hospitals, Aiken and colleagues (1994) further raised awareness about the essential role of the practice environment not only for recruitment and retention but also for reducing hospital mortality rates. In the years since publication of these studies, numerous strategies to improve the practice environment have been described in the nursing literature. Yet, many of these design initiatives have been of limited benefit in improving patient care quality and safety (Tiedeman & Lookinland, 2004). In fact, reports by the Institute of Medicine (IOM) have identified the practice environment in hospitals as a continuing threat to high quality and safe patient care (Kohn, Corrigan, & Donaldson, 2000; Page, 2004).

Although CONP has been the topic of numerous studies, this area of research has been limited by two key sources of ambiguity. First, much of this research has been characterized by overlapping conceptualizations of professional autonomy and CONP

(Kramer & Schmalenberg, 2003a, 2003b; Weston, 2008). Such ambiguity can be attributed, in part, to the approaches used to measure these concepts since the same instrument or the same items from different instruments have been used to measure autonomy in some studies and CONP in other studies (Kramer & Schmalenberg, 2003a, 2003b; Weston, 2009). Second, most researchers have conceptualized and measured CONP as a one-dimensional concept (Gerber, Murdaugh, Verran, & Milton, 1990; Hinshaw, Smeltzer, & Atwood, 1987) or as a singular component of a global measure of the practice environment like the Nurse Work Index-Revised (Aiken & Patrician, 2000). These areas of ambiguity in the conceptualization and measurement of CONP have limited the development of strong theory to guide work design initiatives because they compromise falsifiability and empirical disconfirmation, threaten construct validity, and diminish explanatory power (Bacharach, 1989; Shadish, Cook, & Campbell, 2002). For these reasons, greater clarity in the conceptualization of CONP and its relevant dimensions is an important first step in developing design strategies in which the nursing practice environment can be structured in ways that successfully facilitate high quality and safe patient care during hospitalization.

The work design literature is based on the fundamental premise that organizational effectiveness is contingent on a match between characteristics of the work itself and the way in which work is structured (Parker & Wall, 2001; Scott, 2003). Based on this premise, it can be argued that failure to adequately align the practice environment with the cognitive, motivational, and social characteristics of nurses' work has limited consistent goal achievement in the areas of patient care quality and staff satisfaction. For example, nurses respond to the needs of diverse patient groups using specialized

knowledge to provide individualized care, analyze complex clinical problems, and promptly respond to changes in patients' status. The complexity, uncertainty, and interdependence that is characteristic of this work suggests that the practice environment should be structured using the perspective of nurses as knowledge workers who, based on their specialized knowledge and expertise, should exercise control over their practice not only in terms of *how* care-related activities are completed but also in terms of *what* care-related activities are needed to achieve optimal patient outcomes. Aspects of the practice environment that determine how care-related activities are completed can be described as the context of nursing practice. These aspects include unit, departmental, and organizational policies and procedures as well as the governance structures through which decision-making authority is delegated (Clifford & Horvath, 1990; Kramer & Schmalenberg, 2003a; Weston, 2008). Similarly, the care-related activities that nurses are legally authorized to perform within the boundaries that define the scope of nursing practice can be described as the content of nursing practice (Clifford & Horvath, 1990; Laschinger & Havens, 1996; Weston, 2008). As such, the goal of providing high quality and safe patient care may well depend on the extent to which control over both the context and content of nursing practice are appropriately matched to the characteristics of nurses' work.

Although the conceptual dualism of CONP as a construct that includes complimentary yet distinct dimensions for both the content and context of nursing practice has been recognized in the nursing literature (Blegen et al., 1993; Hinshaw et al., 1983; Laschinger & Havens, 1996; Laschinger, Sabiston & Kutzscher, 1997; McClure, Sovie, Poulin, & Wandelt, 1983; Weston, 2008), no studies have been done to investigate



CONP as a two-dimensional construct or evaluate the extent to which an existing instrument can be used as a valid measure of these dimensions. Therefore, the purposes of this study were to investigate CONP as a two dimensional construct that includes control over the context and content of nursing practice and evaluate the factorial validity of the Decisional Involvement Scale (Havens & Vasey, 2003; 2005) as a measure of these dimensions.

## **Study Methodology**

### **Research Design**

This study was conducted as a secondary analysis of data obtained from the *Building Capacity for Better Work and Better Care* (D. S. Havens, Principal Investigator) project which was conducted to investigate staff nurse decisional involvement in six community hospitals located in medically underserved counties of Pennsylvania (Havens, 2004).

### **Procedures for Data Collection**

Data from the parent study, a 5-year longitudinal action research project was used for this analysis (Havens, 2004). The project goal was to shape the nurse practice environment by improving the communication and collaboration among health care professionals, enhance staff nurse involvement in both clinical and organizational decision-making, and enrich the cultural awareness and sensitivity towards key stakeholders of hospital care environments such as patients, families, physicians, and staff. The six partner hospitals were selected in a systematic manner derived from 2002 licensure renewal data collected by the PA Department of Health RN (PADOH RN) questionnaire. For example, selection criteria included nurses living in counties

identified with nurse shortages, staff satisfaction with both current job and nursing as a career, along with age and intent to leave nursing in the next 5 years. Hospital partner selection depended on existing JCAHO accreditation, more than 100 operating beds, and the absence of other community-wide market competitors. JCAHO accreditation provided a measure for use of evidence-based standards, monitoring capabilities, and administrative support considered critical for the collection and documentation of action research outcomes; and the size constraint was based on the likelihood of success for larger facilities as determined by consulted experts.

On-site hospital study coordinators encouraged staff RNs to complete the survey. The nurse questionnaire asked about demographic characteristics, career and job satisfaction, intent to leave, emotional exhaustion (a component of burnout), decisional involvement about nursing practice and the organization of nursing work, communication and teamwork, the characteristics of the nursing work environment, and perceptions about the quality of patient care.

### **Sample**

The sample for this study was RNs who completed the first wave of data collection for the parent study. There were 1182 returned questionnaires from a total of 1937 providing a response rate of 1182/1937 (61%) for this wave of the parent study. Because variance-covariance analysis requires complete data, 270 cases were excluded due to missing values, resulting in a sample size of 912 for this study.

The mean age of the nurses in this sample was 42.3 years, with 17% less than 30 years of age, 27% between the ages of 30-40 years, 34% between the ages of 41-50 years, 20% between the ages of 51-60 years, and 2% between 61 to 66 years of age. Sixty-four

percent of the sample reported 10-20+ years of experience (35% reported at least 20 years of experience) and 23% reported having 5 or less years of experience. Educational preparation in nursing included the Associate Degree (33%), a Diploma from a hospital-based program (31%), and the baccalaureate degree (28%).

Overall, 73% of the sample was staff nurses employed full time, with 27% employed less than 35 hours per week. Units represented in this sample included medical-surgical (18%), obstetrics (14%), and (11% each) for the intensive care unit, surgery, and the emergency department. The remaining 35% of this sample identified ambulatory care, pediatrics, psychiatric, rehabilitation, skilled nursing, or a step-down unit as their primary work area.

### **Measure**

The Decision Involvement Scale (DIS) was developed to assess the distribution of decision authority for critical elements of nurses' work that relate to clinical practice and the practice environment in hospitals. The DIS is a 21-item summated rating scale that was constructed using a Likert-type format with five response options. For each item, participants are asked to identify who is actually involved in certain activities and decisions on the work unit using anchors that range from (1) administration/management only to (5) staff nurses only. Higher scores on the DIS indicate greater staff nurse decision-making authority, mid-range scores indicate that decision-making authority is shared, and lower scores indicates limited staff nurse decision-making authority (Havens & Vasey, 2003). Hence, the DIS provides a measure of structural decision-making authority delegated to staff for critical elements of nurses' work.

The DIS is multidimensional with six subscales that represent the following areas related to both clinical practice and the nurse practice environment: unit scheduling and staffing; quality of professional practice; professional recruitment; unit governance and leadership; quality of support staff practice; and, collaboration/liaison activities. For example, the Clinical/Liaison subscale queries decision authority for relations with physicians about patient care and conflict resolution among the RN staff on the unit; the Quality of Professional Staff Practice subscale items target the development of RN practice standards and the evaluation of staff nurse practice; while Unit Staffing and Scheduling solicits the decision authority for staffing and unit scheduling decisions. On the other hand, the Professional Recruitment subscale focuses on the principals involved in interviewing and selecting RN's to work on the unit; the Unit Governance and Leadership subscale solicits the distribution of decision authority for items related to selecting the unit leader and determining supply and equipment needs; while the Quality of Support Staff Practice subscale targets the development of performance standards for support staff and the monitoring of performance standards for support staff. In previous studies, researchers have reported alphas ranging from .70 to .84 for the six subscales of the DIS, with an alpha of .91-.95 for the total scale (Havens & Vasey, 2005; Mangold et al., 2006; Weston, 2009).

### **Data Analysis**

**Content Validity of DIS as a Measure of CONP Dimensions.** Five doctorally-prepared nurses who, based on previous publications in peer-reviewed nursing journals, have recognized expertise in the areas of nursing autonomy and control over nursing practice were contacted by e-mail and asked to participate in the evaluation of the DIS as

a measure of control over the context and content of nursing practice. Using a survey attached to this email, these experts were asked to classify the DIS items as representative of one or the other, both, or neither of the content or context dimensions of CONP. Consistent with Dillman's (2000) tailored design method, a reminder e-mail was sent to non-respondents at 1, 4, and 8 weeks following the initial e-mail contact. Two content experts returned a completed survey, two returned incomplete surveys, and one did not return the survey. For the two content experts who returned a completed survey, inter-rater reliability using Cohen's kappa was .66. Because kappa gives a conservative estimate by correcting for chance agreements, values from .60 to .80 are indicative of good agreement (Cohen, 1960; Landis & Koch, 1977). The content experts disagreed in their classification of the Unit Scheduling and Staffing subscale, with one who identified this subscale as representative of content and the other who identified it as representative of context. Based on an in-depth review of the literature and consultation with Havens who developed the DIS (personal communication, 2009), the decision was made to designate the Unit Scheduling and Staffing subscale as representative of the content dimension of CONP.

**Factorial Validity of DIS as a Measure of CONP Dimensions.** Consistent with the purposes of this study, four latent variable models were developed and confirmatory factor analyses of scores obtained from the DIS were used to investigate CONP as a two-dimensional construct. Model testing was done by conducting confirmatory factor analyses (CFA) using AMOS™ version 7.0 (Arbuckle, 2006). This approach was used because, in contrast to exploratory factor analysis, it allows comparison of both absolute and relative fit indices from several competing factor structure models and also requires

theoretically-based a priori model specification (Fabrigar, Wegener, MacCallum, & Straham, 1999; Morgeson & Humphrey, 2006), which limits the extent to which the findings can be attributed to chance.

The four models tested in this study are diagrammed in Figures 1-4. In Model 1, a monolithic or first-order factor structure was constructed with all DIS items specified to load on CONP as a first-order latent variable. In Model 2, a factor structure with two first-order latent variables representing the context and content dimensions of CONP was constructed (McClure et al., 1983). In Model 3, the six subscales of the DIS were specified as first-order latent variables and CONP as a single second-order latent variable. In this model, items assigned to each DIS subscale as described by Havens & Vasey (2003, 2005) were specified to load on the corresponding first-order factors. For Model 4, all DIS items were specified to load on one of six first-order latent variables that correspond with the six subscales of the DIS. For this analysis, the classification provided by the content experts was used to specify the factor on which each of the DIS items would load. Then each of these subscales was specified to load on either CONP context or content as second-order latent variables.

### **Study Findings**

Prior to model testing, data were evaluated to insure that the assumptions underlying latent variable modeling were met. First, the number of free parameters to be estimated, which varied for each of the four models, ranged from 48 to 64. Hence, the ratio of observations to free parameters varied from 19.0 to 14.3:1 respectively. These ratios are consistent with the ratio of 10 to 20:1 recommended by Kline (2005). Second, these data were obtained from staff nurses who were clustered in one of six hospitals.

For this reason, the data set was tested to insure that the six subscale structure of the DIS and the two dimensional structure hypothesized for CONP met the assumption of cross-level invariance. Using hospital of employment as the independent variable, one-way ANOVA's were performed for each of the DIS subscales and the hypothesized content and context dimensions of CONP. These analyses were significant, suggesting that hospital of employment contributed significantly to the explained variance in both DIS subscale scores and CONP dimension scores. However, closer inspection of the data by hospital indicated that the assumption of cross-level invariance was met for all but one hospital. Finally, model testing was based on the use of Maximum Likelihood (ML) estimation so these data were evaluated to insure that the assumption of multivariate normality was met. Score distributions for all observed variables exhibited minimal skew and kurtosis and, thus, were judged as unlikely to compromise the analyses (Kline, 2005).

Means and standard deviation for the DIS items as exogenous variables along with the input covariance matrix are reported in Table 1. Each of these models shared several characteristics in common. First, all models were recursive since flow was theoretically conceived as unidirectional and feedback loops were not included (Kline, 2005). Second, each model was considered to be identified because all exogenous measurement indicators were scaled to their corresponding latent variable by setting a single factor loading to one, the number of parameters to be estimated were less than the number of sample moments, and the necessary order condition was met (Byrne, 2001; Kline, 2005). Although local identification failed in Models 3 and 4 because the Unit staffing and Scheduling subscale included only two observed indicators, however, more than one subscale was used to explain the second-order factors in these models, thus

correcting for this problem. Finally, in a previous confirmatory factor analysis, Havens and Vasey (2005) allowed the subscale structure of the DIS to covary. Consistent with this approach, the CONP dimensions for content and context were allowed to covary in these models.

Several indices were used to evaluate the fit of the hypothesized models to the observed data. First, the model  $\chi^2$  test of significance was used as an absolute fit index. Under optimal conditions, a statistically insignificant  $\chi^2$  test is indicative of fit between the model and the observed data (Byrne, 2001). Hence, probabilities less than or equal to .05 suggest that fit is less than adequate and the model should be rejected. However, this test is based on a central  $\chi^2$  distribution and, thus, is sensitive to sample size (Kline, 2005). Therefore, the sample size of 912 in this study might result in rejection of an adequately fitting model. For this reason, the standardized root mean residual (SRMR) also was used as an absolute fit index. The SRMR represents the average discrepancy between the observed and hypothesized correlation matrices, with lower SRMR values indicative of a better fitting model (Hu & Bentler, 1995).

Along with absolute fit indices, two relative fit indices and a predictive fit index also were evaluated. The comparative fit index (CFI) provides a measure of complete covariation between the observed and hypothesized correlation matrices. Although a CFI value greater than .90 was initially recommended as indicative of adequate model fit, Hu and Bentler (1999) recommend a more stringent criterion by suggesting that inferences about adequate model fit should be based on a CFI value that is closer to .95. The root mean square error of approximation (RMSEA) was used as a relative fit index because it is considered to be the most informative criterion in covariance structure modeling



(Kline, 2005). The RMSEA represents the proportion of variation between the observed and hypothesized correlation matrices that can be attributed to error. An RMSEA value less than 0.05 indicates good fit, a value greater than .05 but less than .08 indicates reasonable fit, and values in excess of .08 indicate poor fit (Kline, 2005). Finally, the Akaike's information criterion (AIC), which is based on the number of parameters to be estimated along with the statistical goodness of fit, was used to evaluate the models in this analysis for parsimony. Smaller values for the AIC are indicative of better fit (Kline, 2005).

Results of the confirmatory factor analyses are summarized in Table 2. The fit indices for Model 1 suggest a poor fit to the observed data. Although the fit indices for Model 2 were significantly better than those for Model 1, they also were indicative of a poor fit. Model 3 provided a significantly better fit to the observed data than did Model 2 ( $\Delta\chi^2 = 1221, \Delta df = 2, p < .01$ ). Fit indices suggested a reasonably adequate fit to the observed data with a CFI of .90 and RMSEA of .069. The AIC value suggested that this model was more parsimonious than Models 1 or 2. However, Model 4 provided the best fit to the observed data with a CFI of .91 and RMSEA of .058; and provided a significantly better fit to the observed data than did Model 3 ( $\Delta\chi^2 = 85, \Delta df = 1, p < .01$ ). AIC values also indicated that Model 4 was more parsimonious than the other models in this analysis.

## **Discussion**

Findings from this study support the conceptualization of CONP as a two dimensional construct that includes control over nursing practice in terms of both context (how care-related activities are completed) and content (what care-related activities

should be completed to achieve optimal patient outcomes). These findings are consistent with several work design theories, including the Demands-Control model (Karasek & Theorell, 1990), and Job Characteristic Model (Hackman & Oldham, 1975). According to these theories, decision authority is seen to encompass both skill discretion or control over decisions about the work itself and decision latitude or control over how work is sequenced and the methods that are used to complete work assignments. Both decision latitude and skill discretion are recognized in these theories as motivational work characteristics that enhance individual accountability in the areas of job performance and the attainment of work-related goals (Humphrey, Nahrgang, & Morgeson, 2007); and decision latitude is recognized as a dimension of organizational control. As such, the refined conceptualization of CONP as described in this study has relevance for structuring nurses' work in ways that support decisional authority over both the context and content of nursing practice.

The conceptualization of CONP with dimensions for both content and context emphasizes the cognitive characteristics of nurses as knowledge workers. Nurses as knowledge workers use skill discretion derived from a specialized body of knowledge to determine what interventions best meet individual patient-centered goals, hence, the accomplishment of patient, nurse, and organizational care goals. However, the context dimension of control may stifle skill discretion due to organizationally imposed decision constraints, or enhance the attention to detail that provides complex decision support. For example, formalized admission checklists enhance accurate medication reconciliation, appropriate dietary referrals, and the screening of seniors for pneumonia vaccination. However, centralized controls over staffing and scheduling demands may

impede patient-staff nurse interactions, reduce the surveillance and monitoring capabilities of patients by staff nurses, and diminish staff nurse interception of adverse patient events.

Another aspect of work emerges from the conceptualization of nurses' work with dimensions of control for both content and context. For example, the properties of *what* work is performed relates more to the cognitive and contextual demands of the job. Cognitive work is characterized by problem-solving, information-processing, and skill discretion while contextual characteristics of work such as working conditions relate to lighting or risk from blood-borne pathogens, physical workloads, or scheduling and staffing demands. On the other hand, *how* work is performed relates more to the motivational and relational/social characteristics of work resources availed to staff from governing and coordinating structures for decision-latitude, social interaction with and interdependence on others for task completion, and feedback from supervisors. Hence, the conceptualization of nurses' work from the perspective of job demands and job resources is also consistent with the Job Demands-Resources Model (JD-RM) (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). The model is used to examine employee well-being as a function of working conditions broadly operationalized as job demands and job resources that relate differently to specific outcomes (Demerouti et al., 2001; Hakanen, Bakker, & Schaufeli, 2006). Hence, the JD-RM conceptualizes work from a 2-dimensional perspective as well with outcomes specific to the influences from disparate aspects of work.

Different aspects of nurses' work may depend on different dimensions of control. For example, the context dimension of nurses' work may relate to simpler repetitive tasks

with predictable variation and may best be managed with greater formalization and standardization procedures such as admission forms and performance standards respectively. On the other hand, the content control of nurses' work may relate to more complex work that is characterized by patient-response unpredictability and may be best managed by emphasizing and supporting the work of nurses as knowledge workers. For example, decision support may be facilitated with input or collaboration from multiple individual and group sources, enhanced and user-friendly information processing systems, less formalization and standardization, and a greater decentralization of decision control.

These findings also support the use of the Decisional Involvement Scale (DIS) as a valid measure of CONP as a two-dimensional construct. In particular, acceptance of Model 4 as the one that provided the best fit to the observed data suggests that the CONP dimensions of context and content can be explained by decision-making autonomy (i.e., decision latitude) over different areas that are relevant to nursing practice. Therefore, decision latitude is a determinant of CONP. Specifically, the CONP content dimension was explained by staff nurse decision-making involvement in the areas of clinical liaison activities, quality of professional practice, and unit scheduling and staffing demands. On the other hand, the CONP context dimension was explained by staff nurse decision-making involvement in the areas of professional recruitment, management and leadership support, and quality of support staff practice. This information can be used to structure nurses' practice environment in ways that provide a better match between characteristics of nurses' work and areas of decisional authority that are especially relevant to the context and content of nursing practice.

## **Limitations**

Findings from this study must be interpreted in light of several limitations. First, data were obtained from a sample of staff nurses who worked in medically underserved counties of Pennsylvania. Therefore, these findings cannot be generalized to the entire target population of staff nurses (Shadish, Cook & Campbell, 2002). Second, this study was conducted as a secondary analysis of data collected as part of a larger study and limited to the examination of the DIS. Hence, the dimensionality and factorial validity of other CONP measures were not evaluated. Third, latent variable modeling is vulnerable to naming and reification fallacies, meaning that labels assigned to latent variables do not necessarily confirm the existence and may not represent an adequate conceptualization of the hypothesized construct that is of interest to the investigator (Kline, 2005). As with any study in which data are analyzed using latent variable modeling, these fallacies pose potential threats to the validity of this study. Fourth, the assumption of invariance was met for all but one of the six hospitals where data used in this study were collected. Further studies using multisite samples are needed to determine the significance of relevant hospital membership.

## **Implications for Future Research**

The findings from several studies suggest that control over the context and content of nursing practice may be differentially associated with outcomes. For example, Blegen et al. (1990) found that nurse-reported patient care quality was more strongly associated with control over the content of nursing practice while job satisfaction was more strongly associated with control over the context of nursing practice. Similar findings were reported in a study to evaluate staff nurse decision making behaviors

related to care-giving and unit operations (Anthony, 1999). A study to evaluate the dimensions of staff nurse decision involvement provided further support where staff nurses desired greater involvement in decisions related to the quality of professional practice or the content of nursing practice but reported little to no interest in non-patient care functions (Alutto & Vrendenburgh, 1977). Lastly, in a study to evaluate staff nurse anticipated turnover predicted by staff nurse reports of patient care quality, as a measure of professional satisfaction, and job satisfaction, as a measure of organizational satisfaction, CONP was a significant intervening variable as was decision latitude (Hinshaw, Smeltzer, and Atwood, 1987). This particular study supports the notion that how work is completed influences job satisfaction while what work is completed influences professional satisfaction. Therefore, additional research is needed to better understand differences in the relationships among control over the content and context of nursing practice and patient, nurse, and organizational outcomes.

Additional research is also needed to evaluate CONP as a group-level predictor. CONP is described as a group level phenomenon with a visible structure governed by nurses. Further evaluation of this 2-dimensional structure representing both the content and context dimension of CONP is warranted. A better understanding of CONP within and between work groups or hospitals may also be helpful. An evaluation of CONP to determine whether it comprises composition or compilation properties may also enable nurse administrators to better understand and design nurses' work in this complex and ever-changing health care environment.

## **Conclusion**

The findings from this study provide empirical support for the proposed hypothetical structure of CONP as having dimensions for both control over the context and content of nursing practice. The content dimension may describe the professional behaviors derived from a specialized body of knowledge that are negotiated within interdisciplinary practice boundaries while the context dimension may describe the behaviors and activities of nurses that support less complex work that is traditionally governed at the unit, departmental, and organization level. Disparate forms of organization may support the different aspects of nurses' work. For example, the context domain may be managed better with greater hierarchical support while the cognitive demands of nurses' work may be managed better with support for skill discretion. Further examination of CONP as operationalized with the DIS may provide a better understanding of how the work that nurses do can be aligned with decisional authority over areas that are relevant to nursing practice to better support patient care quality and safety.

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Table 1

Item Means and Standard Deviations and Inter-item Covariance Matrix

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
1	2.8 1.2																					
2	.77	2.5 1.2																				
3	.30	.40	1.9 .84																			
4	.32	.35	.44	1.8 .87																		
5	.32	.28	.35	.44	1.9 .85																	
6	.32	.32	.28	.34	.43	1.9 .87																
7	.19	.24	.23	.25	.23	.23	1.6 .81															
8	.16	.19	.15	.16	.16	.19	.25	1.3 .61														
9	.14	.16	.12	.15	.14	.18	.20	.28	1.3 .57													
10	.13	.14	.14	.17	.16	.19	.16	.19	.33	1.2 .58												
11	.14	.16	.16	.18	.13	.16	.17	.18	.17	.16	1.4 .67											
12	.15	.13	.16	.16	.14	.20	.14	.16	.16	.18	.18	1.4 .74										
13	.16	.19	.16	.17	.15	.20	.18	.19	.20	.21	.22	.22	1.3 .64									
14	.10	.14	.11	.13	.12	.14	.16	.18	.18	.15	.16	.14	.19	1.3 .56								
15	.18	.14	.19	.18	.19	.16	.18	.15	.16	.13	.14	.17	.20	.21	1.8 .81							
16	.22	.24	.25	.27	.26	.23	.18	.18	.19	.17	.19	.20	.24	.19	.33	1.6 .76						

17	.28	.32	.21	.25	.23	.23	.17	.17	.19	.18	.18	.21	.23	.19	.24	.36	.77	1.6			
18	.21	.22	.20	.23	.25	.26	.17	.15	.18	.16	.18	.22	.21	.18	.27	.18	.27	.76	1.6		
19	.25	.25	.19	.23	.23	.20	.17	.13	.14	.12	.12	.13	.17	.14	.28	.28	.20	.31	2.1		
20	.28	.22	.14	.19	.22	.22	.14	.07	.09	.08	.09	.11	.11	.08	.24	.21	.25	.27	1.0	2.6	
21	.33	.28	.14	.21	.22	.25	.17	.11	.12	.11	.11	.13	.14	.10	.18	.23	.23	.26	.27	1.1	2.3

Note. Item means and standard deviations are reported in the diagonal cells.

Table 2

Model Fit Indices

Model	$\chi^2$	<i>df</i>	SRMR	RMSEA	RMSEA CI <sub>90</sub>	CFI	AIC	$\chi^2_{diff}$
Model 1	2992	190	.128	.127	.123 - .131	.67	3116	
Model 2	2218	188	.075	.109	.105-.113	.76	2346	
Model 3	997	183	.062	.070	.066-.074	.90	1093	1221*
Model 4	912	182	.060	.066	.062-.071	.91	1009	85*

*Note.* SRMR = standardized root-mean-square residual; RMSEA = root-mean-square error of approximation; CI<sub>90</sub> = Confidence Interval; CFI = comparative fit index; AIC = Akaike's information criterion.

\*p<.01

Figure 1

One-Dimensional Structure

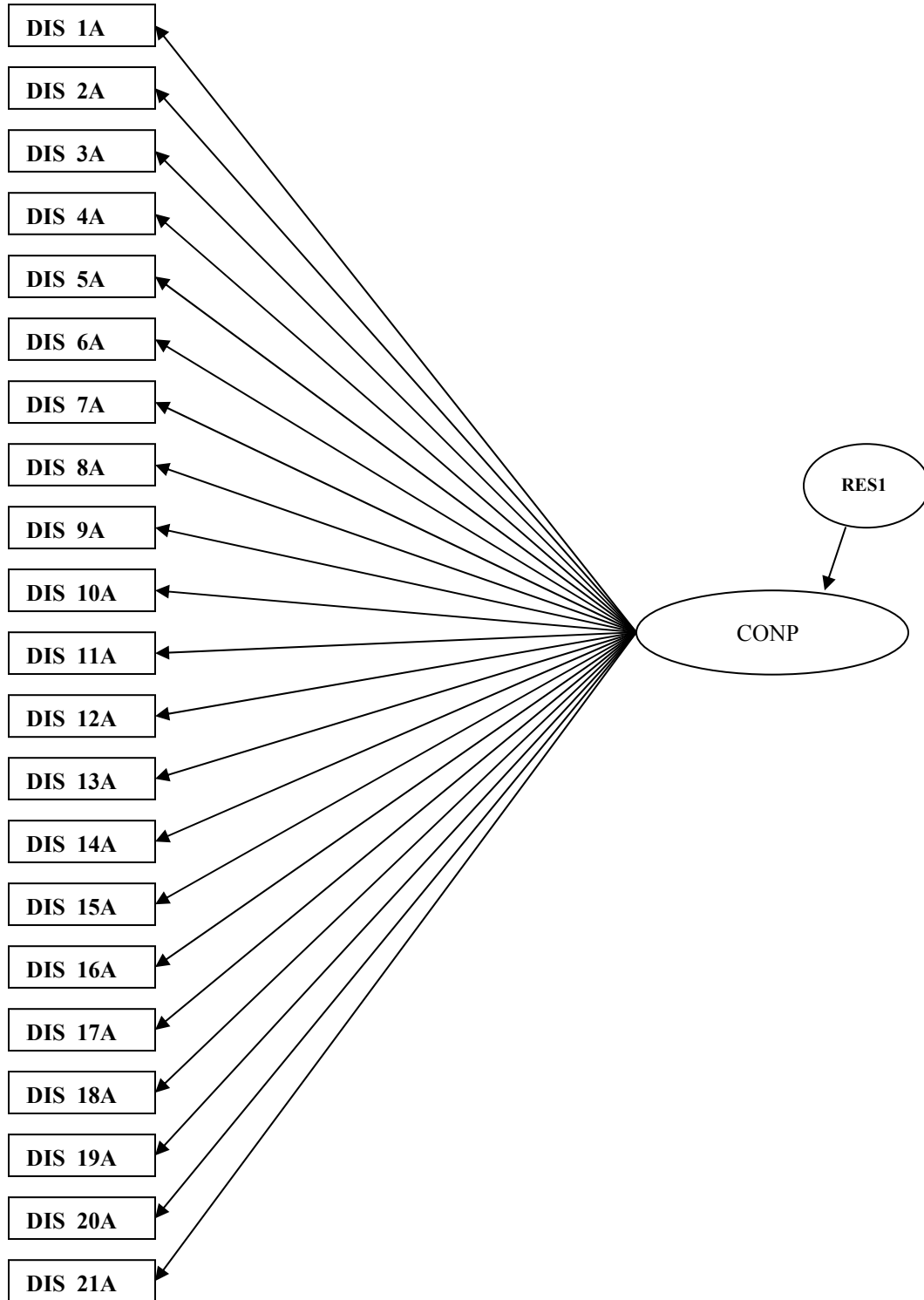


Figure 2

Two-Dimensional Structure

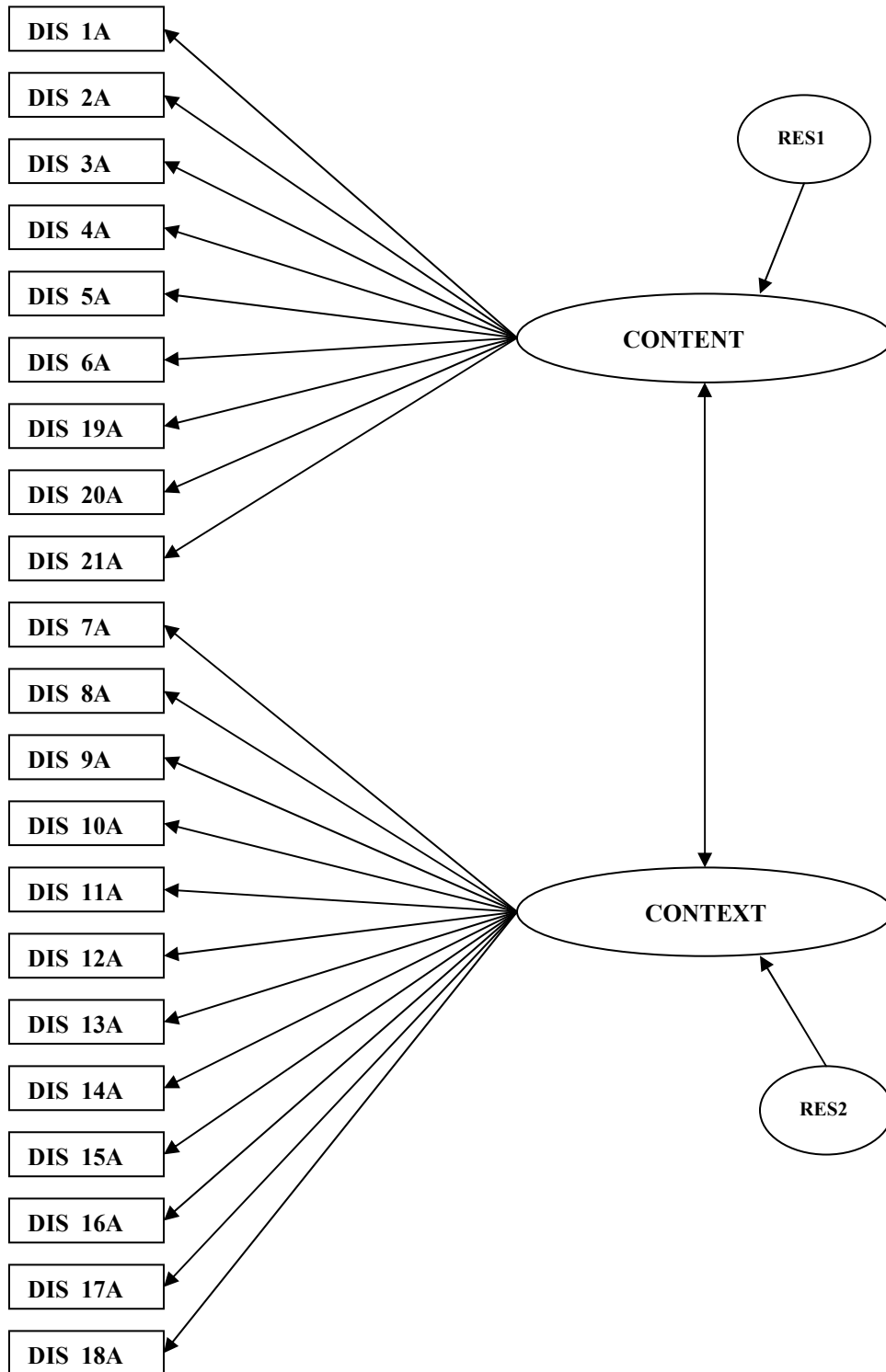




Figure 3

Six-Factor Second Order Structure

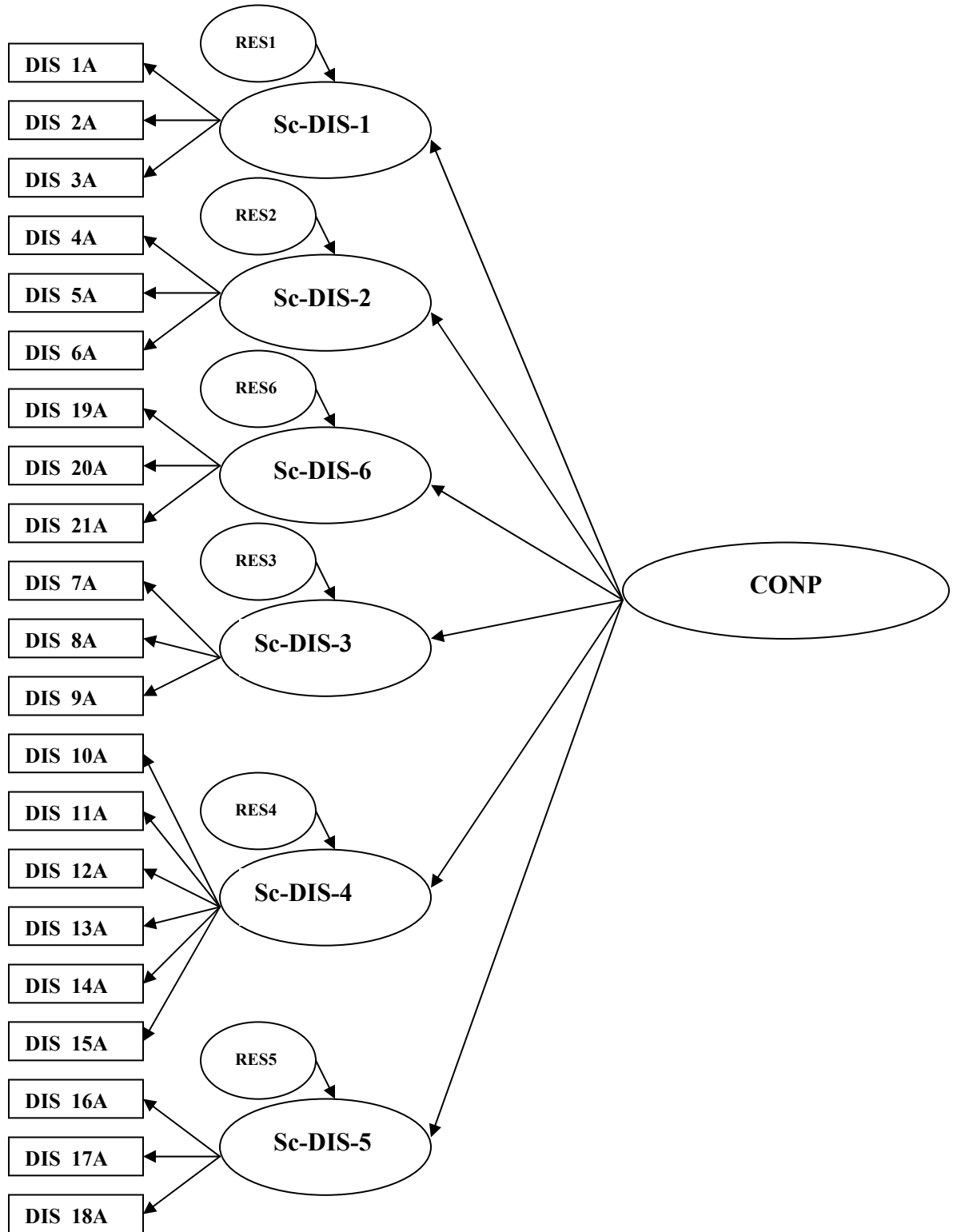
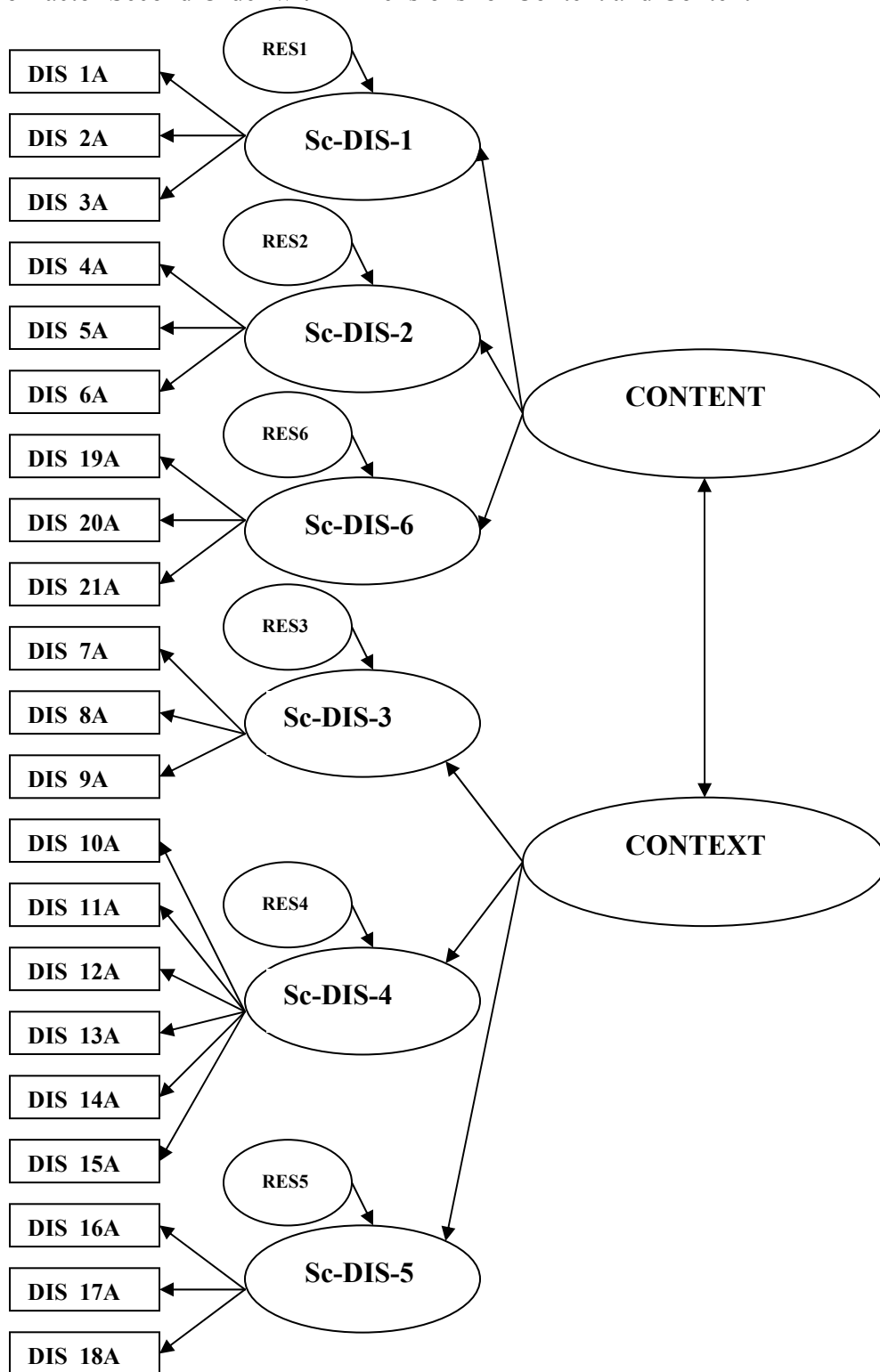


Figure 4

Two-Factor Second Order with Dimensions for Content and Context



## **Chapter 5**

### **Control over Content and Context of Nursing Practice as Group Level Predictors of Nurse-Reported Patient Care Quality and Job Satisfaction**

Control over nursing practice (CONP) has long been recognized as an essential component of a professional nursing practice environment. Although many studies have been done to investigate CONP and nurses' work environment, this area of research has been limited in three major ways. First, CONP and work autonomy often have been used interchangeably in the nursing literature, resulting in substantial conceptual ambiguity between these concepts. Second, CONP has been evaluated in some studies using items written originally to measure work autonomy or using instruments in which CONP is embedded in a multi-dimensional measure of nurses' work environment. Third, there is emerging evidence to suggest that CONP is comprised of two complementary yet distinct dimensions: control over the content of nursing practice and control over the context in which nurses practice (Kramer & Schmalenberg, 2004; Laschinger & Havens, 1996). Control over the *content* of practice can be described as the scope of practice-related decisions and actions that nurses are legally authorized to enact (Clifford & Horvath, 1990; Laschinger & Havens, 1996; Laschinger, Sabiston, & Kutzscher, 1997; Weston, 2009). Control over the *context* in which nurses practice can be described as nurses control over unit, departmental, and organizational operational policies and governance structures (Clifford & Horvath, 1990; Kramer & Schmalenberg, 2003b; Gerber, Murdaugh, Verran, & Milton, 1990; Laschinger & Havens, 1996; Hess, 1998; Laschinger

et al., 1997; Weston 2009). Yet, CONP has been measured in many studies as a one-dimensional construct in which control over the content of nursing practice has been commingled with control over the context of nursing practice. It is possible that control over the content and context of nursing practice may be differentially associated with both antecedent and outcome variables. As such, refined analysis of these dimensions of control and the antecedent and outcome variables that are related to them may contribute to a better understanding of control over nursing practice and its implications for creating work environments in which nurses are empowered to demonstrate excellence in their practice. Therefore, the purpose of this study was to separately examine group-level relationships among the content and context dimensions of CONP and nurse-reported patient care quality and job satisfaction.

This study makes several contributions to the literature on CONP. First, CONP was measured using an existing instrument that has been shown through confirmatory factor analysis to provide valid measurement for control over both the content and context dimensions of nursing practice. Second, two models were separately analyzed to identify the differential effects of CONP as a two-dimensional construct on outcomes that are relevant to nursing practice. Third, work design models in the organizational literature incorporate psychological states like emotional exhaustion, job stress, or burnout as intervening variables that mediate the relationship between work characteristics and desired outcomes. Hence, a 2-1-1 mediation model was analyzed with emotional exhaustion specified as an individual-level mediator of CONP-outcomes relationships.

### **Theoretical Background**

The Relational Resource Distribution Model (RRDM) is an investigator-developed conceptual framework that was used to examine relationships among selected characteristics of nurses' work (CONP) and outcomes in terms of employee affectivity (job satisfaction) and job performance (patient care quality) (Yurek, 201x). The RRDM incorporates relevant features from four work design frameworks reported in the organizational literature: the Job Characteristic Model (JCM) developed by Hackman and Oldham (1975); the Demands-Control Model (DCM) developed by Karasek (1990); the Demands-Resources Model (DRM) developed by Demerouti, Bakker, Nachreiner, and Schaufeli (2001); and, the Job Impact Framework (JIF) developed by Grant (2007).

Although these models differ in the core components that are thought to be relevant to job satisfaction and performance, each is based on shared assumptions about work characteristics and organizational outcomes. First, each of these models is based on the premise that successful attainment of organizational goals depends on optimal alignment of the structural dimensions of the work environment with characteristics of the tasks that are performed to achieve those goals (Morgeson & Humphrey, 2006; Parker & Wall, 2001). In the absence of such alignment, critical psychological states can emerge that influence organizational outcomes. For example, the DCM and DRM specifically emphasizes imbalances between job demands and resources as factors that can lead to employee burnout, disengagement, and emotional exhaustion and, ultimately, reduced job satisfaction and performance. The JCM and JIF models, in contrast, emphasize positive work characteristics like perceived meaningfulness of the work, and perceived impact on beneficiaries as factors that can contribute to greater employee motivation and affective commitment and, ultimately, improved job satisfaction and

performance. Second, each of these models is based on the assumption that the work environment must be structured to provide the resources that are needed to effectively respond to job demands. For example, each of these models identifies decisional authority as an essential resource when the work is complex and unpredictable and work exceptions are a frequent occurrence. In this study, one specific component of the RRDM was tested to examine the relationships among both the content and context dimensions of CONP and nurse-reported patient care quality as well as both the professional and organizational dimensions of nurses' job satisfaction (Slavitt, Stamps, Piedmonte, & Haase, 1978; Schmalenberg & Kramer, 2008). In the RDDM, emotional exhaustion, as a psychological state, is specified as a mediator of the CONP-outcomes relationships.

## **Review of Literature**

### **Control over Nursing Practice**

There is emerging recognition of the inherent conceptual dualism of CONP in the nursing literature. In an early study to examine staff nurses' perceptions of decisional involvement, Alutto and Vrendenburgh (1979) found that nurses desired greater involvement over issues related to the quality of professional practice (content), design of the work area (context), and quality of support staff practice (context), but desired little or no involvement in decisions about non-nursing tasks like processing orders for lab tests and procedures. Similarly, Hinshaw, Smeltzer, and Atwood (1987) conceptualized CONP as the degree of decision-making discretion delegated to staff, measured using the degree of centralization as a structural indicator of decisional authority. These researchers found that decision-making discretion in terms of context (i.e., the practice

environment) was linked to satisfaction with the organization while decision-making discretion in terms of content (i.e., professional nursing practice) was indirectly linked to professional satisfaction and nurse-perceived quality of patient care. Further, both organizational and professional satisfaction was inversely related to turnover intentions. Other nurse researchers also have used control over care-giving (content) and unit operations (context) to examine decision-making latitude or discretion among staff nurses. Blegen et al. (1993) and Anthony (1995, 1999), for example, found that staff nurse participation in patient care decisions was greater than their participation in decisions related to the broader organizational context such as unit operations. Finally, in a recent qualitative study, nurses employed at Magnet hospitals described CONP as a group phenomenon (Kramer & Schmalenberg, 2004) with both content and context dimensions.

### **Nurse Satisfaction**

Nurse satisfaction has been conceptualized as having a professional dimension and an organizational dimension (Slavitt et al., 1978, Stamps & Piedmont, 1987). The *organizational* dimension describes activities and structures that influence satisfaction with the job itself while *professional* satisfaction describes activities and structures that influence satisfaction in terms of the ability to provide high quality patient care. In a study to predict staff nurse anticipated turnover, control over *how* work was completed influenced organizational job satisfaction but control over *what* work was completed influenced professional job satisfaction (Hinshaw et al., 1987). From the perspective of nurses as knowledge workers with a specific skill set that is based on a specialized body of knowledge, these findings suggest that structuring the work environment to support

control over the content of nursing practice in terms of effective information-processing, problem-solving, and skill discretion is associated with greater professional satisfaction. On the other hand, structuring the work environment to provide control over the context in which nurses practice is more strongly associated with job satisfaction.

CONP, job satisfaction, and work effectiveness also have been linked to structural empowerment features as described by Kanter (1976). These features include, for example, access to information, opportunities, support, and resources (Laschinger & Havens, 1996; Laschinger, Shamian, Finegan, & Almost, 2001). In one study, CONP was a significant predictor of job satisfaction at the workgroup level but was not associated with unit-level medication errors and falls (Mark, Salyer, & Wan, 2003). In a later study, however, CONP was a stronger predictor of nurse-perceived patient care quality than of job satisfaction at the work unit level (Mark et al., 2008).

### **Emotional Exhaustion**

Laschinger, Shamian, and Thomson (2001) found the relationship between organizational characteristics, a latent construct that included CONP measured with the Nurse Work Index, and patient care quality and job satisfaction were mediated by emotional exhaustion. Leiter and Laschinger (2006) developed the nurse work-life model and reported a significant relationship between staff nurse participation in hospital affairs, a conceptually congruent measure of CONP (Verran, 2008, Weston, 2006) and emotional exhaustion. Laschinger and Leiter (2006) also found that the relationship between CONP and patient safety was mediated by emotional exhaustion.

## **Methods**

### **Design**



The study is a secondary analysis of data obtained from the *Building Capacity for Better Work and Better Care* project (D.S. Havens, Principal Investigator). The purpose of the parent study was to investigate decisional involvement as perceived by staff nurses working in six community hospitals located in medically underserved counties of Pennsylvania (Havens, 2004). Although the parent study was conducted using a longitudinal design, this study is descriptive correlational using a cross-sectional survey design.

### **Procedures for Data Collection**

The parent study was a five-year longitudinal action research project aimed at shaping the nurse practice environment through enhancement of staff nurse involvement in clinical and organizational decision making, improvement of communication and collaboration among care providers and support staff, and enrichment of cultural awareness and sensitivity towards key stakeholders in the hospital care environments. Based on selection criteria identified by a group of consulting experts, the 2002 licensure renewal data collected by the PA Department of Health RN (PADOH-RN) was used to select the six hospitals that participated in this study. Selection criteria included hospitals that (a) had an operating bed size greater than 100; and, (b) were situated in a market environment that was relatively free of competition.

On-site study coordinators facilitated data collection at each site. Staff nurses were asked to complete a series of questionnaires during the parent study. For this study, however, data from the first wave of data collection were used. The nurse survey used for this data collection point included items about staff nurses' demographic characteristics, career and job satisfaction, emotional exhaustion (one of three

components of burnout), actual and preferred decisional involvement related to both the content and context of nurse practice, characteristics of the work environment, and perceptions of patient care quality.

### **Sample**

A total of 1,278 nurse respondents returned surveys during the first wave of data collection, a response rate of 76.7%. Although group membership greater than or equal to 40% is recommended for the aggregation of individual data to a macro level (Kramer, Schmalenberg, Brewer, Verran, & Keller-Unger, 2009) recent analysis of group-level phenomenon report group membership between 25-35% (Leveck & Jones, 1997; Schmalenberg & Kramer, 2008; Weston, 2006). Work units with membership less than 36% were removed from the analysis while three work units with membership greater than 36% were included due to the small number of 81 work groups. A final sample of 1120 surveys was used in this analysis, a response rate of 67.3%. According to Kline (1998), surveys in which less than 10% of the data are missing can be described as data that are missing at random (MAR). Review of the dataset for this study indicated no evidence of a systematic pattern of missing data, suggesting that MAR accounted for item non-responses (Rubin, 1987). For this reason, multiple imputation procedures were used to replace missing values for individual cases. A vector of covariates was used in the imputation process that included age, experience, tenure, career satisfaction, and education.

The average age of the staff nurses in this study was 42.3 years, with 17% less than 30 years of age, 61% between the ages of 30-50 years, and 22% who reported their age as 51 years or higher. Consistent with the distribution for age, the typical nurse in

this study was very experienced in nursing, with 64% who reported 10 to 20 years of experience, 35% who reported more than 20 years of experience, and 23% who reported less than 10 years of nursing experience. Educational preparation in nursing included the Associate Degree (33%), Diploma (31%) and baccalaureate degree (28%). Eight percent of the sample held either a Masters of Science (MSN) or Doctorate in Philosophy (PhD) degree.

The sample included primarily staff nurses who were employed full time (73%). Nurses in this sample worked on a medical/surgical unit (18%), an obstetrics unit (14%) or in an intensive care unit (11%), surgery (11%), or the emergency department (11%). The remaining nurses worked on units described as ambulatory care, pediatrics, psychiatry, rehabilitation, skilled nursing, and step-down (35%).

### **Measurement of Key Study Variables**

**Control Over Nursing Practice.** Control over nursing practice was measured using the Decisional Involvement Scale (DIS) (Havens & Vasey, 2003; 2005). The DIS was chosen because it has been described as a conceptually congruent measure of control over nursing practice (Verran, 2008; Weston, 2009). Further, Weston (2006) reported that the DIS demonstrated positive associations with other measures of CONP like the CONP Scale developed by Gerber, Murdaugh, Verran, and Milton (1990) and the Nurse Participation in Hospital Affairs subscale of the Practice Environment Scale - Nurse Work Index (Lake, 2002).

Items on the DIS ask nurses to report both perceived and preferred levels of decisional involvement related to six critical dimensions of the practice environment and work of nurses: (a) unit staffing and scheduling (2 items,  $\alpha = .67$ ), (b) quality of

professional practice (4 items,  $\alpha = .81$ ), (c) professional recruitment (3 items,  $\alpha = .84$ ), (d) unit governance and leadership (6 items,  $\alpha = .83$ ), (e) quality of support staff practice (3 items,  $\alpha = .85$ ), and (f) clinical/liaison activities (3 items,  $\alpha = .71$ ) (Havens & Vasey, 2003; 2005). Items are rated using a 5-point Likert-type format with anchors that range from decisional involvement limited to administration/management only (1) to decisional involvement limited to staff nurses only (5). Higher scores indicate greater staff nurse decisional involvement, mid-range scores indicate that decision making is shared, and lower scores indicate little to no staff nurse involvement in decision-making (Havens & Vasey, 2003). For the purposes of this study, only staff nurse perceptions about actual decision involvement were used.

In a recent study using confirmatory factor analysis, Yurek (201x) provided empirical validation of the DIS as a measure of both control over the content and context of nursing practice. Findings from this analysis indicated that the three subscales were indicative of control over the content of nursing practice. These subscales address the development of practice standards, staffing and scheduling demands, and clinical liaison activities and the items from these subscales focus on the cognitive, social, and relational activities that govern patient care quality. DIS subscales that address the governing structures and coordinating systems that influence patient care delivery were identified as indicative of control over the context of nursing practice. These subscales represent the selection of competent peers, development and monitoring of support staff and practice, and management and leadership support.

**Emotional Exhaustion.** Emotional Exhaustion (EE) was measured using eight items from the Maslach Burnout Inventory - Human Service Scale (Maslach, Jackson, &

Leiter, 1996). These items assess feelings of being emotionally overextended and exhausted by one's work. Items are scored using a 7-point Likert response format with options that range from never (1) to every day (7). Higher scores are indicative of greater emotional exhaustion. In previous studies, a Cronbach's alpha of 0.90 has been reported for the emotional exhaustion subscale (Maslach, Jackson, & Leiter, 1996).

**Desired outcomes.** Staff nurse perceptions of job satisfaction and patient care quality are used as measures for desired organizational outcome. The use of global single-item instruments required nurse participants to consider all aspects of patient care quality and job satisfaction in accordance with their own values and the situation at hand (Youngblut & Casper, 1993). Additionally, the use of single-item measures is consistent with previous nursing research (Aiken, Clarke, & Sloane, 2002; Rafferty, 2001; Ulrich et al., 2006) and congruent with nursing's support of individualism. Hence, neither reliability estimates are reported for the dependent variables.

**Job Satisfaction (JS).** Job satisfaction was measured using the following item: "How satisfied are you with your current primary job?" Response options ranged from very dissatisfied (1) to very satisfied (4), with higher scores indicated greater satisfaction.

**Patient Care Quality.** Nurse-reported patient care quality was measured using the following single item: "In general, how would you describe the quality of nursing care delivered to patients on your unit?" Response options ranged from excellent (1) to poor (4). Responses to this item were reverse coded so higher scores are indicative of high quality of patient care.

## **Data Analysis**

**Aggregation to the Group-Level.** Prior to examination of CONP as a group-level predictor of job satisfaction and perceived patient care quality, data from individual staff nurses were aggregated to achieve group-level measurement. Justification for data aggregation was based on evidence of within-group agreement in CONP scores using the  $(Rwg_{[j]})$  (James, Demoree, & Wolf, 1984). The results for each of the constructs used in the analysis are depicted in Table 1. Within-group agreement for both control over the content and context of nursing practice was examined. The value of the  $Rwg$  for control over the content of nursing practice was  $.88_{(81 \text{ work groups})}$ . The value of the  $Rwg$  for control over the context of nursing practice was  $.93_{(81 \text{ work groups})}$ . These values exceed the minimum criterion of  $.70$  needed to justify data aggregation.

**Model Testing.** Model testing was conducted using SAS 9.2. Prior to model testing, the assumptions underlying the statistical approaches used to analyze these data were evaluated using regression diagnostics. Specifically, data were evaluated for outliers and multicollinearity. Outliers also were evaluated with regression diagnostics for leverage, discrepancy and influence. Multicollinearity was evaluated using tolerance statistics, variation inflation factors, and condition indices. Regression diagnostics for outliers and multicollinearity were within acceptable ranges.

Data analyzed in this study were nested both at the individual and workgroup level, meaning that individual nurses were nested or clustered within nursing units and nursing units were nested or clustered within hospitals. For this reason, relationships among content and context dimensions of CONP and nurse perceptions of job satisfaction and patient care quality were examined using Hierarchical Linear Modeling (HLM) which controls for the effect of data clustering. First, CONP content and context

dimensions were separately evaluated as group-level predictors of job satisfaction and patient care quality. Following this analysis, an additional analysis using a 2-1-1 multilevel mediation model was performed to evaluate the influence of emotional exhaustion as a mediator of the CONP-desired outcome relationships (Zhang, Zyphor, & Preacher, 2008). This approach uses group-mean centering with the addition of the group-mean identified at Level – 2 to correct for potential confounded estimates of the mediation effect in hierarchical linear models (HLM) (Klein & Kozlowski, 2000). Third, Baron and Kinney’s (1989) approach was used to identify the presence of mediation. Finally, Sobel’s Test for mediation was used to determine whether the indirect effect of the independent variable on the dependent variable through the mediator was statistically significant. Since only one potential mediator (e.g., emotional exhaustion) was examined in this study, the product of the coefficients of the two pathways examining the direct effects between CONP and patient care quality and the indirect effects of control between emotional exhaustion and patient care quality was used to provide a 95% confidence interval of the statistical significance of the mediation effect (McKinnon, Fritz, Williams, & Lockwood, 2007; Zhang et al., 2008).

## **Results**

### **Group-Level of Analysis**

**Control over the content of nursing practice.** The effects of CONP for the content dimension on perceived patient care quality and job satisfaction were small but positive and statistically significant. For every unit increase in CONP-content, perceived patient care quality increased 0.32. Similarly for every unit increase in CONP-content, job satisfaction increased 0.20.

**Control over the context of nursing practice.** The relationship between CONP-context as a level-2 predictor of job satisfaction and patient care quality was not statistically significant. Therefore, control over the content of nursing practice was a stronger level-2 predictor of job satisfaction and patient care quality than was control over the context of nursing practice. Comparable to the findings from previous studies, these findings suggested that the relationship between control over the content of nursing practice and staff nurse reports of patient care quality was stronger than the relationship between control over the context of nursing practice and staff nurse reports of patient care quality.

### **Multilevel Mediation Analysis**

**CONP-content and patient care quality.** Using a 2-1-1 cross-level mediation model, emotional exhaustion was evaluated as a potential level-1 (individual) mediator of the relationship between CONP-content (level-2 predictor) and patient care quality (level-1 outcome). Based on Baron and Kinney's (1986) criteria for mediation, emotional exhaustion was found to partially mediate the relationship between CONP-content and patient care quality. The effect of control over the content of nursing practice on patient care quality after controlling for emotional exhaustion was significantly reduced from .32 to .19, ( $t(81)=2.06$ ,  $p < .05$ ). As expected, an inverse relationship was found between emotional exhaustion and patient care quality. For every unit increase in emotional exhaustion, the average patient care quality score at the workgroup level significantly decreased by 0.05 units ( $t(1035)=-7.02$ ,  $p < .01$ ). Hence, content-CONP influenced individual perceptions of emotional exhaustion, which, in turn, affected staff nurse reports of patient care quality.



**CONP-content and job satisfaction.** The same approach was used to evaluate the content dimension of CONP-job satisfaction relationship. Emotional exhaustion was found to partially mediate the relationship between CONP-content and job satisfaction as well. The effect of control over the content of nursing practice on job satisfaction after controlling for emotional exhaustion was significantly reduced from .20 to .11, ( $t(81)=2.06, p < .05$ ). As expected, an inverse relationship was found between emotional exhaustion and patient care quality. For every unit increase in emotional exhaustion, the average patient care quality score at the workgroup level significantly decreased by 0.03 units ( $t(1035)=-6.29, p < .01$ ). Hence, content-CONP influenced individual perceptions of emotional exhaustion, which, in turn, affected staff nurse reports of job satisfaction.

**CONP-context and patient care quality and job satisfaction.** The mediation analysis at the group-level failed to support CONP-context as a predictor of patient care quality and job satisfaction. Hence emotional exhaustion as a mediator of the context dimension of CONP- job satisfaction relationship also failed (Baron & Kinney, 1986) at the group-level of analysis.

#### **The Sobel Test for Indirect Effect**

The indirect effect of emotional exhaustion as a mediator on the CONP-content-patient care quality relationship was further tested using Sobel's test for indirect effect. Using Preacher's (2006) web-based calculator, the indirect effect of content-CONP on patient care quality mediated by emotional exhaustion was .13 and statistically significant with a Sobel test statistic of 2.21,  $p < .03$ . The PROCCLIN program was used to calculate a more precise confidence interval for the indirect effect because assumptions based on a symmetrical product distribution and normal theory is incorrect (MacKinnon,

Lockwood, & Warsi, 2004). Hence, the asymmetric distribution of the product confidence interval has more power and a more accurate Type I error rate (MacKinnon et al., 2007). The 95% CI [0.023, 0.26] of indirect effect of the content-patient care quality relationship. Therefore, the total effect of content-CONP on patient care quality is  $.32 + .13 = .45$ .

### **Discussion**

Findings from this study suggest that different dimensions of CONP may be differentially associated with organizational outcomes. The results from this analysis suggest that content-CONP is a stronger predictor of patient care quality than job satisfaction at the work unit level of analysis. This is congruent with previous research reported by Blegen and colleagues (1993) and Anthony (1995). For example, staff nurses reported greater decision-making preferences and behaviors related to care quality than unit operations. This analysis also supports the notion advanced by Kramer & Schmalenberg (2004) that CONP is a group phenomenon, in this case at the work unit.

Further analysis of the content dimension of CONP-patient care quality relationship demonstrated significant indirect effects associated with emotional exhaustion as a mediator. Greater content control is also associated with lower reports of emotional exhaustion. Hence, greater decision-latitude in problem-solving, information-processing, and specialization may also improve staff nurse perceptions of patient care quality.

These findings suggest that organizations may benefit from aligning their structural control mechanisms in ways that support nurses' control over the content of nursing practice. This is particularly important since the work of nurses imposes

cognitive demands that must be matched with the decisional authority that is needed to successfully meet those demands. In the absence of such resources, the vigor and dedication of staff nurses can erode, leading to decreased job satisfaction and performance, factors that increase the vulnerability of the care environment in terms of potential threats to patient care quality and safety. Therefore, creating governing structures and coordinating systems that are adequately aligned with the work that nurses do can diminishes exhaustion and cynicism among the nursing staff and promotes healthier work environments for nurses and safer care environments for patients.

However, the relationship between the context dimension of CONP and job satisfaction was not a significant relationship at the work-unit level of analysis. The effect of governing structures that affect organizational job satisfaction may be stronger predictors at the level of the organization. For example, formalization and standardization are structural dimensions of organization that may impose greater vertical decision-making controls from hierarchical positions to the work unit. Top down processes are more characteristic of compilation processes that differ at various levels of analysis where composition processes are essentially the same across levels. Sample size prohibited analysis of disparate dimensions of CONP at the organization level.

### **Limitations**

The proportion of group members for each nursing unit who completed a study questionnaire was more than 36%. Although the extent to which participants were actually representative of the entire workgroup on each unit is unclear, it is possible that perceptions about control over the content and context of nursing practice may have been under-reported in this study. However, the potential effect of this limitation is seen as

minimal since it is not uncommon to analyze group-level variables using data obtained from fewer than 50% of all workgroup members (Leveck & Jones, 1996; Kramer & Schmalenberg, 2004; Verran, Mark & Lamb, 1996; Weston, 2006).

Participants in this study were self-selected which may have adversely affected parameter estimates. However, in a previous study, the effects of self-selection bias were found to be minimal or absent in these data (Yurek, Vasey, & Havens, 2008).

Finally, the ability to generalize these findings beyond staff nurses who work in hospitals located in medically underserved counties in Pennsylvania is limited. In particular, generalizability of these findings to the practice environment of urban hospitals or academic medical centers may be inappropriate. Finally, all variables were measured using self-administered survey questionnaires. Therefore, common methods variance poses a threat to the validity of these findings. However, employee self-reports have long been recognized as one of the best sources of information about the day-to-day work environment (Hackman & Oldham, 1976).

### **Implications for Future Research**

Continued investigation of CONP using the nursing workgroup as the unit of analysis is warranted (Kramer et al., 2008; Weston, 2009; Gerber et al., 1990; Havens & Vasey, 2003, 2005). Further research to examine CONP as a two-dimensional construct also is warranted. In particular, there is a need to better understand the extent to which antecedent and outcomes variables are differentially associated with the two dimensions of CONP. There may, in fact, be structural control and coordination approaches that enhance control over the content of nursing practice and others that promote control over the context of nursing practice. Understanding antecedent factors that are relevant to

CONP-content and those that are relevant to CONP-context can contribute to the development of work design initiatives that have greater potential to be successful in creating a professional practice environment for nurses.

Continued testing of the Relational Resource Distribution Model to explore work characteristics that are relevant to nurses' control over the content and context dimensions of nursing practice are needed. In particular, the Relational Research Distribution Model (Yurek, 201x) and the Job Demands-Resources Model (Demerouti et al., 2001) can be used to examine staff nurses' well-being as a function of working conditions broadly defined as job demands and job resources. Additionally, these models can be used to identify differences in the outcome variables that are related to specific dimensions of CONP.

Along with these studies, it may be beneficial to focus on positive psychological states that promote worker motivation, commitment, satisfaction, and performance as opposed to negative psychological states like burnout, job stress, and emotional exhaustion that hamper the attainment of positive organization outcomes. This approach can be especially useful in understanding how to design work in ways that create safer care environments for patients and healthier work environments for nurses.

Finally, use of the Relational Resource Distribution Model to investigate work behaviors that are associated with control over the content and context dimensions of nursing practice are needed. Such studies have the potential to enhance our understanding of CONP as a factor that contributes to the explanation of better patient outcomes.

## **Conclusions**

The Relational Resource Distribution Model was used to develop a group-level model that was tested to examine the relationship between CONP as a structural design feature of nurses' practice environment and nurses' job satisfaction and perceived quality of nursing care. Additionally, emotional exhaustion was examined as a negative psychological state that mediates the CONP-outcomes relationship. The major finding suggests that, compared to job satisfaction, the content dimension of CONP was a stronger predictor of patient care quality at the work-group unit of analysis. The findings from this study provide additional support for CONP as a two-dimensional construct and for the Decisional Involvement Scale (Havens & Vasey, 2003, 2005) as a conceptually valid measure of these dimensions.

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Table 1.

Aggregation Analysis:  $Rwg_{(j)}$  for measure at designated LOA

Measure	$Rwg_{(81 \text{ work groups})}$	$ICC_{(1)}$	Cronbach $\alpha$
Content-CONP	.88	.71	.80
Context-CONP	.93	.83	.90
Emotional Exhaustion	.98	LIP	.90
Patient Care Quality		.77	SIM
Job Satisfaction		.68	SIM

*Notes.*  $Rwg_{(86)}$  = Within-group Agreement for 86 work units of level-2 predictors;  $ICC_{(1)}$  = Interclass Correlations of Level-2 predictors;  $\alpha$  = Cronbach Alpha Reliability Estimate; LIP = Level-1 predictor; PCQ = Patient Care Quality; JS = Job Satisfaction; SIM = Single-item measure

Table 2

Relationship between Criterion and Dimension of CONP

Criterion	Predictor	Unstandardized b	Standard Error	t-value	p
Care Quality	Content	.29	.10	2.82	< .01
	Context	.32	.22	1.45	NS
Job Satisfaction	Content	.18	.06	2.87	< .01
	Context	.18	.14	1.29	NS

*Note.* NS = Not Significant

## **Chapter 7**

### **Dissertation Summary**

The original Magnet hospital study, published in 1983, identified the importance of the practice environment as essential to the ability of hospitals to recruit and retain professional nurses. According to this study, nurses' work should be structured in ways that are conducive to a professional practice model that supports nurses' participation in decision-making and control over nursing practice (CONP). Since publication of this study, numerous strategies to improve the nursing practice environment have been developed. Yet, recent reports by the Institute of Medicine (IOM) identify the practice environment in hospitals as a continuing threat to high quality and safe patient care (Kohn, Corrigan, & Donaldson, 2000; Page, 2004).

The governing structures and operating systems that support patient care delivery play an important role in determining the quality of nursing practice in hospitals. Therefore, it is possible that the inability to consistently demonstrate optimal patient outcomes can be traced, at least partially, to a failure to align hospital governing structures and operating systems in ways that enhance higher quality and safer nursing practice (Liang, 2002; Pearson, 2005).

Greater clarity in the conceptualization of CONP is an important first step in developing design strategies in which the practice environment can be structured to successfully achieve optimal nurse and patient outcomes. Although CONP has been

conceptualized as a one-dimensional construct, there is growing recognition of an inherent *conceptual dualism* to this construct. Specifically, two complementary yet different dimensions of CONP are suggested in the nursing literature: control over the content of nursing practice and control over the context in which nurses' practice (Laschinger & Havens, 1996). The *content* dimension can be described as the scope of practice-related decisions and actions that nurses are legally authorized to enact (Laschinger & Havens, 1996; Weston, 2009). The *context* in which nurses' practice can be described as the extent to which nurses have control over unit, departmental, and organizational policies and governance structures (Kramer & Schmalenberg, 2003; Laschinger & Havens, 1996; Weston 2009).

Despite the importance of understanding the implications of control over the content and context of nursing practice, few researchers have investigated CONP as a two-dimensional construct. Further, few have examined nurse or patient outcomes that may be differentially associated with these dimensions. Therefore, the purposes of this study were to evaluate the factorial validity of the Decision Involvement Scale as a two-dimensional measure of CONP, separately examine unit-level relationships among the content and context dimensions of CONP and nurse-reported patient care quality and job satisfaction, and describe the role of emotional exhaustion as a mediator of the relationships among CONP and patient and nurse outcomes.

An investigator-developed Relational Resource Distribution Model (RRDM) was used as the overarching theoretical framework for this study. This model is based on an integration of four theoretical perspectives that are recognized as dominant paradigms for understanding work design in organizations: (a) the Job Characteristics Model by Hackman and Oldham (1975), (b) the Demands-Control Model by Karasek (1979), (c) the Job

Demands-Resources Model by Demerouti, Bakker, Nachreiner, and Schaufeli (2001), and (d) the Job Impact Framework by Grant (2007). Each of these perspectives is based on the fundamental premise that successful attainment of organizational goals depends on optimal alignment of the structural dimensions of the work environment with characteristics of the tasks that are performed to achieve those goals (Morgeson & Humphrey, 2006; Parker & Wall, 2001).

The study was conducted as a secondary analysis of data obtained from the *Building Capacity for Better Work and Better Care* project (D. S. Havens, Principal Investigator). The purpose of the parent study was to investigate decisional involvement as perceived by staff nurses working in six community hospitals located in medically underserved counties of Pennsylvania (Havens, 2004). Although the parent study was conducted using a longitudinal design, this study was descriptive correlational using a cross-sectional survey design. In total, surveys completed by 1120 RNs during the first wave of data collection in the parent study were used in this analysis

The first study purpose was addressed using scores on the Decisional Involvement Scale (DIS) (Havens & Vasey, 2005) to perform confirmatory factor analyses in which four models representing the possible dimensionality of CONP were investigated. In the best fitting structural model, the DIS subscales of clinical liaison activities, quality of professional staff practice, and unit staffing and scheduling explained the content dimension of CONP. Similarly, the DIS subscales of management and leadership support, professional recruitment, and the quality of support staff practice explained the context dimension of CONP.

The second and third study purposes were addressed using hierarchical linear modeling to examine unit-level relationships among the content and context dimensions of CONP and nurse-reported patient care quality and job satisfaction and describe the role of emotional exhaustion as a mediator of the relationships among CONP and patient and nurse outcomes. Results from this analysis suggested that content-CONP was a stronger predictor of patient care quality than of job satisfaction at the work unit level. However, the relationships among the context dimension of CONP, nurses' job satisfaction, and nurse reported patient care quality were not significant at the work-unit level. Further analysis of the content dimension of CONP-patient care quality relationship demonstrated significant indirect effects associated with emotional exhaustion as a mediator. Greater control over the content of nursing practice was associated with lower reports of emotional exhaustion.

In summary, findings from this study provide support for CONP as a two-dimensional construct and for the Decisional Involvement Scale (Havens & Vasey, 2003, 2005) as a conceptually valid measure of these dimensions. Additionally, the findings suggest that, compared to job satisfaction, the content dimension of CONP was a stronger predictor of patient care quality at the work unit level. Finally, the content-patient care quality relationship was mediated by emotional exhaustion, suggesting that organizations may benefit from aligning the practice environment in ways that support nurses' control over the content of nursing practice.

This study makes several contributions to the literature on CONP. First, CONP was measured using an existing instrument that was shown through confirmatory factor analysis to provide valid measurement for control over the content and context dimensions of nursing practice. Second, two models were separately analyzed to identify the differential effects of



CONP as a two-dimensional construct on outcomes that are relevant to nursing practice.

Third, this study provides additional support for the role of psychological states like emotional exhaustion as a mediator of the relationship between work design characteristics and desired outcomes.

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