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Nurse Manager Emotional Intelligence as a Predictor to Registered Nurse Job Satisfaction and RN Perceptions of the Practice Environment and the Relationship to Patient, Nursing and Hospital Outcomes

Jacqueline Cecilia Munro
University of South Florida, mjmunro@tampabay.rr.com

Nurse Manager Emotional Intelligence as a Predictor to Registered Nurse Job Satisfaction and RN Perceptions of the Practice Environment and the Relationship to Patient, Nursing, and Hospital Outcomes

by

Jacqueline C. Munro

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Major Professor: Cecile A. Lengacher, R.N., Ph.D.
Jeffrey Kromrey, Ph.D.
Denise J. Maguire, R.N., Ph.D.
Robyn B. Cheung, R.N., Ph.D.

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Table of Contents

List of Tables

List of Figures

Nurse Manager Emotional Intelligence as a Predictor to Registered Nurse Job Satisfaction and RN Perceptions of the Practice Environment and the Relationship to Patient, Nursing, and Hospital Outcomes

Abstract

The purpose of this study was to determine if the level of Nurse Manager (NM) emotional intelligence (EI) predicted registered nurse (RN) job satisfaction and RN perceptions of the practice environment. In addition, relationships to patient, nursing and hospital outcomes were explored. Participants included RNs (N=659) and NMs (N=38) from 53 nursing units at eight hospitals located in the southeast region of the United States. A cross-sectional, correlational research design was used to test the hypotheses. Pearson product-moment correlation coefficients, simple linear and multiple regression statistics were conducted to analyze the data. Level of NM EI had a positive, not significant relationship to RN job satisfaction ($B = 3.63$, $p<.373$) and RN perceptions of the practice environment ($B = 2.79$, $p<.189$). A direct, positive significant relationship was observed between the variables NM EI and patient satisfaction with nursing care ($B=.269$, $p<.001$). There was a positive, significant relationship noted between the variables RN job satisfaction and RN perceptions of the practice environment ($r= .762$, $p<.001$). The indirect relationships between level of NM EI and patient, nursing, and hospital outcomes were not significant. There was a direct significant, positive relationship noted between the variables RN perceptions of the practice environment and patient satisfaction with nursing care ($p<.044$). In addition, the interaction between RN job satisfaction and RN hours of care had a positive, significant relationship with unit

level pressure ulcer rates ($b = .127$, $p<.033$). This study indicated that units with higher RN hours of care have increased pressure ulcer rates. In addition, results illustrate a marked increase in pressure ulcer rates on those units with higher levels of job satisfaction. In this study pressure ulcer rates depended on the level of RN job satisfaction. The research presented is one of the first studies that explored the relationships among the variables: emotional intelligence, job satisfaction, perceptions of the practice environment, and the dependent variables fall rates, pressure ulcer rates, medication error rates, patient and physician satisfaction with nursing care, and nursing turnover and vacancy rates.

Chapter One

Introduction

Nurse leadership has been identified as a contributing factor to Registered Nurse (RN) job satisfaction and perceptions of the practice environment. Sherman and Pross (2010) cited that strong nursing leadership at the unit level is critical for the development of healthy practice environments. The literature reveals that a leaders attributes are key factors that influence nursing job satisfaction and the practice environment (Agency Healthcare Research and Quality [AHRQ], 2004; Boyle, Bott, Hansen, Woods, & Taunton, 1999; Cummings, Hayduk, & Estabrooks, 2005; Institute of Medicine [IOM], 2004; Swearingen, 2004). In addition, empirical evidence suggests a relationship between nursing leadership and nursing care, the practice environment and quality patient care outcomes (Scott, Sochalski, & Aiken, 1999; Havens & Aiken, 1999). Emotional Intelligence has been described as an ability that has linkages to transformational leadership (Skinner & Spurgeon, 2005; Gardner & Stough, 2002; Barbuto & Burbach, 2006; Mandell & Pherwani, 2003; Downey et al, 2006). Further research is needed to determine if emotional intelligence is a viable ability to develop that could enhance one's leadership potential. This study explored the relationship between NM EI and the effect on RN job satisfaction and RN perceptions of the practice environment and the relationship to patient, nursing and hospital outcomes.

Leadership Attributes

Fletcher (2001) reported that a manager's leadership attributes can influence a team member's job satisfaction and intent to stay. Boyle, Bott, Hansen, Woods and Taunton (1999) confirmed this position when they examined the effect of a nurse manager's characteristics of power, influence and leadership style on a critical care nurse's intent to stay. Boyle et al. (1999) found that a manager's position power and influence over work coordination was directly related to a nurses' intent to stay. They also found a direct link between nurse job satisfaction and intent to stay at the institution (Boyle, Bott, Hansen, Woods & Taunton, 1999). Werberg (2010) conducted a review of research literature to ascertain the impact of transformational nursing leadership on job satisfaction and burnout. In a review of 7 articles, Werberg (2010) found that transformational leadership is significantly related to increased staff nurse job satisfaction, increased staff well-being and decreased burnout. Werberg (2010) commented that transformational leadership is a solution for the improvement of the nursing work culture. In addition, Swearingen (2004) evaluated whether nursing leadership characteristics affect job satisfaction and retention of baby boomer and generation x nurses. She noted that nursing leadership characteristics do have an impact on nurses' job satisfaction and intent to stay. Further, the more positively the nurses perceive their nurse supervisor's leadership characteristics, the greater the job satisfaction and intent to stay in the organization (Swearingen, 2004).

Emotional Intelligence and Leadership

Other qualities that describe effective leadership include self-awareness, self-management and social skills. In aggregate, these skills describe emotional intelligence

(EI) (Snow, 2001). Emotional intelligence is the synthesis of two known concepts, emotion and intelligence, and is characterized as a form of social intelligence (SI) (Schulze, Roberts, Zeidner, & Matthews, 2005; Emotional Intelligence Consortium, 2007; Mayer & Salovey, 1997). The concept EI has been described as having common characteristics to Gardner's (1983) theory of multiple intelligences, in particular the domain of intrapersonal intelligence (Mayer & Salovey, 1993). For the purposes of this research study, the Mayer and Salovey (1997) model will be used to further define the concept EI. Mayer and Salovey (1997) define emotional intelligence as:

> the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth. (p. 10)

With increasing popularity and interest in EI, there is controversy regarding whether it is a viable construct. Many have criticized Mayer and Salovey (1990) for connecting the concepts emotion and intelligence to create a new construct. Concerns raised by many researchers include (a) the belief that EI is a restatement of social intelligence (SI), first introduced by E.L. Thorndike in 1920 (Locke, 2005; Mayer & Salovey, 1993; Thorndike, 1920), (b) the perception that EI is an accrual of personality traits (Daus & Ashkanasay, 2003), (c) the dilemma of describing emotions as an ability (Mayer & Salovey, 1993), (d) the changing of the EI definition and difficulty with measuring the construct (Locke, 2005; Daus & Ashkanasay, 2003), and (e) the management of one's emotions does not require an extraordinary type or level of intelligence (Locke, 2005). In an integrative review related to EI and nursing leadership,

Akerjordet and Severinsson (2010, p. 372) comment, "given the lack of consensus on the phenomenon, it is essential for nurse leaders to have in-depth knowledge of EI and its scientific critique when integrating the concept into nursing research, education and practical settings". Even with the controversy surrounding the phenomenon EI, Akerjordet and Severinsson (2010, p. 372) remark that EI has the potential to "contribute to the development of professional identity in nursing leadership, leading to improved integration and conscious use of the theories in practice, thus promoting more evidence-based nursing".

George (2000) proposed that EI plays a dominant role in leadership effectiveness because of the emotion - laden dynamics in the practice environment. Leaders with high levels of EI are cognizant of moods and feelings and can manage situations to generate positive improvements in the organization (George, 2000). In addition, leaders with high levels of EI are able to generate enthusiasm, commitment, cooperation and trust via their ability to develop interpersonal relationships (George, 2000). Historically in the nursing industry, leadership roles are filled based on being a good clinician and having intellectual abilities (Snow, 2001). Although these skills are essential for good performance, the skill suggested having greater importance is EI (Goleman, 1998; Macaleer & Shannon, 2002; Bohrer, 2007). Piper (2005) stated that leaders need both cognitive ability and EI to manage the present day complex healthcare delivery system. Awareness of the principles of EI and its proposed benefits in leading teams has gained momentum in the business and management domains. At present, there is a gap in nursing knowledge and research related to nursing leadership and EI (Feather, 2009; Smith, Profetto-McGrath & Cummings, 2009). In their integrative literature review of

emotional intelligence and nursing, Smith et al. (2009) cited that empiric research related to the study of emotional intelligence and nursing is in its infancy and suggest further research examining the way emotions, nurse and environment associate with emotionally intelligent nurse leaders.

For the past several years, there have been numerous studies examining the influence of EI on charismatic leadership and performance. Pearson et al., (2007) conducted a comprehensive systematic analysis of 48 quantitative and qualitative nursing research studies to determine the key leadership attributes that foster a supportive practice environment. After synthesizing the literature, they found evidence that suggests leaders with EI traits are more likely to have a positive impact on their team members and organizational outcomes. In addition, leaders with higher levels of EI have the ability to motivate, communicate and manage conflict (Pearson et al., 2007).

Practice Environment

The practice environment is made up of a variety of factors that include, but are not limited to the following variables: (a) job satisfaction, (b) supportive management, staffing, (c) collaborative relationships, and (d) autonomy (American Association of Critical Care Nurses [AACN], 2005; Sleutel, 2000). Sleutel (2000) cited that in the nursing domain the most common term used to describe the organizational culture or climate is work environment or practice environment. For the purposes of this study, the term practice environment will be used. The nursing practice environment is a concept with theoretical foundations in the organizational, occupational, and work domains. The practice environment is described as a manager's approach to problem resolution in the organizational work environment and is defined as the "organizational characteristics of a

work setting that facilitate or constrain professional nursing practice" (Lake, 2002, p. 178).

Aiken et al., (2001) conducted a study in 711 hospitals in five countries from 1998-1999 to investigate perceptions of the practice environment and the quality of nursing care provided to patients. Research findings illuminated that more than 40 percent of the US nurses were dissatisfied with their jobs, which is a higher percentage as compared to other countries. Further, only 29 percent of the US nurses perceived that their "administration listens and responds to nurses' concerns" (Aiken et al., 2001, p. 47).

The American Association of Critical Care Nurses (AACN) recognized that sustaining and maintaining healthy practice environments is vital to quality patient care (AACN, 2005). In an effort to help create safe and healthy practice environments, the AACN (2005) established six guiding principles for nurse leaders to role model in their practice that include: (a) skilled communication among clinicians', (b) earnest collaboration among healthcare team members, (c) effective decision making that incorporates nursing input, (d) appropriate staffing models based on patient acuity, (e) meaningful reward and recognition of individuals, and (f) role modeling authentic nursing leadership. Other organization bodies such as the Institute of Medicine (IOM)(2004), the American Nurses Credentialing Centers (ANCC) Magnet Recognition Program, and the American Organization of Nurses Executives (AONE) acknowledged that nursing leadership is integral to the creation of a positive practice environment that promotes quality nursing care and patient safety (O'Connor, 2008). These groups espoused that nurse leaders need to adopt caring competencies that model effective

communication, relationship management and trust in order to enhance the nursing practice environment (O'Connor, 2008). Further, Vitello-Cicciu (2002, 2003) asserted that the health care setting is an emotionally ridden environment that requires nurse leaders to create and sustain positive practice environments so that nurses can cope and manage emotions to provide quality patient care.

Job Satisfaction

Job satisfaction is the level of individual positive affect or attitude towards the job or job task (Jex, 2002). Job satisfaction in nursing has been studied extensively. Blegen (1993) reviewed the literature to discern key factors that contributed to nursing job satisfaction. A meta-analysis was conducted and included 48 studies with a total of 15, 048 participants. Blegen (1993) identified 13 factors that were commonly identified as contributing to nursing job satisfaction: (a) stress (r = -.61), (b) organizational commitment (r = .53), (c) communication with supervisor (r = 0.45), (d) autonomy (r = .42),(e) recognition (r =.42), (f) routinization (r =-.41), (g) communication with peers (r=.36), (h) fairness (r=.30), (i) locus of control (r= -.28), age (r = .13) , (j) years of experience (r = .09), (k) education(r = - .07), and (l) professionalism (r = .06). In summary, there are multiple variables that influence an RNs job satisfaction. Of note, the variables with a stronger correlational relationship to job satisfaction are those related to the nursing practice environment and leadership competency (stress, organizational commitment, communication with supervisor, autonomy, recognition, routinization, communication with peers, fairness and professionalism (Blegen, 1993).

As a follow-up to Blegen's (1993) meta-analysis, Zangaro and Soeken (2007) conducted a meta-analysis of research studies conducted between 1991 and 2003 that

examined the relationships between staff nurse job satisfaction and autonomy, job stress and nurse physician collaboration. Pooled effect size results revealed the following: job stress has a negative correlation with job satisfaction (ES= -.43) and autonomy (ES = .30); and nurse-physician collaboration (ES = .37) have positive relationships with job satisfaction (Zangaroo & Soeken, 2007). Zangaro and Soeken (2007) cite the fundamental take away from their analysis is the need to improve the nursing practice environment.

Hayes, Bonner and Pryor (2010) explored the literature (from January 2004 through March 2009) to find factors that contributed to nurse job satisfaction. They identified 44 notable factors that influence nursing job satisfaction and categorized them into three themes (intra-personal, inter-personal and extra-personal). Hayes et al. (2010) describe intra-personal factors as those components that define the individual such as age, education preparation and coping skills. Inter-personal factors that contributed to job satisfaction are autonomy, providing direct patient care, professional relationships, work scheduling, leadership and professional pride. Extra-personal factors that contributed to job satisfaction are defined as pay, organizational policies and procedures and having the resources and tools necessary to get the job done (Hayes et al., 2010). Hayes et al. (2010) relayed that nurse leaders play a critical role in influencing many of these factors, hence the leader can impact a nurses' job satisfaction.

Medical Errors

In 1999, Institute of Medicine (IOM) published a seminal piece of literature *To Err is Human: Building a Safer Health System* that clearly conveyed that the practice

environment is not safe. In this document the IOM reported that approximately 44,000 to 98,000 people die annually from preventable medical errors. Medical errors have many ramifications such as cost, damage to an organization's reputation and deterioration of the internal work culture. Further, medical errors can contribute to patient and team member dissatisfaction (IOM, 1999). There is evidence that suggests that quality of nursing care can affect patient care outcomes (IOM, 2004). The IOM (2004) clearly suggested that creating nursing practice environments that promote patient safety requires transformational leadership capable of: (a) advocating for the nursing profession, (b) redesigning patient care processes with team member involvement, (c) restructuring the physical practice environment, and (d) creating a blame-free culture.

RN Staffing

The Agency for Healthcare Research and Quality (AHRQ) (2004) reported the number of nursing hours of care or nurse staffing levels are indicative of quality care and patient safety. With nursing being a key driver to quality patient care, the IOM (2004) conducted a study to evaluate key deterrents to patient safety and potential improvements to existing nursing practice environments. Study findings confirmed that the nursing practice environment can be a major threat to patient safety. Key deterrents to patient safety in the practice environment include: (a) organizational leadership practices, (b) staffing procedures, (c) the design of the clinical environment, and (d) the organization's culture (IOM, 2004).

Statement of the Problem

Healthcare as an industry is facing challenging times with an imminent nursing

shortage, the advent of publically reporting outcomes, and proposed decreased hospital reimbursements. In order to meet these challenges, effective leadership is critical. Begun and White (2008) conveyed that the healthcare delivery system has increased in complexity and is in a constant flux, requiring nursing leaders to quickly adapt to change. Piper (2005) asserted that because of the great demands placed on the healthcare system, there needs to be a new breed of leader that has passion and the ability to motivate team members and the organization to meet customer needs. Further, it is necessary to have a leader able to influence groups, inspire and motivate team members and strength to face new adversities and challenges (Begun & White, 2008).

An attribute required to accomplish these tasks is the ability to manage interpersonal relationships. There are numerous articles and empirical studies in the psychology and business domains that described EI as an attribute with positive implications for team member success and relationship management (Cummings, Hayduk, & Estabrooks, 2005; Rego, Sousa, Pina e Cunha, Correia & Saur-Amaral, 2007; Skinner & Spurgeon, 2005; Mandell & Pherwani, 2003; Gardner & Stough, 2002). Although there is a demonstrated link between EI and successful leadership, few scientific studies in the nursing domain have analyzed the relationship between nurse manager EI and RN job satisfaction and nurse manager EI and RN perceptions of their practice environment. Hence, this study examined these relationships.

Purpose of the Study

The purpose of this study was to determine if the level of Nurse Manager EI predicts RN job satisfaction and RN perceptions of the practice environment. In addition,

this study determined if NM EI, RN job satisfaction and RN perceptions of the practice environment were related to patient, nursing and hospital outcomes. Further, the variable RN hours of care examined on the relationships between RN job satisfaction and RN perceptions of the practice environment with the dependent variables patient, nursing and hospital outcomes.

Aims and Research Hypotheses

This study had three aims as described below, followed by hypotheses for each.

Aim 1: The first aim of this study was to determine if the level of nurse manager EI predicts RN job satisfaction and RN perceptions of the practice environment.

The following hypothesis was tested:

H1: There is a direct, significant positive relationship between the level of NM EI and the level of RN job satisfaction and RN perceptions of the practice environment.

Aim 2: The second aim was to determine if EI, RN job satisfaction and RN perceptions of the practice environment have an indirect and direct (respectively) relationship to patient outcomes (fall, hospital acquired pressure ulcer and medication error rates), nursing outcomes (patient and physician satisfaction) and hospital outcomes (nursing turnover and vacancy rates). The following hypothesis was tested:

H1: There is an indirect, significant inverse relationship between level of NM EI via the mediating variables RN job satisfaction and RN perceptions of the practice environment and patient and hospital outcomes; and an indirect, significant positive relationship between level of NM EI via the mediating variables RN job satisfaction and RN perceptions of the practice environment

and nursing outcomes.

H2: There is a direct, significant inverse relationship between level of RN job satisfaction and fall, hospital-acquired pressure ulcer and medication error rates.

H3: There is a direct, significant inverse relationship between perceptions of the practice environment and fall, hospital-acquired pressure ulcer and medication error rates.

H4: There is a direct, significant positive relationship between RN job satisfaction and level of patient and physician satisfaction.

H5: There is a direct, significant positive relationship between RN perceptions of the practice environment and patient and physician satisfaction.

H6: There is a direct, significant inverse relationship between RN job satisfaction and nurse turnover and vacancy rates.

H7: There is a direct, significant inverse relationship between RN perceptions of the practice environment and nurse turnover and vacancy rates.

Aim 3: The final aim was to investigate the influence of the moderating variable RN hours of care and its effect on the relationship between RN job satisfaction and RN perceptions of the practice environment with the dependent variables: (a) patient outcomes (fall, hospital-acquired pressure ulcers, and medication error rates); (b) nursing outcomes (patient and physician satisfaction); and (c) hospital outcomes (nurse turnover and vacancy rates). The following hypotheses were tested:

H1: RN hours of care significantly affects the relationship between RN job satisfaction, patient, nursing and hospital outcomes.

H2: RN hours of care significantly influences the relationship between RN

perceptions of the practice environment, patient, nursing and hospital outcomes.

Definition of Terms

For the purpose of this study, the following definitions were used.

1. Emotional Intelligence: The ability to accurately perceive one's own and other's emotions, use emotions to promote thinking, understand emotion to comprehend meaning and manage one's own and other's emotions (Mayer & Salovey, 1997; Emotional Intelligence Consortium, 2007).

2. Practice Environment: A manager's approach to problem resolution in the organizational work environment and is defined as the "organizational characteristics of a work setting that facilitate or constrain professional nursing practice" (Lake, 2002, p. 178).

3. Nursing Hours of Care: Nursing hours of care is defined as the number of productive (excluding non-productive education, in-service, vacation and sick time) registered nurse hours worked to provide direct patient care (Donaldson, Brown, Aydin, Bolton, & Rutledge, 2005).

4. Medication Error: "A medication error is any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professional, patient, or consumer. Such events may be related to professional practice, health care products, procedures, and systems, including prescribing; order communication; product labeling, packaging and nomenclature; compounding; dispensing; distribution; administration; education; monitoring; and use" (National Coordinating Council for Medication Error Reporting and Prevention, 2011, "What is a medication error?, para.1). In addition, the study sites (2010) included in the

definition that a medication error ranges from circumstances that occur that potentially cause an error (a near miss) to an error that has resulted in a patient death.

5. Fall rate: A fall reflects an unintentional descent to the ground, floor, or other lower level with or without injury to the patient (Donaldson, Brown, Aydin, Bolton & Rutledge, 2005; National Database Nursing Quality Indicators [NDNQI], 2010).

6. Pressure ulcer rate: "A localized injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure, or pressure in combination with shear." (National Database Nursing Quality Indicators [NDNQI], p. 80, 2010) and per the study sites (2010) not documented with-in the first twenty-four hours.

7. Job Satisfaction: Job Satisfaction is the level of positive affect or attitude towards the job or job task (Jex, 2002).

8. Patient Satisfaction: Patient satisfaction is defined by patient responses to questions from the study sites patient satisfaction surveys conducted by Avatar International, LLC. (Study Sites, personal communication, September, 2010) The "nursing care score" is defined specifically by the study sites (2010) as: (a) "I was given explanations of my daily routine by the nursing staff" and (b) "the nursing staff regularly asked me about my comfort, pain and need to use the bathroom" (Study Sites, 2010).

9. Physician Satisfaction: Physician satisfaction at the study sites (2010) is defined as satisfaction with staff unit quality and is described by the following questions: (a) response to physicians, (b) technical competency, (c) communication with physician, and (d) staff supply (Study Sites, personal communication, February, 2010).

10. Turnover rate: Turnover is defined as the number of registered nurses that relinquish employment (leave or transfer) from their nursing unit (Jones, 1990; Study Sites, 2010).

11. Vacancy rate: A vacancy reflects the number of unfilled registered nurse core positions on a nursing unit (Study Sites, 2010).

Delimitations

The sample includes both nurse managers and registered nurses. Inclusion parameters for the nurse manager participants:

1. Must supervise registered nurses; and
2. Manage a medical-surgical, telemetry, labor and delivery, pediatric, neonatal or critical care nursing unit

Inclusion criteria for the registered nurse participants:

1. Part-time or full-time core status team members. Rousseau and Libuser (1997) describe core team members as individuals that the organization has invested in developing their skills and expertise in order to create a competitive advantage;
2. Spend 50% or greater of their time providing direct patient care; and
3. Tenure on the nursing unit is greater than 3 months

Significance of Study

The philosophy and approach to the provision of health care has changed to reflect a more service focused and team centered culture. This change requires a new set of leadership attributes that resemble a more democratic and humanistic approach to managing teams and organizations (Kerfoot, 1996; Vitello-Cicciu, 2002). Nurse leaders that adopt and enhance their emotional intelligence competencies can help support and change the health care paradigm. This author proposes that nurse leaders equipped with EI abilities effectively assess the social environment, analyze the emotions and climate,

and respond to these emotions in a professional, safe, and thoughtful manner. These behaviors enhance trusting collegial relationships among nursing team members and leaders, thus can improve job satisfaction, retention, and the practice environment. To validate these propositions, further scientific research must be conducted in the nursing domain; such as evaluating whether the construct EI is a predictor to RN job satisfaction and RN perceptions of the practice environment and the relationship to patient, hospital and nursing outcomes.

Other gaps in the nursing literature, relative to EI, include educational interventions in the leadership arena to enhance attributes to improve team member relationships and the practice environment. This research is significant, because if EI is a predictor to RN job satisfaction and RN perceptions of the practice environment, then an intervention can be performed to help NMs improve their EI levels, thus impacting RN satisfaction and intent to stay in the practice environment. In addition, if nurses with higher levels of job satisfaction and positive perceptions of their practice environment demonstrate improved performance on patient outcomes, nursing and hospital outcomes; this research could possibly have a positive impact on improving patient safety via the reduction in medical errors.

Chapter Two

Review of Literature

This chapter first presents a review of the empirical literature related to emotional intelligence as it pertains to the practice environment and leadership and RN perceptions of the practice environment and RN job satisfaction and the dependent variables patient outcomes (falls, hospital-acquired pressure ulcers and medication error rates), nurse outcomes (patient and physician satisfaction) and hospital outcomes (nurse turnover and vacancy rates). Empirical literature is presented pertaining to the moderating variable RN hours of care and its effect on the relationship between RN job satisfaction and RN perceptions of the practice environment, and the dependent variables: (a) patient outcomes (falls, hospital-acquired pressure ulcers and medication error rates), (b) nurse outcomes (patient and physician satisfaction), and (c) hospital outcomes (nurse turnover and vacancy rates). At the end of this section, a summary of the empirical literature is presented.

Theoretical Framework

This study is guided by a logic model integrating the philosophical approach to quality in health care authored by Dr. Avedis Donabedian (1980, 1996). Donabedian (1980) believes that there are three approaches to quality assessment: structure, process and outcome. The Structure, Outcome and Process methodology is based on the "fundamental functional relationships among the three elements" that can be analyzed to

determine the presence or absence of health care quality (Donabedian, 1980, p. 83). Donabedian (1980) further defines his model in the following manner:

> This means that structural characteristics of the settings in which care takes place have a propensity to influence the process of care so that its quality is diminished or enhanced. Similarly, changes in the process of care, including variations in its quality, will influence the effect of care on health status, broadly defined. (p.84)

Donabedian's model (1980) was used to link the relationships among structure, process and outcome variables in this study. In particular, this model was used to demonstrate the linkage of nurse manager level of EI to process elements of RN job satisfaction and RN perceptions of the practice environment. In addition, this model illustrates the linkages of RN job satisfaction and RN perceptions of the practice environment to the outcome variables (patient, hospital and nursing outcomes). Further, this model illustrates the moderating effect of RN hours of care between the RN job satisfaction and RN perceptions of the practice environment and the study outcome variables.

To define these linkages further, the level of nurse manager emotional intelligence and all participant demographic characteristics (age, gender, nursing degree, years of experience and certification) are components of structure. Donabedian (1980) postulates that human, physical, and financial resources are elements of structure; in particular the "number, distribution and qualifications of professional personnel" (p. 81). Other characteristics of structure denoted by Donabedian (1980) include that they are an unvarying, function to produce care or are an element of the work environment that can influence the provision of care. Donabedian (1980, 1996) describes process elements as the procedures, behaviors, relationships and tools to provide care. Process elements

pertaining to this study comprise the levels of RN job satisfaction and RN perceptions of the practice environment. In addition, the variable nursing hours of care is a process element because it may influence the relationships of the other process indicators (job satisfaction and perceptions of the practice environment) and the dependent variables (patient outcome measures, nursing outcomes and hospital outcomes). End result outcomes depicted in this study include patient outcomes (falls, hospital acquired pressure ulcers and medication error rate), nursing outcomes (patient and physician satisfaction with nursing care) and hospital outcomes (registered nurse turnover and vacancy rates). The dependent variables in this study correspond with Donabedian's (1980) description of outcome elements such as a change in the health status, an increase in knowledge or patient satisfaction which is attributed to the process of care.

This study's exploratory and theoretical logic model postulates: how EI, job satisfaction and perceptions of the practice environment can influence patient, nursing and hospital outcomes. Nurse Managers with prominent levels of EI have RNs with greater job satisfaction and improved perceptions of the practice environment. RNs with higher levels of job satisfaction and perceptions of the practice environment demonstrate improved patient, nursing and hospital outcomes compared to those nurses with lower levels. Nursing Hours of Care positively influence the relationship between RN job satisfaction and RN perceptions of the practice environment satisfaction, patient, nursing and hospital outcomes. This logic model, developed by Evans (1992), is based upon the Psychosocial Nursing Research Model as a heuristic device for research. It should be emphasized that although this model is exploratory in nature, additional pathways not depicted in the model may be plausible.

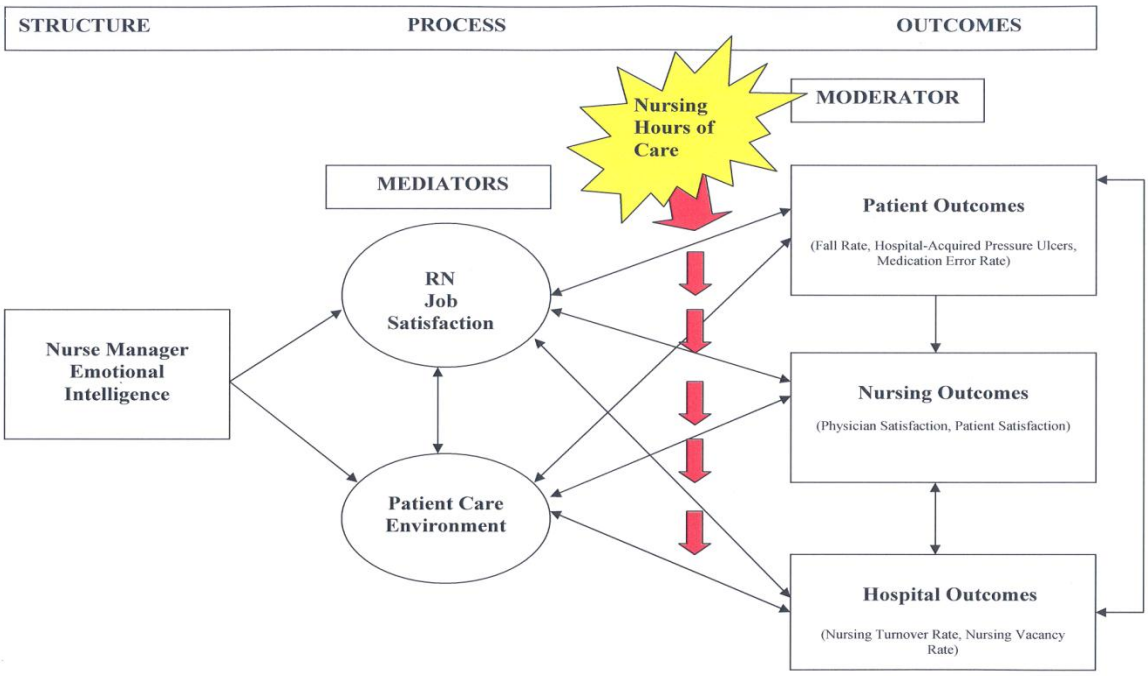

Figure 1. Emotional intelligence as a predictor to RN job satisfaction and RN perceptions of the practice environment, effect on nurse-sensitive patient outcome measures and nursing and hospital outcomes.

Emotional Intelligence Review of Empirical Literature

Emotional intelligence and the following variables were reviewed: Emotional Intelligence and Leadership, Emotional Intelligence and Transformational Leadership, Emotional Intelligence and Practice Environment, and Emotional Intelligence and Job Satisfaction. The following studies examined EI and Leadership: McCallin & Bamford, 2007; Cummings et al., 2005; Molter, 2001; Rego, Sousa, Pina e Cunha, Correia & Saur-Amaral, 2007; Vitello – Cicciu, 2001.

Emotional intelligence and leadership. McCallin and Bamford (2007) evaluated how emotional intelligence affects interdisciplinary team effectiveness. Using grounded theory, the researchers wanted to discern the major concerns of health care professionals

working in interdisciplinary teams and to explain the process used to resolve practice problems in the practice setting. The study data were collected from 44 team members, representing seven different health care disciplines at two major acute care teaching hospitals. Techniques for data collection included interviewing and participant observation; in which 80 hours of data for each method were collected. Findings from this study demonstrated that team members used pluralistic dialoguing to resolve and collaborate on work issues (McCallin & Bamford, 2007). In addition, McCallin and Bamford (2007) noted that personality differences had a significant effect (positive and negative) on teams working together. Findings suggest that the participants focused more on the cognitive (changing thinking) and psychomotor skills (expertise and complimentary) aspects of teamwork rather than the affective domain (emotional intelligence). Hence, team members participating in this study focused more on the knowledge and skill sets a person brings to the group rather than the social factors that could impact work processes and outcomes (McCallin & Bamford, 2007). The researchers noted a common theme identified by the study participants: that personality, individuality and social skills can impact the functioning of the team. In addition, the researchers found that team member job satisfaction decreased when conflict was not addressed within a group (McCallin & Bamford, 2007). McCallin and Bamford (2007) established that in order to have effective team performance membership, must have knowledge, skills and emotional intelligence (relationship management skills). With this, leaders must be cognizant of these factors and thoughtfully build teams that encompass all these elements (McCallin & Bamford, 2007).

Cummings, Hayduk and Estabrooks (2005) studied the effects of emotionally

intelligent (resonant) nurse leaders on their team members who were experiencing hospital reorganization. In particular, do resonant (emotionally intelligent) nurse leaders mitigate (lessen the intensity) the ill-effects of hospital restructuring on team members as compared to dissonant (lesser degree of emotional intelligence) nurse leaders? In addition, these researchers evaluated the effects of hospital restructuring and leadership style on nurses via assessing their level of emotional exhaustion, emotional health and workgroup collaboration (Cummings, et al., 2005).

The study sample consisted of all registered nurses (N=6,526) working in the hospital setting located in Alberta, Canada. Data were collected using The Alberta Nurse Survey of Hospital Characteristics and the International Survey of Hospital Staffing and Organization of Outcomes. Information collected from the participants included: employment characteristics, nurse work index, burnout inventory, staffing, details of the latest shift worked, quality of care, demographic data and specific questions related to hospital restructuring, workplace violence and the use of information resources. From the study data, seven data sets were created reflecting different leadership styles (Cummings, et al., 2005). Cummings et al. (2005) used 13 questions selected from the nurse survey that exhibited emotional intelligence leadership competencies. These EI competencies were then sorted into one of more of the data sets (4 resonant, 3 dissonant and 1 mixed leadership style) created by the researchers. Both resonant (visionary, coaching, affiliative and democratic) and dissonant (pace setting and commanding) leadership styles were defined by six to eight competencies, where the presence and absence of each competency was determined to fit each leadership style. Using a 4-point Likert-type scale (from strongly agree to strongly disagree), participants specified the

degree to which each statement described their current work environment. Nursing survey data were also included within each data set (which defined a specific leadership style) (Cummings et al., 2005).

Cummings et al. (2005) developed a theoretical model that portrayed the causal relationships between hospital restructuring and effects on nurses via a systematic review of the literature and past leadership experience of the researchers. Analysis of the data were conducted in two stages; measuring the effects of hospital restructuring on nursing outcomes for each leadership style, then determining the impact leadership styles have on nursing outcome variables. One significant finding found in all leadership styles is a direct relationship between the number of hospital restructuring activities and the reported number of patient care needs not met. Interestingly, those nurses working in dissonant leadership environments reported 3 times the number of unmet patient care needs as compared to those nurses reporting to a resonant leader (Cummings, et al., 2005). Cummings et al. (2005) noted that hospitals that restructure frequently have nurses reporting a greater amount of emotional exhaustion, a decline in emotional health and interference with work-group collaboration. Further, the impact of restructuring on nursing is lessened when working in a resonant leadership environment. In summary, Cummings et al. (2005) noted a reduction in discourse in each of the dependent variables from those team members who had resonant (emotionally intelligent) leaders as compared to dissonant leaders. In addition, the negative impact of changing nursing units on nursing job satisfaction and reported psychosomatic symptoms decreased when there was a resonant leader involved (Cummings et al., 2005).

Molter (2001) qualitatively and quantitatively assessed the ways nurse leaders

(directors and vice-presidents of nursing) (n=26) perceived the role of emotions in their nursing leadership work. The study was conducted in a not-for-profit religious affiliated healthcare system which consisted of five hospitals and a teaching institute in the southwest region of the United States. Molter (2001) investigated themes (awareness of feelings and emotions among self and others, empathic and intuitive thinking, chose in response, ability to manage relationships, and ability to achieve a positive outcome and personal growth) related to a leader's perceptions regarding the role of emotions in work. These themes were then compared to Mayer and Salovey's (1997) model of EI. Five data collection instruments were used in this study which included the: (a) Leadership Practices Inventory (LPI – Self); which defined leadership work and behaviors; (b) Emotions and Leadership Practices Form; used to determine the amount of emotion involved in leadership work; (c) Semi-structured interview protocol; to identify themes based on stories in emotional reasoning and the management of emotions; (d) Mayer Salovey and Caruso Emotional Intelligence Tool (MSCEIT); to assess the level of emotional intelligence; and (e) Information Profile; participant demographics.

Molter's (2001) findings suggest that emotional holistic reasoning is vital to nursing leadership work. In addition, the participants had a propensity to demonstrate aspects of the mixed model (personality attributes) versus ability model (use of emotions and cognition) form of emotional intelligence. All but one nurse leader demonstrated moderate to enhanced levels of EI. The leaders described strategies implemented to manage emotional information in themselves and others as well as a capacity for holistic emotional reasoning. Comparison of nurse leadership perceptions to Mayer and Salovey's (1997) model did not add lucidity to the concept EI; however all the EI

attributes were reflected in the stories described by the nurse leaders (Molter, 2001).

Rego, Sousa, Pina e Cunha, Correia and Saur-Amaral (2007) explored the influence of emotional intelligent leadership on team member creativity (creative and useful ideas). In addition, the authors investigated the impact of gender on these relationships. The study sample consisted of 138 top and midlevel leaders (working in marketing, purchasing and production) from 66 organizations in the European Union. Twenty-five percent of the sample was female. Managers were asked to complete an emotional intelligence – six factor survey created by Rego and Fernades from a prior study. This instrument consisted of 23 questions where managers reported the degree each statement applies to them using a seven point Likert-type scale (1= the statement does not apply to me and 7 = the statement applies to me completely). The emotional intelligence instrument measures the degree to which an individual: (a) understands ones' emotions, (b) has self-control against criticism, (c) uses emotions (self-encouragement), (d) regulates emotions (emotional self-control), (e) has empathy, and (f) understands others' emotions. Managers also reported the frequency (1 = never to 5 = frequently) each of their team members adopted the 13 creativity behaviors proposed by Zhou and George. Results from the analysis demonstrate that all EI dimensions, excluding self-control, correlate positively with employee creativity. Females tended to score higher in empathy (t-test: 6.0 vs. 5.7; $p< 0.05$) (Rego, et al., 2007). In addition, female managers described their team members as providing more useful ideas as compared to their male counterparts (t-test: 3.5 vs. 3.2; $p< 0.05$). Rego et al. (2007) found that the correlation between female manager empathy and team member creativity is controlled by gender ($p< 0.001$). In summary, leaders with high levels of EI have team members that

demonstrate greater creativity. In particular, leaders with an enhanced ability to maintain self-control against criticism and are empathetic tend to have highly creative team members (Rego, Sousa, Pina e Cunha, Correia & Saur-Amaral, 2007).

Vitello – Cicciu (2001) conducted a two-event descriptive exploratory study to examine the self-reported and expressed leadership practices of nurse administrators and to determine the characteristics of the nurse leaders with high levels of EI. The convenience sample for this study consisted of 50 nurse leaders that work within a Catholic healthcare system (6 hospitals) located in Massachusetts. The nurse leaders' titles consisted of patient care managers, nursing directors, nurse leaders and vice presidents of patient services. The first step of the study consisted of collecting data from the nurse leaders using two instruments: the Mayer Salovey Caruso Emotional Intelligence Test (MSCEIT) and the Leadership Practices Inventory (LPI). The MSCEIT measured the nurse leaders' level of emotional intelligence and the LPI measured leadership practices (enabling others to act, modeling the way, encouraging the heart, challenging the process and inspiring a shared vision). Those leaders with MSCEIT scores 115 or greater and 85 and lower were contacted and invited to participate in a semi-structured interview.

Vitello-Cicciu (2001) determined that the most common leadership practice as reported by the LPI is "Enabling Others to Act" and the least frequent action was "Inspiring a Shared Vision". Using LPI and EI scores from the total sample (n=50), there was a noted weak relationship between the leadership practice Enabling Others to Act and MSCEIT scores ($r = 0.21$; $p<0.12$); there were no other significant findings noted. Findings from the semi-structured interviews demonstrated that nurse leaders with high

EI verbalized that they use self-help books (90%) and engaged in meditative practices (72%) as way to manage their emotions. In addition, several nurse leaders described strategies such as not taking things personally, engaging in stress management, and having empathy for others as methodologies to develop their EI skills. Finally, Vitello-Cicciu (2001) noted that those leaders with higher levels of EI had increased awareness of self and others as compared to those with lower levels of EI.

Emotional intelligence and transformational leadership. There have been several researchers that have suggested a predictive relationship between EI and transformational leadership (Skinner & Spurgeon, 2005; Gardner & Stough, 2002; Barbuto & Burbach, 2006; Mandell & Pherwani, 2003; Downey, Papageorgiou & Stough, 2006). Bass (1985) described transformational leadership as a style that motivates groups to perform to their best potential during turbulent and stressful times. Skinner and Spurgeon (2005) examined the relationship between empathy (a component of emotional intelligence) and health leadership behaviors and effectiveness. Specifically, this study evaluated the relationship between a manager's self-assessed level of empathy, leadership behavior as reported by their team members, and team member self-assessed reports of job satisfaction and related outcome measures. Skinner and Spurgeon (2005) identified empathy as consisting of four components: empathic concern (EC), perspective taking (PT), empathic matching (EM) and personal distress (PD). Prior to conducting the main study, the researchers developed an empathy multidimensional scale that was created from two pilot studies and a confirmatory validation study. The end product was a 30-item Multidimensional Empathy Scale (MES) with sound psychometrics. The MES instrument was used in the main study, with a sample of 96

mid to senior level health care leaders working for a Western Australian Health Department. The inclusion criteria for the managers consisted of holding a management position for greater than four months and having responsibility for 12 or more team members for greater than three months. The team member sample included up to 12 subordinate staff per manager, where a total of 563 subordinate team members participated in the study (Skinner & Spurgeon, 2005).

The managers that participated in the study received a questionnaire that consisted of four instruments: the Multifactor Leadership Questionnaire (MLQ), Manager Form 5X, Multidimensional Empathy Scale (MES) and a demographic tool. Staff participating in this study completed a survey tool that consisted of the following scales: MLQ, Staff Form 5X, Organizational Commitment Scale and a demographic questionnaire. Skinner and Spurgeon (2005) conducted factor analysis procedures to elucidate the component structure of the MES and MLQ scales. After confirming components and factors in both scales, the researchers identified that transformational leadership was defined by six main factors (idealized attributes, idealized behavior, inspirational motivation, intellectual stimulation, individualized consideration and contingent reward), transactional leadership was identified by one factor (management by exception) and laissez-faire leadership was denoted by two factors (management by exception and laissez-faire) (Skinner & Spurgeon, 2005).

Results related to empathy and leadership demonstrated that all four empathy scales (EC, EM, PT, and PD) were found to have significant correlations ($p < 0.01$) with transformational leadership. In particular, EC ($r = 0.30$), EM ($r = 0.31$) and PT ($r = 0.33$) had significant correlations and are considered antecedents to transformational leadership

(Skinner & Spurgeon, 2005). There was a negative correlation between PD and transformational leadership ($r = -0.26$, $p < 0.01$) and an insignificant correlation between PD and transformational leadership ($r = -0.04$) (Skinner & Spurgeon, 2005). In addition, the researchers found that transactional leadership and the empathy scales did not have a significant association. There were no significant correlations between transactional or laissez-faire leadership and the four empathy scales (Skinner & Spurgeon, 2005).

The study results support the premise that empathy is a key attribute of leadership. In regard to empathy and outcome measures (job satisfaction, organizational commitment, effectiveness, extra effort and Bass satisfaction), the results from this study demonstrated the following: PT is associated with job satisfaction ($r = 0.21$, $p < 0.05$), effectiveness ($r = 0.25$, $p < 0.05$), extra effort ($r = 0.25$, $p < 0.05$) and Bass satisfaction ($r = 0.28$, $p < 0.05$) and EM was significantly associated with organizational commitment ($r = 0.21$, $p < 0.05$), extra effort ($r = 0.21$, $p < 0.05$) and Bass satisfaction ($r = 22$, $p < 0.05$). In addition, PD ($r = -0.22$, $p < 0.05$) and EC ($r = 0.21$, $p < 0.05$) correlates with extra effort (Skinner & Spurgeon, 2005). The researchers noted that extra effort was significantly correlated with empathy measures and also found that organizational commitment had little direct correlation with empathy. In summary, Skinner and Spurgeon (2005) support the proposition that a leader's personal attributes can affect behavior. Team members who perceive their leaders as having high levels of empathy also see their leaders as inspirational, understanding and having a more interactive leadership style. In addition, a manager's leadership behavior can be linked to some team member outcome measures (job satisfaction, organizational commitment, effectiveness, and extra effort (Skinner & Spurgeon, 2005).

Gardner and Stough (2002) examined the association between transformational leadership and emotional intelligence in senior level managers. A total of 110 participants (44% response rate) responded to the study. Study questionnaires included the Swinburne University Emotional Intelligence Test (SUEIT), which measures emotional intelligence in the practice environment. The SUEIT is a self-report instrument that provides a total score as well as results on five subscales: a) emotional recognition and expression; the ability to identify feelings in oneself, b) emotions direct cognition; the extent that emotions are used in decision making, c) understanding emotions; the understanding emotions of others, d) emotional management; the management of emotions in self and others, and e) emotional control; the control of emotions at work. This instrument was developed from six emotional intelligence scales and included 65 items measuring responses on a five-point Likert-type scale (1 = never, 5 = always). The study participants responded to items (indicating the extent each statement is true) that queried them about the way they typically behave and think in the work environment. In addition to the SUEIT instrument, the participants were asked to complete the Multifactor Leadership Questionnaire (MLQ - Form 5X). The MLQ is a 45 item, self-report questionnaire that asks the frequency (via a five-point Likert-type scale; 0 = not at all to 4 = frequently) a leader displays an array of leadership behaviors. Five subscales in the MLQ assess transformational leadership behaviors (idealized attributes, idealized behaviors, inspirational motivation, intellectual stimulation and individual consideration). In addition, the MLQ measured both transactional and laissez-fare leadership behaviors (Gardner & Stough, 2002).

Gardner and Stough (2002) found a strong positive relationship between

transformational leadership and emotional intelligence ($r = 0.675$, $p < 0.01$). In addition, there was no relationship between emotional intelligence and transactional leadership and a significant negative correlation between laissez-faire leadership and emotional intelligence ($r = -0.464$, $p < 0.01$) (Gardner & Stough, 2002). Further, all five components of emotional intelligence positively correlated (moderate to strong) with all the components of transformational leadership, where the strongest correlation was found between individual consideration and understanding others emotions ($r = 0.585$, $p < 0.01$) (Gardner & Stough, 2002). Hence, Gardner and Stough (2002) demonstrated the existence of a strong relationship between transformational leadership and emotional intelligence.

Barbuto and Burbach (2006) also explored the relationship between emotional intelligence and transformational leadership. In particular, is emotional intelligence an antecedent to transformational leadership? The study participants were 80 elected officials who attended a leadership conference and 388 of their direct-reports. Prior to the conference, leaders were provided information about the study and given a letter of informed consent. Leaders that chose to participate in the study completed a 30 item, self-report emotional intelligence instrument developed by Carson et al., six weeks prior to attending the conference. At the leadership workshop, participants that completed the emotional intelligence instrument were asked to complete the Multifactor Leadership Questionnaire (MLQ). In addition, each leader was asked to select four to six colleagues (direct reports) to complete the rater version of the MLQ (Barbuta & Burbach, 2006).

Babuta and Burbach (2006) found that the emotional intelligence component empathic response had a significant relationship with the rater-reported transformational

component intellectual stimulation ($r = 0.16$, $p < 0.01$) and individualized consideration ($r = 16$, $p < 0.01$). Leader self-reported and rater-reported transformation behaviors had minimal statistical significance. This study demonstrated that the components of emotional intelligence exhibit positive significant relationships with the self-report subscales of transformational leadership. However, there was little significance between emotional intelligence and rater-report of leader intellectual stimulation and idealized influence, which attenuates support from other studies depicting a positive relationship between emotional intelligence and transformational leadership (Barbuta & Burbach, 2006). The emotional intelligence component empathetic response had significant relationships with each component of transformation leadership. Therefore, leaders with empathy for fellow colleagues view themselves as transformational leaders (Barbuto & Burbach, 2006).

Mandell and Pherwani (2003) studied the predictive relationship between emotional intelligence and transformational leadership. They also investigated the gender differences between the two constructs emotional intelligence and transformational leadership. Letters were sent to managers which described the study and requested study participation. Study participants ($n = 32$; 13 males and 19 females) consisted of male and female exempt managers or supervisors in a mid-sized to large organization. Each participant was asked to complete the Multi-factor Leadership Questionnaire, 5X - Revised self-rating form (MLQ), the Bar-On Emotional Quotient Inventory (EQ-i) and a demographic survey. The MLQ assessed the five components of transformational leadership, three components of transactional leadership, one non-transactional component of leadership and three outcome elements. The EQi measured

the participants' level of emotional intelligence (Mandell & Pherwani, 2003).

Hierarchal regression analysis was conducted to evaluate the predictive relationship between emotional intelligence and transformational leadership. Mandell and Pherwani (2003) determined that there was a significant linear relationship between emotional intelligence and transformational leadership ($R = .499$, $R^2 = .249$, $p < 0.05$). In addition, the researchers did not find a difference (difference in R^2 values was -0.002) in the relationship between emotional intelligence and transformational leader between male and female managers (Mandell & Pherwani, 2003). Thus, Mandell and Pherwani's (2003) research supports the claim that there is a relationship between the two variables emotional intelligence and transformational leadership.

In addition, Downey, Papageorgiou and Stough (2006) wanted to explore the relationships between leadership style, intuition and emotional intelligence in female managers. Female managers were subjects in this study due to the gender differences reported in previous studies pertaining to emotional intelligence, leadership and intuition. This study consisted of 176 female managers from various work industries (education, finance, healthcare, human resources and telecommunications) in Australia. The following instruments were given to the participants: a) the Swinburne University Emotional Intelligence Test (SUEIT); specifically measures workplace emotional intelligence, b) Trait Meta-Mood Scale (TMMS); a second measure of emotional intelligence that measures reflective processes that complement moods, c) Cognitive Style Index (CSI); measures intuition and the d) Multifactor Leadership Questionnaire (MLQ); assesses leadership style. The researchers anticipated that all components of emotional intelligence measured via the SUEIT and TMMS would be correlated with the

factors related to transformational leadership (Downey et al., 2006).

The hypothesis was partially supported, as only three variables of the SUEIT (understanding emotions, emotion management and emotional control) and two components of the TMMS (attention to feelings and clarity of feelings) correlated with all the components of transformational leadership. There was no relationship between transactional leadership and the emotional intelligence scales (Downey, et al., 2006). The researchers predicted that there would be a negative association between laissez-faire leadership and the two emotional intelligence scales; however, two scales (emotions direct cognition and attention to feelings) did not produce negative correlations (Downey, et al., 2006). There were significant findings between emotional intelligence and intuition: SUEIT sub-scales (emotional recognition and expression $r = - 0.20$, $p < 0.01$ and emotions direct cognition $r = - 0.33$, $p < 0.01$). The attention to feelings subscale of the TMMS was the only sub-scale that demonstrated a significant relationship with intuition ($r = - 0.28$, $p < 0.01$) (Downey, et al., 2006). In summary, Downey et al. (2006) found positive relationships between emotional intelligence and transformational leadership. In particular, the ability to manage one's own and others' emotions was the best predictor of transformational leadership. Leaders with the ability to identify their feelings and emotional states, to express those feelings with others and use emotional knowledge in problem-solving are more apt to use intuition in decision-making (Downey, et al., 2006). Therefore, the best predictor of intuitive cognitive style is the ability to incorporate emotions and emotional knowledge in decision-making and problem-solving (Downey et al., 2006).

Emotional intelligence and practice environment. The following study

examined the EI and the practice environment: Kooker, Shoultz & Codier, 2006. Kooker, Shoultz and Codier (2006) conducted a qualitative research study using the emotional intelligence as the conceptual framework to explore stories shared by nurses regarding their professional practice. The researchers asked the following question, "Is there evidence in the stories of professional practice that reflect the competencies of emotional intelligence as it relates to improved process and outcomes for patients/clients and nurses?" (p.31). In addition, sample stories from a previous study were reanalyzed for this study. Nurses (n = 16) were asked to: "write a story from your lived experience where nursing knowledge made a difference" (p.31). In the original research study, stories were mailed to research team members to be read and analyzed. At a later date, the research team convened to identify themes (Kooker, Shoultz & Codier, 2006).

Members of the original research team proposed that the concept emotional intelligence is a viable construct to evaluate based on the effect of this variable on nursing practice, improved outcomes and retention; hence an extension from the original study. The study procedure consisted of researchers reading the nurse stories and coding the phrases representing emotional intelligence competencies. For each story, the researchers coded phrases that represented emotional intelligence competencies and the four domains. Afterward, the researchers collaborated to ascertain consensus on findings. Themes were then analyzed using the Goleman model of emotional intelligence. Emotional intelligence competencies and domains were analyzed via micro level analysis (competencies), macro level analysis (domains) and meta-analysis across all stories using both competencies and domains (Kooker, et al., 2006). Kooker et al. (2006) noted emotional intelligence competencies and domains were identified in all 16 nursing

stories. Social awareness was the most commonly displayed domain whereas self-management was least frequently demonstrated. Both self-awareness and social management domains closely followed in rank following the social awareness domain. Self-awareness was noted as an important domain to consider for nursing retention, as this domain represents the nurses' awareness of their strengths, opportunities and self-worth. Competencies in the social awareness realm reflected in the stories included nurses displaying acts of empathy and recognizing patient/family needs. Self – management competencies reflected in the nursing stories included the ability to have self-control, adaptability and conscientiousness in the practice setting. Examples elucidated from the nursing stories that exhibited the social/relationship management domain included the development and management of relationships and the ability to influence others to achieve quality patient care outcomes (Kooker, et al., 2006). In summary, the researchers noted all elements of professional practice and emotional intelligence were elucidated in the 16 nursing stories. In addition, Kooker et al. (2006) suggests that implementation of emotional intelligence principles in the practice setting could lead to improved nursing retention.

Emotional intelligence and job satisfaction. The following studies examined the effect of EI and job satisfaction (Wong & Law, 2002; Quoidbach & Hansenne, 2009). The effect of EI on job performance in the practice environment was investigated by Wong and Law (2002) whereby relationships between EI and job satisfaction, organizational commitment and turnover were explored. Further, the association between EI and job outcome relationships was explored as moderated by emotional labor. In order to examine these relationships, the researchers developed a new EI instrument

(specific to the practice environment) and conducted two empirical studies with this newly developed survey. To develop the EI instrument, the researchers used three groups of independent samples to develop items and to test the survey's psychometric properties. After conducting a factor analysis, the 16 item- four factor EI instrument emerged with the average factor loadings for each dimension being .80. Internal consistency for the four dimensions ranged from .83 to .90. Wong and Law (2002) concluded there was sufficient factor structure, internal consistency, convergence and discriminant and incremental validity to use the instrument in future studies.

The first study conducted by Wong and Law (2002) evaluated the interaction between EI and the performance and emotional labor of team members. The study sample consisted of 149 supervisor-team member dyads based on 60 mid and top level managers that were enrolled in a part-time management diploma course. Also included in the sample were four direct report team members. The managers were asked to evaluate the emotional labor and job performance of their team members. Managers were educated on the concept of emotional labor. In addition, each manager received an explanation and demonstration of how the Adelmann tables are used. The Adelmann table contrasts jobs and the level of emotional labor used to perform the role. Sample job descriptions were then presented to the managers. Next, the manager was asked to discern where the job would be classified on the Adelmann table. After the managers reached consensus on the emotional labor classification for each job, they were asked to evaluate their team members' jobs in relation to the level of emotional labor (1 = high level and 0 = low level). Team members enrolled in the study were asked to complete the Wong and Law (2002) EI instrument to determine their level of EI. In addition, the team

members were asked to complete a questionnaire that included items related to emotional labor. The questionnaire consisted of: (a) five items that designed by Wong and Law (2002) (drawn from Hoschild and items used by Adlemann), (b) job satisfaction (four items from the Job Diagnostic Survey), (c) organizational commitment (six items from an affective commitment tool by Meyer, Allen and Smith), (d) turnover intention (three items from Cammann, Fichman, Jenkins, and Klesh), and (e) job performance (five items developed by Williams).

Wong and Law (2002) ascertained that EI (total mean score) had a significant correlation to job performance ($r = .21$, $p < 0.01$) and job satisfaction ($r = .40$, $p < 0.01$). However, EI (total mean score) did not have a significant relationship with organizational commitment or turnover intention. In addition, the researchers discovered that emotional labor is a significant moderator in the relationship between EI and job performance when team member assessments of emotional labor are used; unlike when managers' assessments of emotional labor are used. There were significant relationships between EI and job performance ($r = .26$; $p < 0.05$), EI and organizational commitment ($r = .34$; $p < 0.05$) and turnover intention ($r = -.22$; $p < 0.05$) (Wong & Law, 2002).

In their final study, Wong and Law (2002) investigated the influence of manager EI and team member work outcomes. The study sample consisted of 146 mid-level administrators in the Hong Kong Government. The administrators completed the 16-item EI instrument and were asked to evaluate the in-role (job performance) and extra-role (36-items related to organizational citizenship from the Podsakoff, MacKenzie, Moorman and Fetter instrument) behaviors for one of their team members. After completing these assessments, the administrators were asked to give a questionnaire to the team member

they had previously rated. The team member questionnaire incorporated: a) the EI survey (created by Wong and Law), b) job satisfaction (14-items from the Job Diagnostic Survey), c) job characteristics (15-items of the Job Diagnostic Survey), d) education level, and e) tenure. Wong and Law (2002) controlled for team member job perceptions, EI, education level and tenure in their analysis and found that the managers EI had no effect on job performance ($r = .122$), a minimal effect on job satisfaction ($r=.13$, $p< 0.10$) and a significant effect on extra-role behaviors ($r=.18$, $p<0.05$) (Wong & Law, 2002).

Quoidbach and Hansenne (2009) investigated the relationships between emotional intelligence, team performance and cohesion. The study sample consisted of 421 nurses, auxiliary nurses and physiotherapists in 23 nursing teams in a hospital setting located in Belgium. The average size of the nursing team was 18.3 team members and ranged in number from 14 to 23 participants. In addition, 80% of the sample consisted of women. The trait emotional intelligence was assessed using the French version of the Schutte Emotional Intelligence Instrument. This instrument has 41 questions that assessed the participants' level of emotional intelligence using a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Schutte Emotional Intelligence instrument assessed three dimensions of EI: Optimism/Mood Regulation, Appraisal of Emotion, and Utilization of Emotion. Team EI was measured via aggregating the individual scores of nursing work group. Group cohesion was assessed using the Group Cohesion Scale developed by Buchanan. This scale has seven items and used a 5-point Likert-type from 1 (strongly disagree) to 5 (strongly agree). Quoidbach and Hansenne (2009) summed all seven items to obtain an index of each participant's perception of cohesiveness. In addition, the average of all individual work group responses was

calculated to ascertain a team score. Performance was assessed using the four dimensions of performance (job satisfaction, quality of healthcare, team viability and team legitimacy) identified by Savoie and Brunet. Job satisfaction was assessed using a self-report questionnaire designed for health care employees by different Belgium hospitals. The questionnaire consisted of 17 items and used a 5-point Likert-type scale. Quality of health care was measured by undercover observers on three separate occasions using 33 objective criteria. Team viability was evaluated with a report listing reasons for departure data from team members who left the team on their own request and excluded non wanted terminations and via a calculated turnover rate. Team legitimacy was ascertained by asking managers to complete a job performance survey for each of the teams they managed. This survey consisted of criteria that managers used to assess their teams that was 15 items in length and used a 4-point Likert-type scale from 1 (strongly disagree) to 4 (strongly agree) (Quoidbach & Hansenne, 2009).

Quoidbach and Hansenne (2009) found positive correlations between the minimum score of Optimism/Mood Regulation and team output ($r = .52$; $p = 0.011$) and the maximum score of Optimism/Mood Regulation in the team and team output ($r = .48$; $p= 0.019$). A negative correlation was noted between the mean score of Appraisal of Emotion in teams and team output ($r= -.41$; $p= 0.049$). The correlations between team EI and group cohesion demonstrated a significant positive relationship between the average score of Optimism/Mood Regulation in teams and cohesiveness ($r = .4501$; $p = .031$). With no significance demonstrated in the relationship between total EI score and cohesiveness ($r = .39$; $p = 0.063$), Quoidbach and Hansenne (2009) divided the teams into two groups (high EI and low EI) and tested the difference between the groups. This

analysis revealed a significant difference in the level of EI between the two groups ($t = 2$; $p<.0001$). In addition, they found a significant difference in cohesiveness between high EI and low EI groups ($t = 3.43$; $p< .003$)(Quoidbach & Hansenne, 2009). In summary, Quoidbach and Hansenne (2009) found that Optimism/Mood Regulation may provide a conduit to improving nursing team member cohesion.

Summary of emotional intelligence review of research. There are empiric studies that demonstrate an association between emotional intelligence and transformational leadership (Skinner & Spurgeon, 2005; Gardner & Stough, 2002; Barbuto & Burbach, 2006; Mandell & Pherwani, 2003; Downey et al., 2006). The effect of emotional intelligence appears to have a positive influence on team member creativity (Rego, Sousa, Pina e Cunha, Correia & Saur-Amaral, 2007) and extra-role behaviors (Wong & Law, 2002) in the work environment.

Practice Environment Review of Literature

There is numerous research that has been conducted in the nursing domain pertaining to the nursing work environment. Nurse researchers have appropriately used a concept typically used in the business, management and psychology domains and applied it to the realm of nursing. Since the 1980's, nursing research related to the PCE has been conducted, with the introduction of studies ascertaining the characteristics of institutions typified as great places to work (Lake & Friese, 2006; McClure, Poulin, Sovie & Wandelt, 1983) to the most recent studies evaluating the impact of the nursing PCE on patient care and hospital related outcomes (Aiken, Smith, & Lake, 1994; Havens & Aiken, 1999; Scott, Sochalski, & Aiken, 1999).

The following studies examined the practice environment literature (Patrician,

2002; Rathert & May, 2007; Boyle, 2004; Friese, 2005; Hayhurst, Saylor & Stuenkel, 2005; Lucero & Sousa, 2006; Begat, Ellefsen, & Severinsson, 2006; Lavoie- Tremblay et al., 2005; Gardner, Thomas-Hawkins, Fogg & Latham, 2007). Patrician (2002) assessed the impact of the nursing work environment on nursing job satisfaction and the intent to leave the job. Characteristics of the work environment included: sufficient number of supplies or resources to provide patient care, nurse-physician collaborative relationships, management support, control over one's professional practice, reward and recognition, opportunities for involvement in one's professional practice, and potential for advancement in the organization. The study sample consisted of nurses (n = 697) from 40 nursing units at 20 hospitals. Patrician (2002) identified a key predictor to job satisfaction was the nurses' perception of workload, working with temporary nurses, RN staffing, and the practice environment. Patrician (2002) also reported that the interactions between workload and the work environment characteristics were statistically significant suggesting that nurses working in supportive environments were less dissatisfied even when they have heavier workloads. Interestingly, nursing job satisfaction and daily work demands did not predict turnover (Patrician, 2002). Predictors of turnover included decreased unit tenure (Global Chi Square = 13.17, p = .01) and a less supportive practice environment (Global Chi Square = 14.99, p = .001) (Patrician, 2002).

Attributes of the practice environment and the relationship to nurse job satisfaction and patient outcomes was studied by Rathert and May (2007). Nurses (n = 307) who worked at three acute care facilities in the eastern United States participated in the study. The nurses participating in the study were asked to complete the following

surveys: (a) a patient –centered climate instrument, (b) perceived medication error measure, (c) Picker Institute Scale for job satisfaction, (d) comfort reporting own errors measure and (e) comfort pointing out others' errors measure. Rathert and May (2007) indicated that environments that exhibited a patient centered climate had nurses with higher levels of job satisfaction $F(1, 298) = 93.61$, $p<.001$. In addition, units with patient centered environments had a significant negative relationship to perceived medication errors $F(1, 274) = 20.77$, $p <.001$. Nurses who perceived a patient centered work environment believed that medication errors occurred less frequently. In addition, the frequency of medication errors was significantly negatively related to nursing job satisfaction $F(1, 274) = 5.54$, $p<.05$, and nurses who perceived higher frequency of medication errors were less satisfied with their job (Rathert & May, 2007). To summarize, nurses who perceived their practice environments as patient centered experienced greater job satisfaction and believed that there were fewer medication errors. In addition, these same team members felt comfortable reporting medical errors and near-misses (Rathert & May, 2007).

Boyle (2004) investigated how organizational characteristics influence the advent of adverse events and failure to rescue at the individual nursing unit level. Boyle (2004) asked the following: "What is the relationship between specific organizational unit characteristics and adverse events" (Boyle, 2004, p. 114). Twenty – one nursing units at a 944 bed teaching hospital were included in the sample. The Nursing Work Index – Revised (NWI-R) instrument was administered to nurses ($n = 390$). In addition, six months of unit level patient discharge data ($n=11,496$) were analyzed. Descriptive data and patient adverse event information (falls, nosocomial pressure ulcers, urinary

tract infections, pneumonia, cardiac arrest, mortality, length of stay, and failure to rescue) were pulled for analysis three months prior and three months post administration of the NWI-R survey. Boyle (2004) conducted a principle component analysis to validate the NWI-R (three-factor) instrument and identified a four factor version of the NWI-R (B) which was used for the purposes of this study.

Boyle (2004) noted several significant relationships between NWI-R (B) factors and adverse events. Autonomy/collaboration had a statistically significant positive relationship with pressure ulcer rates (r = 0.47) and a significant inverse relationship to failure to rescue (r = - 0.53). Units with higher levels of autonomy/collaboration had lower incidences of pressure ulcers, falls, pneumonia, death, and shorter lengths of stay as compared to those nursing units with lower levels of autonomy/collaboration. Nurse Manager support was correlated inversely with pressure ulcer prevalence (r= - 0.31) and death (r = - 0.48) and had a positive correlation with failure to rescue (r =0.28) (Boyle, 2004). In addition, high continuity/specialization had an association with decreased incidences of pneumonia (r = -0.33), cardiac arrest (r = -0.31) and length of stay (r = - 0.44) (Boyle, 2004).

Friese (2005) examined the relationship between practice environments and nursing outcomes on 22 medical surgical oncology units. A secondary analysis was conducted by Friese (2005) from data originally collected in 1998 from a prior study performed by Aiken, Havens, and Sloane (2000). In the Aiken et al. study, a total of 1,956 RNs participants completed the Practice Environment Scale of the Nursing Work Index (PES-NWI), which measures nurses' perceptions of the presence of an organization's traits which impact the work setting (Friese, 2005). In addition, the

Maslach Burnout Inventory was administered to the participants who measured their level of emotional exhaustion because of work. The nurses that participated in the study were from a convenience sample of 22 hospitals, of which seven had Magnet designation. Friese (2005) was particularly interested in the difference in outcomes between the oncology units (n = 305) as compared to non-oncology unit results. In addition, outcomes were compared between Magnet versus non-Magnet designated hospitals (Friese, 2005).

Outcomes pertaining to the PCE showed that oncology nurses had a greater rating of Collegial Nurse-Physician Relation as compared to non-oncology units ($p<.01$). Also, oncology nurses in non-Magnet designated hospitals had the lowest mean on the Staffing and Resource Adequacy subscale as compared to the other samples (Friese, 2005). Magnet hospitals had significantly higher scores on three out of the five subscales of the PES-NWI ($p<.01$) and were less likely to report that they were dissatisfied with their jobs. Nurses in non-Magnet facilities responded that they did not have sufficient staffing resources to provide safe care to their patients. Scores on the PES-NWI reflect that nurses working in a Magnet designated facility have significant positive effects on delivering quality care outcomes and positive perceptions of their jobs (Friese, 2005). Further, nurses working in Magnet hospitals had significantly less emotional exhaustion and job dissatisfaction when compared to non-Magnet hospitals, regardless of specialty ($p<0.0001$) (Friese, 2005).

Using a descriptive, correlational design, Hayhurst, Saylor and Stuenkel (2005) studied retention factors associated with a nurses' intent to stay, change, or leave their current work setting. Perceptions of the work environment among nurses (n = 272) who

left the workforce was compared to those colleagues who stayed. Using four subscales from the Moos' Work Environment instrument, Hayhurst et al. (2005) studied the differences in perceptions among nurses who stayed in their jobs versus those who left based on the following work factors: (a) peer cohesion, (b) supervisor support, (c) autonomy, and (d) work pressure. Nurses who stayed in their work environment reported higher perceptions of friendliness and support from other co-workers as compared to those who left ($t = 0.5$; $p = 0.58$); although not significant. In addition, nurses that stayed on their units felt greater supervisor support ($M = 4.6$; $SD = 2.4$) as compared to those nurses who left ($M = 4.1$; $SD = 2.8$); no statistical significance ($t = 1.2$; $p = 0.22$). Perceptions of autonomy were reported higher, yet not statistically significant, in those nurses that remained on the unit ($t = 0.6$; $p = 0.58$). Further, nurses that remained on the unit experienced a lower perception of work pressure (not statistically significant) as compared to those who left ($t = 1.2$; $p= 0.23$). Interestingly, Hayhurst et al. (2005) discovered that younger nurses (20-29 years old) and those with less than two years of seniority, tended to leave the work environment more often than other age groups and more tenured nurses'. In summary, Hayhurst et al. (2005) found that nurses who remained on their nursing unit had a better perception of peer cohesion, supervisory support, and autonomy as compared to those who left.

Lucero and Sousa (2006) investigated the relationship between participation and change among a sample of acute care RNs ($n = 75$) working on both medical surgical and critical care units. RNs were asked to complete the Person-Environment Participation Scale (PEPS) which measures the participation and perceived level of interaction with their nursing practice environment. In addition, these RNs were asked

to complete the Perceived Stress Scale (PSS) that measures change in the environment by assessing one's thoughts and feelings. Lucero and Sousa (2006) found a statistically significant negative relationship between the two scale scores (PEPS and PSS) $r = -.444$, $p<.01$, $N= 75$. Hence, the degree of change (perceived as stress) decreases as nursing participation in the practice environment increases (Lucero & Sousa, 2006).

Begat, Ellefsen, and Severinsson (2006) examined nurses' satisfaction with their psychosocial practice environment, moral sensitivity and differences in outcomes of clinical nursing supervision in relation to nurses' well-being between supervised versus non-supervised nurses. RNs ($n = 71$) from two Norwegian hospitals completed several questionnaires: (a) a demographic tool, (b) the Patient Work Environment (PWE) Questionnaire; which has 6 subscales that measure job and environment satisfaction and (c) the Moral Sensitivity (MS) Questionnaire; which has 7 factors that measure the RNs moral sensitivity.

Begat et al. (2006) found a weak correlation between the nurses' PWE factors: professional development, job stress and anxiety and ethical conflicts ($p<.05$). With this finding Begat et al. (2006) suggest that in stressful practice environments attempts to reduce anxiety are necessary in order for nurses to provide safe quality patient care. In addition, there was also a mild correlation between the nurses' MS factors; independence and relationships with colleagues ($p<.05$). Begat et al. (2006) responded to this finding by discussing the pattern of how nurses resolve dilemmas they face when their values are not congruent with the organization's. In these cases, the researchers cite that nurses choose the principles honesty, patient participation and responsibility for patient care to achieve the best outcome possible (Begat, et al., 2006).

Lavoie- Tremblay, Bourbonnais, Viens, Vezina, Durand and Rochette (2005) designed an interventional pilot study to evaluate the effectiveness of a participatory organizational intervention as an improvement to the psychosocial practice environment. RNs (n = 60) at a long term care unit in Canada completed pre-test and post-test test questionnaires to analyze the impact of the work environment intervention. The unit was selected based on its high level of absenteeism which was 8.26% as compared to the institution's rate of 4.69% for the year 1999-2000. The participating unit had the following interventions: (a) a verbal commitment from the organization, (b) identification of unit work constraints, (c) action plan development (d) implementation of action plans and (e) evaluation of the interventions. The Job Content Questionnaire (JCQ) was completed prior to and post implementation of the unit based interventions. The JCQ assessed the following characteristics: decision latitude, psychological demands and social support. In addition, other measures such as: effort/reward imbalance, reward, psychological distress and absenteeism were assessed (Lavoie-Tremblay et al., 2005).

Lavoie-Tremblay et al. (2005) noted statistically significant findings after the study interventions. Fifty-one percent of the RNs reported a perceived positive level of reward as compared to the pre-test level of 16.2% ($p<.001$) and a reduction in effort/reward imbalance from 71.4% to 37.1% ($p <0.001$). In addition, the rate of absenteeism from pre-intervention 8.26% to post- intervention was 3.58%. Study findings not found statistically significant include: a reduction in the perceived social support from superiors, support perceived from co-workers and reductions in job strain and psychological demand. Lavoie-Tremblay et al. (2005) cite two limitations to the

study which could have impacted their findings: sample size and length of time between the pre-test and post-test questionnaires (1 year) that could have impacted their findings.

In another study, Gardner, Thomas-Hawkins, Fogg and Latham (2007) examined the relationships between nurses' perceptions of their practice environment, intent to leave, nurse turnover, patient satisfaction and patient hospitalization. Study participants included hemodialysis nurses (n = 199) that worked for a national dialysis company. Managers from each dialysis site (n = 46) were contacted via email to extend an invitation to their nurse team members to be a study participant. In addition, the principal investigator visited each dialysis site eliciting participation from the staff to complete the Practice Environment Scale- Nursing Work Index (PES-NWI) and a demographic questionnaire. The PES-NWI assessed the presence of magnet attributes in their job and the level of importance to the nurse. Administrative data were also collected from either human resources or the performance improvement departments at each facility and included turnover rates, patient satisfaction (survey from Data Management & Research) and the number of patient hospitalizations. Intentions to leave data were captured by asking the nurse participants if they planned on leaving the dialysis facility in the next year. Data were reported in aggregate by dialysis facility (Gardner, et al., 2007).

Gardner et al. (2007) determined that the nurses that participated in the study felt that magnet attributes (nurse participation, quality care, manager ability, staffing and resource and nurse-physician relations) as outlined on the PES-NWI were apparent in the dialysis practice environments. In addition, the nurses confirmed that magnet characteristics are important to have in the practice environment (Gardner et al., 2007).

With regard to the nurses' intent to leave, PES-NWI total scores were related to the nurses' intent to leave ($r = -.254$, $p < 0.01$), meaning lower PES-NWI scores related to an increased likelihood to leave the facility. The Staffing and Resource Adequacy subscale from the PES-NWI was significantly correlated with nurse turnover ($r = .32$, $p < 0.05$) (Gardner et al., 2007). In addition, negative overall PES-NWI ratings were significantly related to hospitalizations for patients on dialysis greater than 90 days ($r = -.34$, $p < 0.05$). Further, patient satisfaction was not correlated with the PES-NWI scores; however, nurse turnover did correlate with patient satisfaction ($r = -.53$, $p < 0.01$) (Gardner et al., 2007). .

Summary of practice environment review of research. The research has demonstrated that the practice environment does have an influence on nursing perceptions of (a) job satisfaction, (b) autonomy, (c) advancement opportunities, (d) supportive management, (e) staffing and (f) collaborative relationships (Begat, Ellefsen, & Severinsson, 2006; Boyle, 2004; Friese, 2005; Gunnarsdottir, Clarke, Rafferty, & Nutbeam, 2007; Hayhurst et al., 2005; Lake & Friese, 2006; Lavoie- Tremblay et al., 2005; Lucero & Sousa, 2006; Patrician, 2002; Rathert & May, 2007). In addition, there is substantial evidence that Magnet designated facilities have better patient care outcomes and have nurses that are satisfied with their jobs and work environment (Aiken, Smith, & Lake, 1994; Friese, 2005; Havens & Aiken, 1999; Scott, Sochalski, & Aiken, 1999). However, with this knowledge, nurse leaders continue to struggle in creating environments that attract and retain nurses (Friese, 2005). There appears to be a lack of research integration into clinical practice.

Job Satisfaction Review of Literature

The following is a review of literature on job satisfaction (Aiken, Clarke & Sloane, 2002; Kovner, Brewer, Wu, Cheng & Suzuki, 2006; Gunnarsdottir et al., 2007; Lacshinger, Finegan, & Shamian, 2001; Buerhaus, Donelan, Urlich & Kirby, 2005; Leveck & Jones, 1996).

Aiken, Clarke and Sloane (2002) examined the effects of nurse staffing and organizational support on nurse dissatisfaction with their jobs, nurse burnout and reports of quality patient care. Their results demonstrated that organizational and managerial support for nursing had a significant effect on nurse dissatisfaction and burnout. This was an International Hospital Outcomes study which included three overlapping sources of data: surveys from nurses, patient discharge data and secondary data on hospital characteristics. The countries participating in this study included the United States (Pennsylvania), Canada (excluding the province of Alberta), the UK (England and Scotland) and Germany. Hospital nurses were surveyed to obtain information related to organizational attributes, managerial policies, staffing, job satisfaction, burnout, and nurse assessed patient care outcomes. The following measures were captured in this study: a) nursing staffing provided via nurse self-report, b) Nursing Work Index measured organizational support for nursing practice, c) nursing job satisfaction, d) Maslach Burnout Inventory (MBI), and e) nursing reports of quality of hospital care (Aiken, et al., 2002).

Aiken et al. (2002) reported that the United States (US) has a shorter patient hospitalized length of stay as compared to other countries. In addition, US nurses have fewer patients in their care assignments (6.3 ± 1.4). Interestingly, the percentage of

nurses dissatisfied with their present job (48.1) and percentage of nurses with burnout scores above norms for medical personnel (54.2) was higher in the US nurses than all the other participating countries. Further, 20.8% of the US nurses rated the quality of care on the nursing unit as fair/poor; 30.8% viewed the care on their last shift as fair/poor, 66.3% were not confident that patients can manage care after discharge and 47% reported that the quality of care in their hospital has deteriorated over the past year (Aiken, et al., 2002). Pertaining to the nursing work environment, Aiken et al. (2002) found that nurses that work in hospitals with minimal support for nursing care were twice as likely to report dissatisfaction with their jobs and have burnout scores above published norms for medical personnel. In addition, both nurse staffing and organizational support for nursing care had a significant impact on nurse-assessed quality patient care. Also, better staffing was positively related to with higher nurse-assessed quality of care (Aiken, et al., 2002).

Kovner, Brewer, Wu, Cheng and Suzuki (2006) investigated the factors associated with job satisfaction using a sample of RNs working in metropolitan statistical areas (MSAs). Four thousand RNs were randomly selected from 40 MSAs to receive a mailed questionnaire. The final sample included 1,638 RNs. Each participant completed a demographic survey, a survey identifying MSA characteristics (i.e.: medical, surgical, and other specialists per 1,000 population and primary care practitioners per 1,000), a RN perception of the labor market (representing movement constraints) and work setting and work environment information (i.e.: autonomy, distributive justice, work group cohesion, supervisory support, work-family and family-work conflict, promotional opportunity, work motivation and satisfaction). Job

satisfaction was assessed using the Quinn and Staine's facet-free job satisfaction scale (with slightly different response items) and work attitudes were assessed via tools used in previous research. Kovner et al. (2006) used ordinary least squares analysis to determine the significant determinants of job satisfaction. They noted that the majority of variance (54%) in work satisfaction can be explained by the work setting variables: autonomy (r = 0.106), distributive justice (r = 0.087), group cohesion (r = 0.083), promotional opportunities (r = 0.091), supervisor support (r = 0.081), work-family conflict (r = - 0.077), and organizational constraint (r = -0.154). In summary, Kovner et al. (2006) determined from their study model that individuals tend to have greater levels of job satisfaction when they have higher levels of autonomy, believe that there is fairness in the application of policies and procedures and pay and feel supported by their supervisor.

Gunnarsdottir, Clarke, Rafferty and Nutbeam (2007) studied the effects of front-line management, staffing and nurse-doctor relationships as predictors to nurse and patient care outcomes. Nurses (n = 695) working in an Iceland hospital were asked to complete the following surveys to measure job and patient care environment satisfaction, burnout and perceptions of quality patient care delivery: (a) the Nursing Work Index-Revised (NWI-R), (b) the Maslach Burnout Inventory (MBI) and (c) assessment of nursing perceptions of quality patient care survey. Gunnarsdottir et al. (2007) found that unit-level management support and staffing were significantly independent predictors to nursing job satisfaction. In addition, unit-level support and nurse – physician relationships were statistically significant predictors to nursing perceptions of quality patient care (Gunnarsdottir, et al., 2007).

Lacshinger, Finegan, and Shamian (2001) tested a theoretical model, derived from Kanter's theory about employee behaviors in response to the work environment, denoting relationships among structural and psychological empowerment (human response to events), and job strain and work satisfaction. Lacshinger et al. (2001) hypothesized that structural empowerment would have a direct positive effect on psychological empowerment and job satisfaction, with job strain being the mediator between these two variables. In addition, they hypothesized that psychological empowerment would lead to decreased feelings of job strain, therefore enhancing job satisfaction. The sample consisted of randomly selected males (n=300) and female (n=300) nurses who worked in urban hospitals located in Ontario, Canada. Instrumentation for this study included the following: (a) the Conditions for Work Effectiveness Questionnaire (CWEQ-II) measured structural empowerment (information, support, resources and opportunity), (b) the Psychological Empowerment Scale that measured 4 components (meaningful work, competence, autonomy and impact), (c) a 4 item measure of work satisfaction adapted from the Job Diagnostic Survey, and (d) a modified version of the Job Content Questionnaire that measured strain. Lacshinger et al. (2001) noted that structural empowerment had a direct, positive effect on psychological empowerment (beta=0.46), meaning that the work environment impacts the staff nurses' feelings of empowerment. In addition, psychological empowerment had a strong direct negative effect on job strain (beta = - 0.45) and a direct positive effect on job satisfaction (beta = 0.30). In other words, psychological empowerment can influence job strain and job satisfaction (Lacshinger, et al., 2001). They also noted that structural empowerment had a strong direct effect (beta = 0.38)

and indirect effect (beta = 0.15) on job satisfaction (Lacshinger, et al., 2001). There was a direct effect (not significant) of job strain on job satisfaction (beta = 0.06). Lacshinger et al. (2001) expressed that the mediating roles that both psychological empowerment and job strain fulfill, explain why structural empowerment influences job satisfaction. Lacshinger et al. (2001) denoted that job strain does not predict job satisfaction.

In the following study, Buerhaus, Donelan, Urlich and Kirby (2005) investigated RN's perceptions of nursing and their job satisfaction. Data for this study came from two national random surveys of RNs. One survey was sponsored by NurseWeek and the American Organization of Nurse Executives (AONE) and was targeted to RNs to provide their perspective of the nursing shortage. A total of 4,108 randomly selected RNs completed the survey in late 2001 and early 2002; for a 53% response rate. The second survey was funded by Johnson & Johnson and Nurse Spectrum (formerly NurseWeek) and was conducted in 2004. The sample of RNs (n = 1,697) was randomly selected with a response rate of 53%. For both surveys Harris Interactive was selected to conduct the surveys. Buerhaus et al. (2005) reported that RNs were more satisfied with their jobs in 2004 (34%) as compared to 2001/2002 (21%). Further, they demonstrated that more RNs in both surveys were satisfied with their jobs than those who were dissatisfied. To further explain the reasons for this increase in satisfaction, a multiple regression analysis was conducted by the researchers. Upon further investigation, they found that the increase in RN job satisfaction was attributed to: organizations with a patient care focus, leaders recognized the importance of the team members' family and individual lives, agreement with salary and benefits, job security,

and positive relationships with management and other nurses (Buerhaus, et al., 2005). In addition, findings predictive of job satisfaction included feelings of stress and burn out, burdened with too many non-nursing tasks, increased nurse-patient ratios and a negative view of the organization (Buerhaus, et al., 2005). Buerhaus et al. (2005) also wanted to identify the predictors of RN satisfaction with their present job. Interestingly, the same variables identified as predictors for RN job satisfaction also correlated with satisfaction with nursing as a career (Buerhaus, et al., 2005). In summary, Buerhaus et al. (2005) demonstrated that from 2002 to 2004 both job satisfaction and satisfaction with nursing as a career increased. Further, drivers to improved job satisfaction and RN career choice is attributed to organizations being patient and team member focused (Buerhaus et al., 2005).

Leveck and Jones (1996) proposed to model the nursing practice environment in relation to the variables management style, group cohesion, job stress and organizational and professional job satisfaction. In addition, they investigated the effects between these variables and staff retention and quality of nursing care. This study used a cross-sectional structural equation modeling design to test a theoretical model of nursing unit quality of care and staff turnover. The setting for this study included four acute care hospitals. Registered nurses (RN), working at least 30 hours per week and unit tenure of 3 months or greater, on sixty-three nursing units were eligible for participation. For the unit to be included in the sample, a minimum of 4 RN responses was necessary, hence 50 units with a total of 358 out of 611 RNs were included in the sample. Unit level quality of care data were collected from 525 patient charts and retention data were collected from the total RN sample (n=611) from the

participating units (n=50). Other data variables collected at the unit level include budgeted RN positions, RN vacancies, and numbers and types of full-time and part-time staff that work on the unit. In addition, demographic data were obtained from the participating RNs. There were two control variables in this study: unit experience (tenure) and clinical service (type of unit working). Other variables were assessed in this study which include: perceptions of management style using Likert's Profile of Organizational Characteristics, views of colleague's group cohesion and morale using the Group Cohesion Scale, perceptions of job stress via The Job Stress Scale, opinions of organizational job satisfaction by means of Organizational Work Satisfaction Scale, perceptions of professional fulfillment by way of the Job Satisfaction Scale and staff retention for each nursing unit. Leveck and Jones (1996) found that management style exhibited no direct effects on professional job satisfaction. However, management style contributed significantly to total variable effects ($\beta = 0.48$) on professional satisfaction via group cohesion ($\beta = 0.21$) and job stress ($\beta = 0.27$) (Leveck & Jones, 1996). In addition, professional job satisfaction influenced staff retention indirectly via group cohesion ($\beta = 0.24$) and job stress ($\beta = - 0.30$) and management style indirectly affected staff retention through professional job satisfaction via group cohesion ($\beta = 0.16$) and job stress ($\beta = 0.20$) (Leveck & Jones, 1996).

Summary of job satisfaction review of research. Factors that affect job satisfaction include autonomy, supervisory support, distributive justice (fairness in applying policies and procedures). In addition, Gunnarsdottir et al. (2007) found that supervisory support and staffing were significantly independent predictors to nursing job satisfaction and that unit management support and nurse-physician collaboration

were key determinants to nursing perceptions of quality nursing care. Further, Lacshinger et al. (2001) noted that psychological empowerment (human response to events) had a strong negative direct effect on job strain ($\beta = -0.45$) and a direct positive effect on job satisfaction ($\beta = 0.30$). In addition, structural empowerment had a strong direct effect ($\beta = 0.38$) and indirect effect ($\beta = 0.15$) on job satisfaction. Buerhaus et al. (2005) indicated that factors associated with an increase in RN job satisfaction are: organizations with a patient care focus, agreement with salary and benefits, managerial support, and positive relationships with management. In summary, there are multiple factors that contribute to RN satisfaction; whereby management support and the relationship a team member has with their nurse manager are major contributors (Kovner et al., 2006; Gunnarsdottir et al., 2007; Buerhaus et al., 2005).

Patient Outcomes Review of Literature

The following studies are a review of literature for patient outcomes (Boyle, 2004; Blegen, Goode & Reed, 1998; Needleman, Buerhaus, Mattke, Stewart, & Zelevinsky, 2002; Unruh, 2003). Boyle (2004) studied the effect of organizational characteristics on patient care outcomes. This author noted that autonomy/collaboration had a statistically significant, positive relationship with pressure ulcer rates. Boyle (2004) found no significant correlation between adverse events, practice control and nurse management support. Although not significant, nurse manager support did have an inverse correlation with pressure ulcer occurrence ($r = - 0.31$). In this study, units with higher levels of autonomy and collaboration had lower incidences of pressure ulcers, falls, pneumonia, death, and shorter lengths of stay, as compared to those nursing units with lower levels of autonomy and collaboration (Boyle, 2004).

Blegen, Goode, and Reed (1998) studied the relationship between nurse staffing and six patient care outcomes: medication errors, patient falls, urinary and respiratory tract infections, skin breakdown, patient complaints and mortality. They determined that when patient acuity was controlled, there was an inverse relationship between RN hours of care and rates of medication errors, pressure ulcers and patient complaints. In addition, there was a direct relationship with total hours of care from all nursing staff and pressure ulcer rates, complaints, and mortality (Blegen, et al., 1998).

Needleman, Buerhaus, Mattke, Stewart, and Zelevinsky (2002) studied the impact of nursing hours of care on patient care outcomes using administrative data from 1997 for 799 hospitals in 11 states. The sample consisted of 5,075,969 medical patients and 1,104,659 surgical patients. Measures the investigators controlled included adverse outcomes, staffing and risk adjustment and characteristics of the hospitals. Adverse outcomes that were controlled during the analysis were: length of stay, urinary tract infection (UTI), pressure ulcers, hospital acquired pneumonia, shock or cardiac arrest, upper gastrointestinal bleeding (UGI bleed), hospital acquired sepsis, deep vein thrombosis, central nervous system complications, in-hospital death, failure to rescue, wound infection, pulmonary failure and metabolic derangements. Nursing hours of care that were controlled included the number of hours of nursing care per patient day, the proportion of total hours of nursing care via of the registered nurse and licensed practical nurse in aggregate and by discipline and registered nurse hours as a proportion of licensed hours. Hospital characteristics that were controlled in this study include the number of beds, teaching status and location and in addition, patient's risk adjustment which included age, gender, insurance provider, rate of an adverse outcome in the

diagnostic related group and presence or absence of 13 chronic disease states (Needleman, et al., 2002).

Study findings demonstrated that for medical patients a higher proportion of licensed hours of care provided by the RN and more RN hours per day have an association with shorter lengths of stay (- 1.12; 95% confidence interval, -2.00 to -0.24; $p<0.01$ and -0.9; 95% confidence interval, -0.13 to -0.05; $p<0.001$ respectively) , lower rates of UTIs (0.48; 95% confidence interval, 0.38 to 0.61; $p< 0.001$ and 0.99; 0.98 to 1.00; $p <0.003$ respectively) and reduced UGI bleeding (0.66; 95% confidence interval, 0.45 to 0.96; $p<0.03$ and 0.98; 95% confidence interval, 0.97 to 0.99; $p <0.007$ respectively) (Needleman, et al., 2002). In addition, a higher proportion of RNs (not a greater number of RN hours of care) was related to lower rates of pneumonia (0.59; 95% confidence interval, 0.44 to 0.80; $p<0.001$), shock or cardiac arrest (0.46; 95% confidence interval, 0.27 to 0.81; $p<0.007$) and failure to rescue (0.81; 95% confidence interval, 0.66 to 1.00; $p<0.05$) (Needleman, et al., 2002). For surgical patients, a higher proportion of RN hours were associated with lower rates of UTI (0.67; 95% confidence interval, 0.46 to 0.98; $p <0.04$). Further, a greater number of RN hours per day were related to a lower rate of failure to rescue (0.98; 95% confidence interval, 0.96 to 0.99; $p<0.0008$) (Needleman, et al., 2002). Hence, Needleman et al. (2002) found associations between higher levels of RN staffing and lower rates of adverse patient outcomes (Needleman, Buerhaus, Mattke, Stewart, & Zelevinsky, 2002).

In another study, Unruh (2003) examined the relationships between the yearly percent change in the number of licensed nurses in relation to patient load and skill mix. In addition, Unruh (2003) investigated whether lower levels of licensed nurses resulted

in higher levels of patient complications. Complications that were evaluated in this study include: atelectasis, decubitus ulcers, falls, pneumonia, falls, pneumonia, post - surgical and treatment infections and urinary tract infections. A convenience sample of all Pennsylvania, acute care hospitals was used for this study. Nursing data and hospital characteristic information were collected via the Pennsylvania Department of Health (PDH) and the American Hospital Association (AHA); for the years 1991 to 1997. In addition, patient –level information was obtained from the Pennsylvania Health Care Cost Containment Council (PHC4). Unruh (2003) defined her measures for this study as the number of licensed nurses, nurse/patient ratio (with and without adjusting for patient acuity) and the proportion of licensed staff to total staff. Patient load was measured via outpatient adjusted patient days (number of patients in the hospital times the length of stay), plus the estimated number of outpatient days. Patient load was assessed two ways; via the number of patients care for in an assignment and the number of patients adjust for acuity. To adjust for acuity, Unruh (2003) multiplied the adjusted patient days by the sum of the MediQual severity scores for each hospital; and divided that number by the amount of patients. Adverse events were extracted from the medical records using ICD-9 codes. These events are defined as conditions that are caused by and not prevented by medical management.

Unruh (2003) validated that hospitals with more patients have greater numbers of adverse events in all adverse event categories ($p < 0.0001$) and hospitals with higher acuities have more adverse events ($p < 0.0001$). In addition, hospitals that are efficient in throughput, have fewer adverse events ($p <0.0001$). Hospitals with more licensed nurses (number of patients as constant) had significantly lower rates of atelectasis,

decubiti, falls and urinary tract infections and a higher rate of pneumonia (Unruh, 2003). Further, hospitals with a greater proportion of licensed nurses to total nursing staff had significantly lower rates of decubiti and pneumonia. There was a positive relationship between the proportion of licensed nurses to total nursing staff and falls. Unruh (2003) proposed that the number of licensed nurses versus the proportion of licensed nurses to total nursing staff is a better predictor of adverse events. In addition, a 10% increase in the mean value of licensed nurses (n = 28) the following outcomes would be achieved: a decrease in atelectasis by 1.5%, a reduction in decubitus ulcers by 2%, a decrease in falls by 3% and urinary tract infections by 1% (Unruh, 2003).

Summary of patient outcome review of research. Factors contributing to patient care outcomes were explored in the literature. Boyle (2004) studied the effect of organizational characteristics on patient care outcomes. She found that units with higher levels of autonomy and collaboration had lower incidences of pressure ulcers, falls, pneumonia, death and shorter lengths of stay as compared to units with lover levels of autonomy and collaboration. Needleman et al. (2002) studied the impact of nursing hours of care on patient care outcomes. Results from this study indicate that a higher proportion of licensed hours of care provided by an RN and more RN hours per day have an association with a shorter length of stay and lower rates of upper gastrointestinal bleeding. In addition, a higher proportion of RNs related to lower rates of pneumonia, shock or cardiac arrest, and failure to rescue. Unruh (2003) studied the effects of staffing levels on patient complications. Unruh (2003) concluded that the number of licensed nurses versus the proportion of licensed nurses to total nursing staff is a better predictor of adverse events. Further, Unruh (2003) noted that a 10% increase

in the mean value of licensed nurses can have the following effects on patient outcomes: a 1.5% decrease in atelectasis, 2% drop in pressure ulcers, a 3% decline in falls and 1% decrease in urinary tract infections. Findings suggest that work environment characteristics such as autonomy, collaboration and staffing influence patient care outcomes (Boyle, 2004; Blegen, Goode & Reed, 1998; Needleman, et al, 2002; Unruh, 2003).

Nursing Outcomes Review of Literature

The following is a review of empirical literature on the nursing outcomes: patient and physician satisfaction with nursing care (Gunnarsdottir, Clarke, Rafferty and Nutbeam, 2007; Larrabee et al., 2004; Riccio, 2000; Shen, Chiu, Hu Y, & Chang, 2011; Larrabee & Bolden, 2001). Gunnarsdottir, Clarke, Rafferty and Nutbeam (2007) studied the effects of front-line management, staffing and nurse-doctor relationships as predictors to nurse and patient care outcomes. The researchers found that unit-level management support and staffing were significantly independent predictors to nursing job satisfaction. In addition, unit-level support and nurse – physician relationships were statistically significant predictors to nursing perceptions of quality patient care (Gunnarsdottir, et al., 2007).

Larrabee et al. (2004) investigated the influence of RN job satisfaction, the environment of care, the organization of care, and patient characteristics on patient satisfaction with inpatient hospital care. The study sample consisted of patients (n=362) hospitalized on 2 medical units, 2 surgical units and 3 intensive care step down units at a 450 bed academic medical center. Further, RNs (n=90) that worked on these units were included in the study sample. Patients were asked to take questionnaires that

measured: patient satisfaction via the Patients' Judgements of Nursing Care Tool; patient-perceived nursing care using the Caring Behaviors Inventory; health status via the Short-Form Health Survey (SF-12); and quality of life by means of the Quality of Life Index. Nurse job satisfaction was measured using the Work Quality Index and RN perceptions of nurse manager leadership were assessed using the Multifactor Leadership Questionnaire. In addition, RNs were asked to complete the Nurse Collaborative Practice Scale to assess nurse-physician collaboration. Unit turbulence and staffing information was collected from an existing hospital database. The variables that Larrabee, et al (2004) identified as having a significant and positive relationship with patient satisfaction: patient-perceived nursing care ($r = .69$, $p<.01$), patient age ($r = .22$, $p<.01$), quality of life ($r = .19$, $p<.01$), and nurse-physician collaboration ($r =.16$, $p<.01$). Further, patient-perceived nursing care ($\beta =.02$, $SE = .001$, $p<.001$), nurse-physician collaboration ($\beta =.02$, $SE = .006$, $p=.003$) and quality of life ($\beta =.13$, $SE = .006$, $p=.04$), were predictors of patient satisfaction (Larrabee et al., 2004).

Riccio (2000) studied the perceptions of patients, physicians, and nurses regarding their satisfaction with nursing care. The sample of patients (n=135) was randomly selected from a pool of patients that received nursing care at home for at least 1 month. Physicians (n=99) participating in the study were randomly selected based on a group of physicians who had referred patients to the home care agency throughout a 1 year period. In addition, nursing participants (n=20) were those individuals that worked in the home health care setting during the year prior. One questionnaire was used for this study and was given to each other by the study participants. This instrument is based on the American Nurses Association community nursing standards of care. There

were 4 subscales: technical, communication/psychosocial, professional, and teaching. Participants responded to questions using a 5 point Likert-type scale (5 - "strongly agree" and 1- "strongly disagree"). Study findings convey that 20% of the patients were satisfied with nursing care, 71% were undecided, and 9% were dissatisfied (Riccio, 2000). Regarding the subscale findings, patients were: most satisfied with the professional attributes of nursing, undecided about nurses' communication skills, and most dissatisfied with nursing ability to teach, and more than 60% were undecided about the technical aspect of nursing (Riccio, 2000). Physician satisfaction with nursing care was reported as the following: 19% were satisfied with nursing care, 71% undecided, and 10% were dissatisfied. Further, physicians were most satisfied (60%) with the teaching abilities of nursing and most undecided (74%) about the technical aspects of nursing care (Riccio, 2000). From a nursing perspective, 70% of the nurse participants conveyed that they were satisfied with the care they provided to patients, 20% undecided, and 10% were dissatisfied with the quality of nursing care that they provided. Between 80 -90% of the nurses reported agreement that they have effective technical, communication, professional and teaching abilities (Riccio, 2000).

Shen, Chiu, Hu Y, and Chang (2011) compared hospital patient and nurses' perceptions of the hospital setting, nurse physician relationships and quality of nursing care with the aim to determine factors that predict quality of care (from a nursing and patient perspective). A total of 575 patients and 220 nurses (across 13 units) participated in the study. Patients and nurses were given a questionnaire that requested demographic information and then three questions asking them to rate the current environment on the hospital unit, their perceptions about nurse-physician relationships,

and their opinion about the quality of nursing care on the unit. Shen et al. (2011) convey that 62 patients (10. %) and 70 nurses (32.2%) report that the hospital environment was very poor or poor. Further, 22 patients (3.8%) and 55 (26%) of the nurses reported that nurse physician collaboration was very bad or bad (Shen, et al., 2011). Regarding quality of nursing care, only 4 patients (n=25) and 52 nurses (24%) reported the quality of nursing care as very bad or bad. Hence, patients viewed the hospital environment, nurse physician collaboration and quality of nursing care more positively as compared to nurses (Shen, et al., 2011). In addition, Shen et al. (2011) suggest that perception of nurse physician relationships ($\beta = 0.76$, $p<.001$), hospital environment ($\beta = 0.31$, $p<.001$), and years of education ($\beta = -0.014$, $p<.029$) were the greatest predictors of quality of nursing care for patients and accounted for 73.6% of the variance in quality of care. From a nursing perspective, nurse physician relationships ($\beta = 0.56$, $p<.001$) and hospital environment ($\beta = 0.53$, $p<.001$) were the key predictors of quality of nursing care and accounted for 43.9% of the total variance (Shen, et al., 2011).

Larrabee and Bolden (2001) investigated the factors that influence patient satisfaction with nursing care. One hundred ninety-nine subjects participated in the qualitative study. Patients were interviewed by a member of the research team within 48 hours of discharge. The patients were asked to define what they considered to be "good nursing care" (p.35). Feedback from patients was grouped into themes by the first researcher and then a second review was conducted by another member of the research team to validate the first researcher's findings. Larrabee and Bolden (2001) noted the following themes that describe quality nursing care from the patient's point of

view: (a) “providing for my needs”, (b) “treating me pleasantly”, (c) “caring about me”, (d) “being competent”, and (e) “providing prompt care” (p.36).

Summary of nursing outcome review of research. Study results demonstrate that management support and nurse – physician relationships are statistically significant predictors to nursing perceptions of quality patient care (Gunnarsdottir, et al, 2007). Further, Larrabee et al., (2004) identified other variables having a significant and positive relationship with patient satisfaction: patient-perceived nursing care ($r = .69$, $p<.01$), patient age ($r = .22$, $p<.01$), quality of life ($r = .19$, $p<.01$), and nurse-physician collaboration ($r =.16$, $p<.01$). Patient-perceived nursing care ($\beta =.02$, $SE = .001$, $p<.001$), nurse-physician collaboration ($\beta =.02$, $SE = .006$, $p=.003$) and quality of life ($\beta =.13$, $SE = .006$, $p=.04$) were predictors of patient satisfaction (Larrabee et al., 2004). In another study, patient’s described quality nursing care as being treated by the healthcare team in a caring and respectful manner, receiving timely care, having the knowledge and skills to provide care, and responding to patient care needs (Larrabee & Bolden, 2001) Riccio (2000) noted that patients were most satisfied with the professional attributes of nursing, undecided about nurses’ communication skills, and most dissatisfied with nursing ability to teach, and more than 60% were undecided about the technical aspect of nursing. Physician satisfaction with nursing care was reported as: 19% were satisfied with nursing care, 71% undecided, and 10% were dissatisfied. Further, physicians were most satisfied (60%) with the teaching abilities of nursing and most undecided (74%) about the technical aspects of nursing care. In summary, key contributors to patient satisfaction with the quality of nursing care are nurse-physician collaboration, perceived nursing care, and the hospital environment

(Larrabee et al., 2004; & Shen, et al., 2011).

Hospital Outcomes Review of Literature

The following is a review of the literature for the hospital outcomes nursing turnover rate (Hayes et al., 2006; Strachota, Normandin, O'Brien, Clary & Krukow, 2003). RN turnover and vacancy rates are common indicators nurse leaders monitor. When turnover and vacancy rates are high, nurse leaders may use supplemental staff (travelers or agency) to support nursing unit functions. Strachota, Normandin, O'Brien, Clary and Krukow (2003) espouse that turnover compromises patient care and adds to the cost of healthcare. Rousseau and Libuser (1997) convey that maintaining core team members is advantageous to an organization because they are knowledgeable about the organization and work processes that give it a competitive edge. In addition, Rousseau and Libuser (1997) relayed that retaining core workers provides the organization with "stability, continuity and learning" (p.105). In addition, core team members give the organization other benefits such as consistent behavior and job performance.

Hayhurst, Saylor and Stuenkel (2005) studied perceptions of the practice environment among nurses who left their unit as compared to those who stayed. They found that nurses who remained on their nursing unit had a better perception of peer cohesion, supervisory support, and autonomy versus those who left (Hayhurst, et al., 2005). In addition, Coomber and Barriball (2007) conducted a review of literature with the aim to determine the impact of job satisfaction on RN intent to leave and turnover. Their findings suggest that work related stress and leadership are contributors to RN dissatisfaction and turnover (Coomber & Barriball, 2007).

Hayes et al. (2006) conducted a literature review on nursing turnover. They

examined the current knowledge related to nursing turnover, identified existing definitions of turnover, ascertained the determinants of nurse turnover and explored the costs and impact of turnover on patient, nursing and system outcomes. One hundred – thirty articles were included in this analysis, whereby 37 were used for their published report. Thirty-two of the articles identified the causes of turnover and the remaining 5 articles examined the implications of turnover. Hayes et.al (2006) found variation in the measurement and definition of turnover in their literature review. They identified determinants of nursing turnover as job satisfaction and expressed intent to leave the organization. Variables that moderate the relationship between job satisfaction and turnover and turnover intent and turnover behavior involve professional commitment and personal outlook. Organizational characteristics were also noted to impact turnover behavior and include: workload, management style, empowerment, autonomy, promotional opportunities and work schedules. Hayes et al. (2006) recommended that leadership involvement in the improvement of the nursing practice environment is critical.

Strachota et al. (2003) conducted a study to determine the factors that cause RN turnover. The study sample consisted of RNs who voluntarily terminated or changed employment status within a 9 month period. An open-ended questionnaire was created and used during the telephone interviews. A total of 84 RNs were surveyed. The researchers individually analyzed data, established common themes and categories and established frequency distributions. To establish inter-rater reliability among the researchers, the surveys were redistributed to another author who evaluated the responses and created frequency distributions. The frequency distributions were then

compared with 54% to 99% agreement; most questions achieved 75% agreement. Strachota et al. (2003) found that new nurses left more often than experienced nurses. Even so, 52% of the study sample that left the organization had been nurses for greater than 10 years. Reasons that RNs either leave the organization or change units include: work hours (50%) , better job opportunity (31%), family reasons (19%), unsatisfactory pay and benefits (15%), poor staffing (15%), lack of management support (15%), practice environment (14%), lack of staff (12%), no opportunity for advancement (8 %), returned to school (8%), personal health problems (7%) , and moved (5%). Further, the researchers conveyed that 37% of the RNs reported being unhappy about the staffing levels, 37% was dissatisfied with management support and 37% were unhappy about the variety of hours required to work. RNs (46%) reported that due to low staffing and increased demands they were concerned regarding the level of quality care they provided to their patients and 52% reported dissatisfaction with nursing unit management (Strachota, Normandin, O'Brien, Clary & Krukow, 2003).

Summary of hospital outcomes review of research. Key contributors to RN turnover and higher levels of vacancy rates on the nursing units are perceived lack of managerial support (Hayhurst et al., 2005; Coomber & Barriball, 2007; Strachota et al., 2003); management style (Hayes et al., 2006), staffing/workload (Hayes et al., 2006; Strachota et. al, 2003), practice environment (Strachota et al., 2003), and work schedules (Hayes, et. al, 2005; Strachota et al., 2003).

RN Hours of Care Review of Literature

The following is a review of empirical literature for RN hours of care (Needleman et al., 2011; Aiken, Clarke, Sloane, Sochalski, & Silber, 2002; Sochalski,

2001). Nursing (RN) hours of care is defined as the number of productive (excluding non-productive education, in-service, vacation and sick time) registered nurse hours worked to provide direct patient care (Donaldson, et. al, 2005). Needleman et al., (2011) conducted a retrospective observational study to evaluate the impact of nurse staffing on inpatient hospital mortality. These researchers found that a patient's risk of death increased when exposed to RN hours of care that were 8 hours or more below the target staffing levels or when there was high nursing turnover. Needleman et al. (2011) recommend creating staffing plans that are flexible and based on patient acuity and need. In addition, study findings suggest that staffing be adjusted at evaluation need at least on a shift-by-shift basis (Needleman, et. al., 2011).

Aiken, Clarke, Sloane, Sochalski, and Silber (2002) conducted a study to determine the relationship between nurse-patient ratio and patient mortality, failure to rescue with surgical patients causes of nurse retention. Data collection occurred on 168 adult general hospitals in the state of Pennsylvania. In addition, 10,184 nurses were surveyed and patient outcomes (30-day mortality and failure-to-rescue) data from 232,342 surgical discharges were collected and analyzed. Nurses were asked for demographic information, work history, and workload. Further, questions related to workload, job satisfaction, and burnout were asked. In addition, a nursing staffing measure was calculated as the mean patient load across all RN who reported having responsibility for at least 1 but fewer than 20 patients. Aiken et al. (2002) noted that higher levels of emotional exhaustion and greater job satisfaction had a strong significant relationship to nurse-patient ratios. In addition, an increase of 1 patient per nurse increased burnout by 23% (1.23; 95% CI, 1.13-1.34) and increased job

dissatisfaction by 15% (1.15; 95% CI, 1.07-1.25) (Aiken, et al., 2002). Further, nurse staffing had an effect on patient mortality (1.07; 95% CI, 1.03-1.12) and failure-to-rescue (1.07; 95% CI, 1.02-1.11) (Aiken et al., 2002).

Sochalski (2001) investigated the effect of nurse staffing on quality of nursing care. In addition, Sochalski (2001) explored the effect of nurse practice environment conditions on job stress and satisfaction. A random sample of RNs (50% of total) licensed in the State of Pennsylvania were mailed surveys. The mailed survey packet included: the Revised Nursing Work Index (NWI-R); the Maslach Burnout Inventory; questions regarding the type of unit they worked and their work experience; questions related to their nursing care workload; assessments of quality of care; questions related to work environment safety; and demographic information. A total of 42,000 surveys (52%) were returned; whereby 14,000 (34%) indicated that they worked in a hospital. Of this sample, 13,200 were included in the study as they worked in 1 of 210 acute care hospitals in Pennsylvania. Study findings reported by Sochalski (2001) showed that nurses with lower ratings of quality patient care have a higher number of patient care tasks not completed ($r=-.59$, $p<.001$). Workload was also a key variable that effected a nurses perception of quality nursing care ($r=-.24$, $p<.001$). Sochalski (2001) suggested that the combination of both higher workloads and unfinished care tasks has a significant influence on quality of care. RNs who rated that unit's quality of nursing care as poor conveyed that they had higher levels (on a scale of 1-4; with 4 being high) of medication errors ($M= 2.56$), nosocomial infections ($M=2.96$), and patient falls with injury ($M=2.71$). Hence, nursing perceptions of workload and number of unfinished patient care tasks are contributors to the assessment of quality of nursing care

(Sochalski, 2001). Regarding job satisfaction, medical –surgical nurses reported lower levels of job satisfaction (M=2.44, SD = .94) when compared to nurses working on other types of units. Further, these same nurses reported significantly higher level of emotional exhaustion (M=27.37, SD = 11.9) (Sochalski, 2001).

Summary of RN hours of care review of research. Aiken, et al (2002) demonstrated that RN hours of care (nurse-to-patient ratios) effects patient mortality (1.07; 95% CI, 1.03-1.12) and failure-to-rescue (1.07; 95% CI, 1.02-1.11). In addition, Needleman et al. (2011) identified that a patient's risk of death increased when exposed to RN hours of care that were 8 hours or more below the target staffing levels or when there was high nursing turnover. Further, findings reported by Sochalski (2001) suggested that the combination of both higher workloads ($r=-.24$, $p<.001$) and unfinished care tasks ($r=-.59$, $p<.001$) have a significant influence on quality of care.

Summary of Study Literature Review

Emotional intelligence is a variable that has linkages to transformational leadership (Skinner & Spurgeon, 2005; Gardner & Stough, 2002; Barbuto & Burbach, 2006; Mandell & Pherwani, 2003; Downey et al, 2006). Empiric literature related to the effect of a nurse manager's emotional intelligence on team member job satisfaction, the practice environment characteristics and patient care outcomes is minimal. Nursing research needs to be conducted in this topic area.

Empiric research has demonstrated that the practice environment does have an influence on nursing perceptions of (a) job satisfaction, (b) autonomy, (c) advancement opportunities, (d) supportive management, (e) staffing and (f) collaborative relationships (Begat, Ellefsen, & Severinsson, 2006; Boyle, 2004; Friese, 2005;

Gunnarsdottir, Clarke, Rafferty, & Nutbeam, 2007; Hayhurst, Saylor & Stuenkel, 2005; Lake & Friese, 2006; Lavoie- Tremblay et al., 2005; Lucero & Sousa, 2006; Patrician, 2002; Rathert & May, 2007). Friese (2005) states that nurse leaders continue to struggle in creating environments that attract and retain nurses. Studying the impact of a NM's emotional intelligence on RN job satisfaction and perceptions of the practice environment may illuminate whether the development of this ability could assist with the creation of a positive effect to work and the practice environment.

Gunnarsdottir et al. (2007) found that supervisory support and staffing were significantly independent predictors to nursing job satisfaction. Other contributors to RN satisfaction are management support and the relationship a team member has with their nurse manager (Kovner et al., 2006; Gunnarsdottir et al., 2007; Buerhaus et al., 2005). Research is lacking in the nursing literature regarding the effect of emotional intelligence on RN job satisfaction. This study intends to explore this relationship.

Findings suggest that work environment characteristics such as autonomy, collaboration and staffing influence patient care outcomes (Boyle, 2004; Needleman et al., 2002; Unruh, 2003; & Aiken, et al, 2002). Factors impacting patient satisfaction with the quality of nursing care are nurse-physician collaboration, perceived nursing care, and the hospital environment (Larrabee et al., 2004; Shen et al., 2011). Research findings indicate factors that influence RN turnover and higher levels of vacancy rates on the nursing units are perceived lack of managerial support (Hayhurst et al., 2005; Coomber & Barriball, 2007; Strachota et al., 2003); management style (Hayes et al., 2006), staffing/workload (Hayes et al., 2006; Strachota et al., 2003), practice environment (Strachota et al., 2003), and work schedules (Hayes et al., 2006; Strachota

et al., 2003). Management style and support appears to be the common factor that affects job satisfaction, the practice environment, patient, nursing and hospital outcomes in the literature. This study investigated the ability emotional intelligence and its effect on RN job satisfaction, influence in the practice environment and impact on patient, nursing and hospital outcomes. Research is lacking in the nursing domain related to the concept EI and the influence on these dependent variables.

Chapter 3

Methods

Introduction

Chapter Three outlines the research methods and the research design. This chapter first describes the sample and setting, inclusion and exclusion criteria, instrumentation, procedures, and approvals, finally followed by the data analysis procedure guiding this study.

Design

This study used a cross-sectional, correlational research design where relationships between EI, RN job satisfaction and RN perceptions of the work environment were investigated. In addition, the associations between EI, RN job satisfaction and RN perceptions of the work environment were evaluated as to their influence on the dependent variables: patient, nursing and hospital outcomes. The relationship of the moderating variable, RN hours of care, was also be explored as to determine its influence on the association between the independent variables RN job satisfaction and RN perceptions of the work environment, with the dependent variables patient, nursing and hospital outcomes.

Sample and Setting

The targeted sample consisted of 75 NMs and 900 RNs at eight not-for-profit hospitals located in the Southeast region of the United States. Four of the participating

study sites have Magnet designation.

Using a medium effect size ($f^2 = 0.15$) and an alpha of 0.05, the mediation relationship outlined in Aim 2 between the variables EI, RN job satisfaction and RN perceptions of the practice environment demonstrate that a sample size of 75 nursing care units achieves 80% power to detect significance in R^2 change. The sample of 75 nursing care units using a medium effect size of ($f^2 = 0.15$) and alpha of 0.05, achieves 80% power to detect significance in R^2 change for Aim 3, which suggests that hours of care was a moderator between variables (Baron & Kenney, 1986).

Inclusion and Exclusion Criteria

Inclusion criteria. To be considered for inclusion in this study the nurse manager must have supervised registered nurses (RNs) and managed a patient care unit in the hospital setting. In addition, the NM must have managed one of the following types of nursing units: medical surgical, telemetry, labor and delivery, pediatrics or adult or neonatal critical care.

RN team member inclusion criteria included: NM participation in the EI and demographic assessment surveys, part-time or full-time equivalent core status, spend greater than 50% of their time providing direct patient care and tenure on the unit was greater than 3 months.

Exclusion criteria. Exclusion criteria excluded NMs that supervised RNs in the operating room (OR), post anesthesia care unit (PACU), emergency room (ER), intravenous therapy (IVT) and wound ostomy care nurses (WOCN). The surgical departments (OR and PACU) and ER are excluded due to the differing staffing metrics and because they do not monitor all three patient outcomes variables defined in this

study. The intravenous therapy and wound ostomy care nurse teams are excluded due to the minimum number of RN team members supervised.

Instrumentation and Measurement for Outcomes

The following instruments were utilized: a self-designed demographic tool, the Mayer Salovey Caruso, Emotional Intelligence Tool (MSCEIT) (2002), the Developing Organizational Capacity Tool (2000), and the Practice Environment Scale (2002). Outcome measurement data used for this study include fall rates, pressure ulcer rates, medication error rates, patient satisfaction with nursing care, physician satisfaction with nursing care, RN turnover rates and RN vacancy rates.

Emotional intelligence. Nurse Manager EI was measured using the Mayer Salovey Caruso Emotional Intelligence Tool (MSCEIT) Version 2.0 (2002) (Appendix A). The MSCEIT Version 2.0 (2002), is in its third generation and has evolved from scales which measure related constructs such as emotional creativity, social intelligence and nonverbal communication (Mayer, Caruso, Salovey, & Sitarenios, 2003). The MSCEIT a 141 item self-report instrument, was used to measure a nurse manager's ability to problem solve and respond to emotional tasks. The instrument was administered on-line and a scored data sheet was obtained from Multi-Health Systems, Inc. (MHS) for data analysis. The estimated amount of time for each nurse manager to complete the EI instrument was 30-45 minutes (Mayer, Salovey & Caruso, 2002).

The MSCEIT provides 15 scores: a Total EI score, two area scores, four branch scores, and eight task scores. The total emotional intelligence score provides an overall index of the participant's emotional intelligence. Two area scores define the participant's ability to interpret emotional information and ability to strategically use

the emotional information. The 4 branch scores decipher the participant's ability to perceive, use, understand and manage emotions in one's self and others. Finally, there are eight task scores which provide the researcher with additional information related to the four branches of EI (each branch of EI was measured via two tasks) (Mayer et al., 2002). The Total EI score was obtained from the MSCEIT appraisal. In addition, the four branches from the total EI score (perceiving, using, understanding and managing emotions) were also assessed (Mayer, et al, 2002).

Mayer, et al. (2003) conducted a study using the MSCEIT V2.0 (2002) to determine if subjects (n= 2,112) from a generalized sample and a group of emotions experts would identify the same correct test answer, to assess the reliability of the EI instrument and to determine the number of factors to identify their EI model. Mayer et al (2003) found a correlation of R (705) = 0.908 among expert and general subjects identifying the same test items correct using the MSCEIT V2.0. In addition, the MSCEIT V2.0 full-test split-half reliability was r (1985) = 0.93 for general and 0.91 for expert consensus scoring (Mayer et al., 2003). Reliability for each of the branch scores for general and expert scoring (respectively) as follows: perceiving .91 and .90, using .79 and .76, understanding .80 and .77 and managing .83 and .81 (Mayer, Salovey & Caruso, 2002). The MSCEIT measured the ability emotional intelligence and was comprised of four branches that intercorrelate positively for both general and expert scoring (Mayer, et. al). Confirmatory factor analysis was conducted on the items included in the MSCEIT to assess validity of the instrument structure. Analysis of the four branch model produced the following goodness-of-fit statistics using consensus scoring and expert scoring (respectively): GFI =.99 and .99, AGFI = .99 and .99, NNFI

=.99 and .94 and RMS = .01 and .03 (Mayer et al.). In addition, the goodness-of-fit statistics validate the tasks outlined in the instrument are associated with the four branches, the branches support the two area scores, and all factors are related to the total score as evidenced by the following fit indicators using consensus and expert scoring: GFI = .96 and .96, AGFI = .95 and .96, NFI = .91 and .90, NNFI = .92 and .90 and RMS= .03 and .03 (Mayer et al.).

RN job satisfaction. RN Job Satisfaction for this study was assessed using the Developing Organizational Capacity survey (Murphy, 2000) (Appendix B). RN participants answered 16 questions with responses identified on a 5 point Likert-type scale. The responses ranged from 1 denoting "Strongly Disagree and 5 signifying "Strongly Agree". Murphy (2000) created the survey for Newmeasures, Inc. by starting with a 120 item survey that measured organizational effectiveness and was used repeatedly by a Fortune 200 and Malcolm Baldridge Award winning companies (N =1,205). The survey was further developed by analyzing the tool for organizational constructs related to job satisfaction used in the literature and a large cohort of other tools; hence, a strategy to demonstrate construct validity was employed. Using factor analysis, the survey questions were grouped into scales and internal consistency statistics were conducted. Scales with an alpha > .70 were accepted in the overall survey tool. The overall reliability ranges from 0.85 to 0.94 (Murphy, 2000).

Practice environment. RN perceptions of the practice environment were assessed using Lake's (2002) Practice Environment Scale which measures the linkages between the nursing practice environment, nursing and patient care outcomes. The RN participants responded to 31 questions using a single response format scale ranging

from “Strongly Agree” to “Strongly Disagree” (Lake, 2002, 2007). See (Appendix C).

The Practice Environment Scale was created by conducting an exploratory factor analysis using varimax rotation of the items incorporated in the Nursing Work Index (NWI) tool, which measured the nurse practice environment in 16 magnet hospitals in 1985-1986 (Lake, 2002, 2007). In addition, a second sample of staff nurses (n=11,636) working in Pennsylvania hospitals was used to evaluate the Practice Environment Scale (Lake, 2002). Construct validity was ascertained via data supporting higher response scores in the Magnet hospitals as compared to the non-Magnet hospitals. Using exploratory factor analysis a total of five subscales were discerned and include: nurse participation in hospital affairs; nursing foundations for quality of care; nurse manager ability; leadership and support of nurses; staffing and resource adequacy; and collegial nurse physician relations. The overall composite scale demonstrates high levels of composite reliability Cronbach’s Alpha (n = 1,610) = 0.82.

Fall rates. Fall data were collected from each study sites risk management departments. The definition of the classification system was described as follows: 0 = a patient voluntarily lowering themselves to the floor that was witnessed and there was no injury or a nurse lowers a patient to the floor without injury, 1 = a patient fall with no suspected or complaint of injury and no diagnostic tests ordered, 2 = a patient fall and the patient suffers a minor surface injury such as bruising, abrasion, or skin tear and no tests are ordered, 3 = a patient fall requiring diagnostic x-ray or other tests ordered injury was ruled out, 4 = a patient fall which results in a laceration requiring sutures or splinting, and 5 = a patient fall that results in a fracture or other serious injury resulting in surgery or other treatments (Study Sites, 2010). The overall fall rate for each

participating unit was collected. The rates were determined by taking the falls (Classification 0-5) and dividing them by the number of total patient days on the nursing unit and multiplying that figure by 1,000 patient days. Fall data were annualized from the month data collection concluded on the nursing unit.

Pressure ulcer rates. Pressure ulcer data were obtained from the study sites risk management departments. The National Pressure Ulcer Advisory Panel (NPUAP) (2009) classify pressure ulcers as follows: Stage I was none blanchable erythema of intact skin, the heralding lesion of ulceration; Stage II was partial thickness skin loss involving epidermis, dermis or both and the ulcer was superficial and presents clinically as an abrasion, blister, or shallow crater; Stage III was full thickness skin loss involving damage to or necrosis of subcutaneous tissue that may extend down to, but not through the underlying fascia and the ulcer presents clinically as a deep crater with or without undermining of adjacent tissue; and Stage IV was full thickness skin loss with extensive destruction, tissue necrosis, or damage to muscle, bone or supporting structure and undermining and sinus tracts (NPUAP, 2009). Hospital acquired pressure ulcers are reported to Risk Management by the RN when a pressure ulcer was identified. The pressure ulcer rate was determined by taking the total (Stages I through IV) and dividing that number by the total number of patient days and multiplying that figure by 1,000 patient days. Pressure ulcer data were annualized from the month data collection concluded on the nursing units to 12 months prior.

Medication error rates. Medication error rate data were collected from the study sites risk management departments. Medication Errors are categorized using the National Coordinating Council for Medication Error Reporting and Prevention (NCC

MERP) (2009) classification system. The NCC MERP (2009) categories are defined as follows: Category A = "an event that could potentially cause harm", Category B = "an error occurred, yet the medication did not reach the patient", Category C = "an error has occurred that did reach the patient, but did not cause harm", Category D = "an error occurred that resulted in the need for increased patient monitoring, but no harm to the patient", Category E = "an error occurred that resulted in the need for treatment or intervention and caused temporary patient harm", Category F = "an error occurred that resulted in initial or prolonged hospitalization and caused temporary patient harm", Category G = "an error occurred that may have contributed to or resulted in permanent patient harm", Category H = "an error occurred that resulted in a near death event" and Category I = "an error occurred that resulted in patient death".

The medication error rate (total or significant) was calculated by taking the number of medication errors and dividing that number by total patient days; then this figure was multiplied by 1,000 patient days. Medication error data were annualized from the month data collection concluded on the nursing units to 12 months prior.

Patient satisfaction with nursing care. Patient satisfaction data at the study sites were collected from the performance improvement departments at each of the study sites. Patient satisfaction data was measured using the Inpatient Survey developed by Avatar International, LLC (Study Sites, personal communication, September, 2010) (Appendix D). The patients respond to each question using a Likert-type scale ranging from "strongly disagree" to "strongly agree". A point value was assigned to each response as follows: 0 points denotes "strongly disagrees", 25 points signifies "slightly disagree", 50 points represents "neither agree nor disagree", 75 points

indicates “slightly agree” and 100 points designates “strongly agree”. Avatar reviews each patient reply and categorizes per response scale. The number of responses for each category was then multiplied by the point value to calculate the point value for the question. A total point value was created by adding all the points for each of the responses for a particular question. The total points for each question are then divided by the total number of patient s responding to the survey question to calculate a mean score (Study Sites, personal communication, September, 2010)

The Cronbach’s alpha for all factor scales have a reliability of 0.85 to 0.93, with an overall survey reliability of 0.98. Short and long term test-retest reliability was conducted in 3000 patients. Short term test-retest reliability (survey at discharge and six weeks later) was 0.78, whereas long term (survey at discharge and one year later) test-retest reliability was 0.94. Content validity was established via focus groups and cognitive testing with patients, families/guardians and healthcare managers. Construct validity was proven by way of factor analytic studies, in addition to Rasch reliability and validity modeling (item values fall between ± 2.0). Criterion validity (indicating a consistency in ratings) has been demonstrated via triangulation analyses comparing patient, employee and physician surveys in over 100 hospitals (Study Sites, personal communication, September, 2010)

For the purpose of this study, the core inpatient subscale “nursing care” score was assessed from each participating nursing unit. The two common questions asked of patients after discharge from each of the study sites are, “I was given explanations of my daily routine by the nursing staff” and “the nursing staff regularly asked me about my comfort, pain and need to use the bathroom.” Patients excluded from the sample

include those with a privacy indicator, deceased patients, those diagnosed with behavioral health conditions, those with a bad debt classification, any patients with pregnancy complications, brain disorders, HIV positive or those transferred to Hospice Care. Data retrieved from each participating nursing unit was annualized from the month data collection concluded on the participating nursing units to 12 months prior and obtained from the hospital based performance improvement departments.

Physician satisfaction with nursing care. Physician satisfaction at the study sites were obtained from the quality departments from each study site. Physician satisfaction was assessed using the Physician Insights instrument managed by HealthStream Research (formerly Data Management and Research, Inc. (Study Sites, personal communication, February, 2010) (Appendix E). Survey data were collected by HealthStream Research at each of the participating sites in March 2009 (Study Sites, personal communication, February, 2010).

Physicians at the study sites respond to a total of 34 survey questions using a 5 point Likert-type scale with 1 denoting "Very Satisfied" to 4 signifying "Very Dissatisfied"; and 5 denoting "Do Not Know". For the purposes of this study, the four subscale questions denoting "Staff Unit Quality" data were analyzed. The Cronbach's coefficient alpha for the nursing subscale was 0.874 (Study Sites, personal communication, February, 2010).

HealthStream (Study Sites, personal communications, February, 2010) updated the instruments and conducted a complete analysis of the validity and reliability properties. Factor analysis was used to confirm the subscales. Content validity was ensured via literature reviews and consultations with expert in the field. In addition,

convergent and discriminant validity procedures were employed to ensure that the appropriate scales were being measured and multiple regression analyses were conducted to explore how well the items predict physician overall satisfaction. In 2000 and 2005, the alpha for the full survey was .96 (Study Sites, personal communications, February, 2010).

RN turnover rate. RN turnover was defined as the number of RNs leaving the unit from the nursing unit for the year divided by the total average of employed RN team members (Study Sites, 2010). This data was collected and calculated by the team resources department at each of the study sites. Data were obtained on those nursing units managed by the nurse manager participating in the study. RN turnover data were annualized from the month data collection concluded on the nursing units to 12 months prior.

RN vacancy rate. The study sites (2010) define Nursing Vacancy rates as the number of budgeted RN full-time equivalents (FTE's) minus the number of filled RN positions, divided by budgeted RN FTEs. This data were collected from the team resource departments at each study site. Data were obtained on those nursing units managed by the nurse manager participating in the study. RN vacancy rate data were annualized from the month data collection concluded on the nursing units to 12 months prior.

RN hours of care. RN hours of care was defined as the number of productive (excluding non-productive education, vacation, in-service and sick time) RN hours worked to provide direct patient care (Donaldson, et al., 2005; Study Sites, 2010). This variable was calculated by team resources using the hours of direct RN care divided by

the total number of patient days. The RN hours of care was annualized from the month data collection concluded on the nursing units to 12 months prior.

Demographic survey. Demographic data were collected in all participants. Two separate demographic tools was created; one for the NM (Appendix F) and the other for the RN participants (Appendix G). The NMs were asked to complete the following data points: a) age, b) gender, c) ethnicity, d) type of nursing degree, e) highest level of education, f) years of nursing experience, g) years of leadership experience, h) unit managing and i) tenure on the unit. RNs were asked key questions that include: a) age, b) gender, c) ethnicity, d) years of nursing experience, e) nursing unit currently employed, f) type of nursing degree, g) highest level of education, h) tenure on nursing unit and h) shift working.

Procedures

Approvals. Approval was obtained via the Institutional Review Boards (IRB) from the eight hospital study sites and submitted to the IRB for final study authorization at the University of South Florida (Appendix H). Once all approvals were received, data collection procedures were instituted.

Data collection procedures. After IRB approval, the investigator requested to present the study at each hospital's monthly NM meetings. NMs who met inclusion criteria were asked to take two surveys: a paper and pencil demographic survey and the on-line version of the Mayer Salovey Caruso Emotional Intelligence Tool (MSCEIT) Version 2.0 (2002). A detailed discussion regarding maintaining the NM results confidential was conducted. The principal investigator (PI) explained the study and obtained consent for participation at a future scheduled meeting. Managers were

contacted personally by the PI to sign up for an orientation session. If a nurse manager was not able to attend an orientation session, arrangements were made for the PI to meet with the manager in the privacy of their office. At the individual meeting, the PI explained the study and obtained informed consent. After obtaining informed consent, the NM was given the demographic survey to complete and return to the PI. The NM was instructed that they would receive an email from the PI with instructions to access the on-line MSCEIT survey. NM participants received a $10.00 Starbuck's gift certificate as an honorarium.

After the demographic surveys were returned and the on-line MSCEIT assessment was completed, nursing units were identified for RN data collection. Only RNs that worked for the NM on the participating units were recruited. The PI attended unit based team meetings with the RN staff to present the study and invite them to future orientation sessions. These orientation sessions were conducted on all shifts (7am-3pm, 3pm-11pm, 11pm-7am, 7am-7pm and 7pm-7am). During these sessions, informed consent was obtained and RN participants completed the surveys. Participant anonymity and confidentiality was discussed and maintained. The following instruments were administered to the RNs: a demographic survey; the Developing Organizational Capacity (Murphy, 2000) and the Practice Environment Scale authored by Lake (2002, 2007). RN participants were asked to identify the unit they work on the demographic tool; in order to correlate data to the NM scores. At these sessions, the PI reviewed the surveys for completion upon receipt. The RN participants received a $5.00 Starbuck's gift certificate as an honorarium. A flyer was posted on the nursing units requesting RN participation, communication about orientation sessions and study

deadlines.

Data management. Nurse Manager EI data were kept confidential and stored on a CD that was locked in a file cabinet when not in use. The file cabinet was located in the PI's work office that was locked when not used. Registered Nurse survey data were kept confidential and anonymous. Survey data were stored in a locked file cabinet in the PI's locked work office. The PI and the administrative assistant have access to the office. The PI was the only person with access to the locked file cabinet. The file cabinet key was located in a locked file cabinet where team member files are located. The PI was the only person who has the key and has access to the team member file cabinet.

Data analysis. The Statistical Package for Social Sciences (SPSS) version 19.0 was used to analyze the study data.

Aim 1: The first aim of this study was to determine if the level of nurse manager EI predicts RN job satisfaction and RN perceptions of the practice environment. For specific Aim 1, the following hypothesis was tested:

> H1: There is a direct, significant positive relationship between the level of NM EI and the level of RN job satisfaction and RN perceptions of the practice environment.

To determine if nurse manager EI levels predict RN job satisfaction and RN perceptions of the practice environment, the PI assessed the unit level relationships between NM EI and RN job satisfaction and NM EI and RN perceptions of the practice environment using bivariate correlation and regression statistics. Pearson product-moment correlation coefficients, r, was ascertained to determine the degree and direction of association between these continuous variables. Linear regression statistics was

conducted to determine if EI predicts RN job satisfaction and RN perceptions of the practice environment.

Aim 2: The second aim was to determine if EI, RN job satisfaction and RN perceptions of the practice environment have an indirect and direct (respectively), relationship to patient outcomes (fall, hospital acquired pressure ulcer and medication error rates), nursing outcomes (patient and physician satisfaction) and hospital outcomes (nursing turnover and vacancy rates).

For specific aim 2 the following hypotheses was tested:

H1: There is an indirect, significant inverse relationship between level of NM EI via the mediating variables RN job satisfaction and RN perceptions of the practice environment and patient and hospital outcomes; and a significant positive relationship between level of NM EI and nursing outcomes.

H2: There is a direct, significant inverse relationship between level of RN job satisfaction and fall, hospital-acquired pressure ulcer and medication error rates.

H3: There is a direct, significant inverse relationship between RN perceptions of the practice environment and fall, hospital-acquired pressure ulcer and medication error rates.

H4: There is a direct, significant positive relationship between RN job satisfaction and level of patient and physician satisfaction.

H5: There is a direct, significant positive relationship between RN perceptions of the practice environment and patient and physician

satisfaction.

H6: There is a direct, significant inverse relationship between RN job satisfaction and nurse turnover and vacancy rates.

H7: There is a direct, significant inverse relationship between RN perceptions of the practice environment and nurse turnover and vacancy rates.

To determine if NM EI, RN job satisfaction and RN perceptions of the practice environment have an indirect and direct (respectively), inverse relationship to patient outcomes (fall, hospital acquired pressure ulcer and medication error rates) and hospital outcomes (nursing turnover and vacancy rates); and a significant positive relationship to nursing outcomes (patient and physician satisfaction scores), hierarchical multiple regression statistics were conducted. The relationship between EI and each mediating variable, RN job satisfaction and RN perceptions of the practice environment was assessed by analyzing the amount and significance of R^2. After these relationships were established, statistical procedures were used to assess the indirect (via RN job satisfaction and RN perceptions of the practice environment) and direct relationship between EI and the patient, nursing and hospital outcomes (Baron & Kenny, 1986). Again, R^2 were analyzed to determine the amount and significance of change.

Aim 3: The final aim was to investigate the influence of the moderating variable RN hours of care and its effect on the relationship between RN job satisfaction and RN perceptions of the practice environment with the dependent variables: (a) patient outcomes (fall, hospital-acquired pressure ulcers, and medication error rates); (b) nursing outcomes (patient and physician satisfaction); and (c) hospital outcomes (nurse

turnover and vacancy rates).

For specific aim 3 the following hypotheses was tested:

H1: RN hours of care significantly effects the relationship between RN job satisfaction, patient, nursing and hospital outcomes.

H2: RN hours of care significantly influences the relationship between RN perceptions of the practice environment, patient, nursing and hospital outcomes.

To investigate the influence of the moderating variable RN hours of care among the relationships between RN job satisfaction and patient, nursing and hospital outcomes and RN perceptions of the practice environment and patient, nursing and hospital outcomes, multiple regression statistics were conducted. Amount of R^2 change and significance was assessed between equations created to determine the effect of RN hours of care on the relationships between the independent and outcome indicators (Baron & Kenny, 1986).

Data review. Prior to conducting the statistical analysis, the data were reviewed for duplicate cases. One participant's data was entered twice in the excel spreadsheet; hence, the duplicate entry was removed from the data set. One nurse manager consented to participate in the study. However, there were no RNs on this manager's unit that agreed to participate. The nurse manager and the nursing unit were removed from the study.

There were five nursing units that had only one RN consenting to participate in the study. Correlation coefficients were conducted among the study variables including those units with one participant and then excluding these five nursing units

from the study sample. There were no significant changes in the variable correlations when the five nursing units were included in the study sample. Therefore, the five nursing units with one study participant remained in the study sample.

Chapter Four

Results

This chapter first describes the results of this study related to the relationships between the independent variable emotional intelligence and dependent variables job satisfaction and perceptions of the practice environment. In addition, findings related to the associations between emotional intelligence and patient, nursing and hospital outcomes via the mediating variables RN job satisfaction and RN perceptions of the practice environment are discussed. Finally, the interaction between the independent variables RN job satisfaction and RN perceptions of the practice environment and the moderating variable RN hours of care are reviewed as to the relationship to the dependent variables patient, hospital and nursing outcomes. This discussion is followed by a presentation of the results according to each aim and research hypothesis.

Sample

Nurse manager demographics. Thirty-eight nurse managers from eight study sites participated in the study. A total of 53 nursing units participated in the study with several of the nurse managers reported having responsibility for more than one nursing unit.

The mean age for this group of nurse managers was 51.27 years (SD=6.32). Their ages ranged from 28 to 64 years. The participants' gender was reported as 92.1% female (n=35) and 7.9% male (n=3). Table 1 illustrates NM gender by percentage and

frequency.

Table 1 also illustrates the ethnicity of the nurse manager participants. The majority of NMs are White, non-Hispanic 81.6% (n=31), 5.3% (n=2) are White, Hispanic and 5.3% (n=2) reported being Black, non-Hispanic. Three nurse managers (7.9%) reported other and identified their ethnicity being Italian, Multiracial or Persian.

Twenty-four (63.2%) nurse managers reported they are married, 18.4% (n=7) indicated being divorced, 10.5% (n=4) are single and 7.9% (n=3) other. Table 1 shows the frequency and percentage of NM marital status.

Table 1

NM Frequency and Percentage by Gender, Ethnicity, and Marital Status (N=38)

Gender	n	%
Female	35	92.1
Male	3	7.9
Ethnicity	**n**	**%**
White, non-Hispanic	31	81.6
White, Hispanic	2	5.3
Black, non-Hispanic	2	5.3
Other	3	7.9
Marital Status	**n**	**%**
Married	24	63.2
Divorced	7	18.4
Single	4	10.5
Other	3	7.9

The mean length of time the NM has managed their current nursing unit(s) was 5.92 years (SD= 5.91). Nurse Manager mean length of time working at the study site was 16.91 years (SD=10.46). Mean length of time licensed as a RN was 23.08 years (SD=9.40). Table 2 depicts the mean and standard deviations for the length of time the nurse manager have managed their current nursing unit, hospital tenure and years as an RN.

Table 2

Mean and Standard Deviations for NM Length of Time Managed Unit, Hospital Tenure and Years as an RN (N=38)

Length of Time	M (Years)	SD (Years)
Managed Current Unit	5.92	5.91
Hospital Tenure	16.91	10.46
Years as RN	23.08	9.40

Table 3 depicts the frequencies and percentages of pre-licensure nursing education preparation, the highest level of nursing education and highest level of education other than nursing. Twenty or (52.6%) nurse managers reported that their initial nursing preparation was at the associate degree level, thirteen (34.2%) reported obtaining a Bachelors, and 13.2% (n=5) a Diploma. Seventeen (44.7%) reported their highest level of nursing education was a Bachelors, 28.9% (n=11) conveyed Associates, 21.1% (n=8) stated obtaining a Masters, 1or (2.6%) specified having a doctorate and 1 (2.6%) a diploma. The majority of nurse managers 71.1% (n=27) reported not having a degree outside of nursing. Eight (21.1%) reported having a Bachelor's degree outside nursing and 7.9% (n=3) shared that they have a non-nursing related Master's. Types of degrees outside of nursing include Business Administration, Psychology, Education and Health Care Administration.

Table 3

Frequency and Percentage of NM Highest Level of Initial Education, Nursing Education, and Non-nursing Education (N=38)

Education	*n*	*%*
Initial Nursing Education		
Associates	*20*	52.6
Bachelors	13	34.2
Diploma	5	13.2
Highest Level of Nursing Education		
Bachelors	17	44.7
Associates	11	28.9
Masters	8	21.1
Doctorate	1	2.6
Diploma	1	2.6
Highest Level of Education Non-Nursing		
None	27	71.1
Bachelors	8	21.1
Masters	3	7.9

Twenty-seven nurse managers (71.1%) do not have a nursing certification. Of those nurse managers having a nursing certification, 5.3% (n=2) have Inpatient OB Nursing certification, 5.3% (n=2) Critical Care Registered Nurse, 2.6% (n=1) Nurse Executive, 2.6% (n=1) Certified Nephrology Nurses, 2.6% (n=1) Medical/Surgical Nurse certified, 2.6% (n=1) Orthopedic Certified Nurses, 2.6% (n=1) Oncology Nurse Certified,

2.6% (n=1) Pediatric Nurse Certified and 2.6% (n=1) nurse manager Progressive Care Certified Nurse. One (2.6%) nurse manager was certified as a Family Nurse Practitioner. Table 4 portrays the frequency and percentages of nurse manager certification.

Table 4

Frequency and Percentage NM Certification (N=38)

Certification	n	%
None	27	71.1
Inpatient OB	2	5.3
Critical Care	1	2.6
Nurse Executive	1	2.6
Nephrology	1	2.6
Medical-Surgical	1	2.6
Orthopedic	1	2.6
Oncology	1	2.6
Pediatric	1	2.6
Progressive Care	1	2.6
Family Nurse Practitioner	1	2.6

Table 5 depicts the frequency and percentage of nurse manager membership in nursing professional organizations. The majority of the nurse managers 52.6% (n=20) reported being a member in a professional nursing organization. Eighteen nurse managers (47.4%) shared that they were not members of a nursing professional organization. Examples of professional organizations membership as relayed by the

nurse managers included: the American Association of Critical Care Nurses (AACN), Association of Women's Health, Obstetrics, and Neonatal Nurses (AWHONN) and regional Nurse Executive organizations.

Table 5

Frequency and Percentage NM Membership in Nursing Professional Organizations (N=38)

Membership	n	%
Involved	20	52.6
Not Involved	18	47.4

Registered nurse demographics. Six hundred and fifty-nine RNs from eight research sites participated in the study. Study participants were RNs that work on a medical-surgical, telemetry, critical care, pediatric and labor and delivery settings. These participants have worked on their patient care unit for greater than or equal to 3 months and are either full time or part time status.

The mean age of the RN was 41.44 years (SD=11.359), with ages that ranged from 21 to 72 years. The participants' gender was reported as 92.4% female (n=609) and 7.3% male (n=48). Two registered nurses (.3%) did not report their gender. Table 6 depicts the frequency and percentage by gender of the study participants.

Table 6 also represents the ethnicity of the RN participants. The majority of the participants are White, non-Hispanic 77.2% (n=509), 7.6% (n=50) Filipino, 5.9% (n=39) Black, non-Hispanic, 5.3% (n=35) White, Hispanic, .3% (n=2) Black, Hispanic, .2% (n=1) Chinese, .3% (n=2) Native American, Eskimo or Aleutian, .3% (n=2) Hawaiian, .2% (n=1) Korean and 2.6% (n=17) report their ethnicity as being other.

Four hundred and thirty (65.3%) of the participants were married, 18.8% report being single (n=124), 13.5% state being divorced (n=89), 1.1% are widowed (n=7) and 1.1% report a marital status of other (n=7). Table 6 shows the frequency and percentage by marital status for the study participants.

Table 6

Frequency and Percentage of RN by Gender, Ethnicity, and Marital Status (N=659)

Gender	n	%
Female	609	92.4
Male	48	7.3
Did not Report	2	.3
Ethnicity	**n**	**%**
White, non-Hispanic	509	77.2
Filipino	50	7.6
Black, non-Hispanic	39	5.9
White, Hispanic	35	5.3
Black, Hispanic	2	0.3
Chinese	2	0.3
Native American, Eskimo or Aleutian	2	0.3
Hawaiian	2	0.3
Korean	1	0.2
Other	17	2.6
Marital Status	**n**	**%**
Married	430	65.3
Single	124	18.8
Divorced	89	13.5
Widowed	7	1.1
Other	7	1.1

RN participants reported the shift they work. The majority of the participants, 336 (51%) worked on the 7am-7pm shift and 40 (6.1%) reported they worked on the 7am – 3pm shift. Twenty-five (3.8%) worked on the 3pm-11pm shift. One hundred and twenty-eight participants (19.5%) stated that they work on the 7pm-7am shift, whereas 5 or (.8%) indicated that they worked from 11pm-7am. Participants also identified other non-traditional shifts worked such as 6am-6pm (24 participants representing 3.6%) and 6pm-6am (14 participants or 2.1%). Further, 18 (3.1%) RN participants identified that they worked one of the following shifts: 11am-11pm, 5am-5pm, 7:30am-4pm, 8am-4:30pm, 8am-4pm, 8am-5pm, 9:30pm-8am, 9am-2pm and 9am-5pm. Table 7 displays frequency and percentage for the shifts worked by the study participants.

Table 7

Frequency and Percentage of Shifts Worked by RN (N=659)

Shift	n	%
7am-7pm	336	51
7pm-7am	128	19.5
7am-3pm	40	6.1
3pm-11pm	25	3.8
11pm-7am	5	0.8
6am-6pm	24	3.6
6pm-6am	14	2
Other	18	3.1

The mean length of time that RNs worked on their current nursing unit was 6.19 years (SD= 6.32), with range of time from 3 months to 37 years. Mean length of time worked at the study site was 7.62 years (SD=7.45), with a range of 3 months to 38 years. Length of time as an RN was M= 12.87 years (SD=11.12), with the range being 3 months to 45 years. Five hundred and seventy-four (87.1%) of the RNs work full-time and eighty-one (12.3%) work part-time. Table 8 portrays the means and standard deviation for length of time the participants work on their current unit, study site and licensed as an RN.

Table 8

RN Means and SD for Length of Time in Years Worked on Unit and Study Site, and RN Licensure (N=659)

Length	M (Years)	SD (Years)
Length of Time on Unit	6.19	6.32
Length of Time at Hospital	7.62	7.45
Length of Time Licensed as RN	12.87	11.12

Table 9 displays the frequency and percentages of study participant RN education preparation. The majority 65.9% (n=434) received an Associate Degree, 152 (23.1%) achieved a Bachelor's degree, and 71 (10.8%) obtained a Diploma as their pre-licensure RN degree.

Participants also reported their highest level of nursing education. Three hundred and eighty (57.7%) reported that their highest level of nursing education at the Associate level, 31.6% (n=208) reported achieving a Bachelor's degree, 7.9% (n=52) a Diploma and 2.7% (n=18) a Master's. When asked what the highest level of education other than

nursing, the responses showed 89.9% (n=592) reported none, 9% (n=59) achieved a Bachelors and .9% (n=6) a Masters. Table 9 indicates the frequency and percentage of highest level of nursing education preparation.

Table 9

Frequency and Percentages of Pre-licensure Nursing Education, Highest Level of Nursing Education and Highest Level of Education Other than Nursing (N=659)

Degree	n	%
Associates	434	65.9
Bachelors	152	23.1
Diploma	71	10.8
Highest Level of Nursing Education	**n**	**%**
Associate	380	57.7
Bachelor	208	31.6
Diploma	52	7.9
Masters	18	2.7
Highest Level of Non-Nursing Education	**n**	**%**
None	592	89.9
Bachelors	59	9.0
Masters	6	.9

Table 10 illustrates the frequency, percentage and type of certification the RN participants achieved. The majority of study participants 73.3% (n=483) do not have a nursing certification. Thirty-two (4.9%) reported having certification in Critical Care, 24.9% (n=32) Inpatient Obstetric Nurse, 4.2% (n=28) Medical/Surgical, 3.5% (n=23) Progressive Care, .9% (n=6) Maternal Newborn, .9% (n=6) Oncology, and .9% (n=6) are

certified in Orthopedic nursing. Seventeen nurses (2.6%) related having a nursing certification not identified on the demographic tool and reported having certifications as an Acute Care Nurse Practitioner, Certified Lactation Counselor, Certified Pediatric Nurse Practitioner, Clinical Nurse Leader, Certified Peri-Anesthesia Nurse and Nurse Midwife.

Table 10

RN Frequency and Percentage by Nursing Certification (N=659)

Certification	n	%
None	483	73.3
Critical Care	32	4.9
Inpatient Obstetric	32	4.9
Medical/Surgical	28	4.2
Progressive Care	23	3.5
Maternal Newborn	6	.9
Oncology	6	.9
Orthopedics	6	.9
Other	17	2.6

Four hundred and ninety-three (74.8%) of the participants do not participate in a nursing professional organization and 4.9% (n=164) are members. The majority of respondents, 76 (11.5%) have membership in the American Association of Critical Care Nurse (AACN) organization, 1.8% (n=12) American Nurses Association (ANA) and 1.8% (n=12) conveyed that they were members of the Association of Women's Health,

Obstetrics and Neonatal Nursing (AWHONN). Table 11 shows the frequency and percentage of participant involvement in a nursing professional organization.

Table 11

RN Frequency and Percentage of Involvement in Nursing Professional Organization (N=659)

Nursing Professional Organization	n	%
Not Involved	493	74.8
Involved	164	24.9

Aim One

The first aim of this study was to determine if the level of nurse manager EI predicts RN job satisfaction and RN perceptions of the practice environment.

Aim one: Hypothesis 1. To test the hypothesis, "There is a direct, significant positive relationship between the level of NM EI and the level of RN job satisfaction and RN perceptions of the practice environment," bivariate correlation and simple linear regression statistics were used. Pearson product- moment correlation coefficients, r, were calculated to determine the degree and direction of association between the continuous variables. Linear regression statistics were conducted to determine if EI predicts RN job satisfaction and RN perceptions of the practice environment.

Results showed that the means and standard deviations for the variables are reported in Table 12. The M for the variables are NM EI (M=102.97, SD ±13.80), RN job satisfaction (M= 3.95, SD ±.34) and RN perceptions of the practice environment (M= 3.17, SD ± .28). The M for NM EI was 102.97 which represents the average overall EI index for manager's that participated in the study. The range of EI scores

was 75.03 to 133.46. RN job satisfaction M was 3.95 which indicated that RNs tend to agree with the questions asked on the survey; therefore, appear to be on average satisfied with their jobs. The range of unit scores was from 3.06 to 4.69. RN perceptions of the practice environment results indicate that the M score was 3.17 and SD ± .28. The range of unit perceptions of practice environment scores was from 2.52 to 3.68. Therefore, RN participants "somewhat agreed" with the questions asked related elements of the practice environment (supervision, ability to provide quality nursing care, staffing, pay and nurse-physician collaboration).

Table 12

Means and Standard Deviations NM EI, RN Job Satisfaction and RN Perceptions of the Practice Environment

Variable	N	M	SD
NM EI	53	102.97	13.80
RN Job Satisfaction	53	3.95	.34
RN Perceptions of Practice Environment	53	3.17	.28

Pearson product-moment correlation coefficients, r, noted in Table 13 show the degree and direction of associations between the continuous variables NM EI, RN job satisfaction and RN perceptions of the practice environment. Fifty-three nursing units participated in the study. There was a positive, however not significant relationship between the variables NM EI and RN job satisfaction ($r = .125$, $p < .373$) and NM EI and RN perceptions of the practice environment ($r = .183$, $p < .189$). Further, there was a positive, significant strong correlation between the variables RN job satisfaction and

RN perceptions of the practice environment (r=.762, p<.001).

Table 13

Pearson Product-Moment Correlation Coefficients NM EI, RN Job Satisfaction and RN Perceptions of the Practice Environment (N=53)

	NM EI	RN Job Satisfaction	RN Perceptions of the Practice Environment
NM EI	1	.125	.183
RN Job Satisfaction	.125	1	.762**
RN Perceptions of the Practice Environmen	.183	.762**	1

**p<.01(2-tailed)

Simple linear regression statistics were conducted to determine if EI predicts RN job satisfaction and RN perceptions of the practice environment. Findings suggest that NM EI does not predict RN perceptions of the practice environment (R^2 = .034, F (1, 51) = 1.77, p<.189) and does not predict RN job satisfaction (R^2 =.016, F (1, 51) =.81, p<.373). NM EI represented only 3.4% of the RN perceptions of the practice environment variance and 1.6% of the RN job satisfaction variance. Table 14 depicts the R^2 and F statistics demonstrating the predictive relationship between NM EI and RN job satisfaction and NM EI and RN perceptions of the practice environment. In addition, Table 19 outlines the regression coefficients for the predictive relationships between NM EI and RN perceptions of the practice environment (B=.004, SE B=.003, β = .183) and NM EI and RN job satisfaction (B=.003, SE B=.003, β = .125).

Table 14

R Square, F Statistics and Summary of Regression Analysis Demonstrating the Predictive Relationships between NM EI and RN Job Satisfaction (JS) and NM EI and RN Perceptions of the Practice Environment (PPE) (N =53)

Independent Variable	Dependent Variable	R^2	F	p
NM EI	RN PPE	.034	1.77 (1, 51)	.189
NM EI	RN JS	.016	.81 (1, 51)	.373
Independent Variable	**Dependent Variable**	**B**	**SE B**	**β**
NM EI	Constant	2.79	.292	
	RN PPE	.004	.003	.183
NM EI	Constant	3.63	.354	
	RN JS	.003	.003	.125

$p < .05$

In summary, there was no evidence to suggest that the level of NM EI predicted RN job satisfaction or RN perceptions of the practice environment. In addition, there was not a positive, significant association between the variables NM EI and RN job satisfaction and NM EI and RN perceptions of the practice environment. This study demonstrated a positive, significant strong correlation between the variables RN job satisfaction and RN perceptions of the practice environment ($r=.762$, $p<.001$). Therefore the data presented does not support aim one, hypothesis one.

Aim Two

The second aim was to determine if NM EI, RN job satisfaction and RN perceptions of the practice environment have an indirect and direct (respectively),

relationship to patient outcomes (fall, hospital acquired pressure ulcer and medication error rates), nursing outcomes (patient and physician satisfaction) and hospital outcomes (nursing turnover and vacancy rates).

Aim two: Hypothesis 1. To test the hypothesis, "There is an indirect, significant inverse relationship between level of NM EI via the mediating variables RN job satisfaction and RN perceptions of the practice environment and patient and hospital outcomes; and an indirect, significant positive relationship between level of NM EI via the mediating variables RN job satisfaction and RN perceptions of the practice environment and nursing outcomes", bivariate correlation and multiple regression statistics were used. Pearson product- moment correlation coefficients, r, were calculated to determine the degree and direction of association between the independent and dependent variables.

First means and standard deviations for each of the variables are reported in Table 15. Results show that the M for the variables are NM EI (M=102.97, SD±13.80), RN job satisfaction (M=3.95, SD±.34), RN perceptions of the practice environment (M=3.17, SD±.28), fall rate (M=2.97, SD±2.08), medication error rate (M=4.48, SD±5.45), pressure ulcer rate (M=.43, SD±.54), patient satisfaction (M=80.15, SD±7.54), physician satisfaction (M=3.35, SD±.37), turnover rate (M=.15, SD±.10) and vacancy rate (M=.02, SD±.12).

Results showed that the M fall rate was 2.97 falls per 1,000 patient days with a SD±2.08, indicating that units with a fall rate of 5.05 falls per 1,000 patient days are one standard deviation above the mean and units with a fall rate of .89 are one standard deviation below the mean. The M medication error rate for the units participating in

this study was 4.48 which suggest on average there are 4.48 medication errors on a nursing unit per 1,000 patient days and the SD±5.45 indicates that units with medication error rates of 9.93 are one standard deviation above the mean and rates of -.97 are one standard deviation below the mean. Results indicated that the M pressure ulcer rate for units participating in this study was .43 with a SD±.54, signifying that the average number of pressure ulcers was .43 per 1,000 patient days. Units with a pressure ulcer rate of .97 have a pressure ulcer rate one standard deviation above the mean and units with a pressure ulcer rate of -.11 have a pressure ulcer rate one standard deviation below the mean.

Results showed the M score for the subscale patient satisfaction with nursing care was 80.15 with a SD±7.54. Hence, patients having care provided by nurses on the units participating in this study report that they slightly agree that they were given explanations about the daily routine by the nursing staff and that the nursing staff regularly asked them about their comfort, pain and need to use the bathroom. Units with a mean score of 87.69 are one standard deviation above the mean and units scoring 72.61 are one standard deviation below the mean score.

Findings indicated the M response score for physician satisfaction with the "Staff Unit Quality" was 3.35 with a SD±.37. Therefore on average, physicians are dissatisfied with the "Staff Unit Quality" on the units participating in this study. Units with a "Staff Unit Quality" score of 3.72 are one standard deviation above the mean and units with a score of 2.98 are one standard deviation below the mean.

The mean RN turnover rate for the units participating in this study was .15 with a SD±.10 which indicates that on average 15% of the total RN workforce on the units

participating in the study leave the nursing unit within a year. Units with RN turnover rates of .25 (25%) are one standard deviation above the mean and units with rates of .05 (5%) are one standard deviation below the mean. The mean RN vacancy rate for the units participating in the study was .02 with a SD±.12. Therefore on average, there was a 2% vacancy rate on the nursing units participating in this study. Units with a RN vacancy rate of .14 (14%) are one standard deviation above the mean and units with vacancy rates -.1 (-1%) are one standard deviation below the mean.

Table 15

Means and Standard Deviations for RN EI, RN Job Satisfaction, RN Perceptions of the Practice Environment, Fall Rate, Medication Error Rate, Pressure Ulcer Rate, Patient Satisfaction, Physician Satisfaction, Turnover Rate and Vacancy Rate

Variable	N	M	SD
RN EI	53	102.97	13.80
RN Job Satisfaction	53	3.95	.34
RN Perceptions of Practice Environment	53	3.17	.28
Fall Rate	53	2.97	2.08
Medication Error Rate	53	4.48	5.45
Pressure Ulcer Rate	53	.42	.54
Patient Satisfaction	53	80.15	7.54
Physician Satisfaction	53	3.35	.37
Turnover Rate	53	.15	.10
Vacancy Rate	53	.02	.12

Table 16 depicts r and significance. The variable NM EI has a positive, significant direct association with patient satisfaction ($r=.493$, $p<.01$). RN perceptions of the practice environment has a positive, significant direct relationship to RN job satisfaction ($r=.762$, $p<.01$) and patient satisfaction with nursing care ($r=.278$, $p<.01$). Other significant relationships include a negative relationship between fall rate and patient satisfaction ($r = -.531$, $p<.01$); hence when a nursing unit has a higher rate of patient falls there was lower patient satisfaction. Further, pressure ulcer rate had a positive significant relationship with physician satisfaction with nursing care ($r=.300$,

p<.01).

Table 16

Pearson Product-Moment Correlation Coefficients and Significance between NM EI, RN Job Satisfaction (JS), RN Perceptions of the Practice Environment (PPE), Fall Rate (FR), Medication Error Rate (MER), Pressure Ulcer Rate (PUR), Patient Satisfaction (PtS), Physician Satisfaction (PhS), Turnover Rate (TR) and Vacancy Rate (VR) (N=53)

	NM EI	JS	PPE	FR	MER	PUR	PtS	PhS	TR	VR
NM EI	1	.125	.183	-.189	-.019	.076	.493**	.007	.075	.107
JS	.125	1	.762**	.083	.004	.260	.164	-.048	-.050	-.021
PPE	.183	.762**	1	.075	-.133	.092	.278**	.026	.069	-.092
FR	-.189	.083	.075	1	.126	-.134	-.531**	-.124	.054	.013
MER	-.019	.004	-.133	.126	1	-.034	-.079	.142	.034	.164
PUR	.076	.260	.092	-.134	-.034	1	.099	.300*	.064	-.057
PtS	.493**	.164	.278**	-.531**	-.079	.099	1	.053	.129	.029
PhS	.007	-.048	.026	-.024	.142	.300*	.053	1	-.044	-.093
TR	.075	-.050	.069	.054	.034	.064	.129	-.044	1	.069
VR	.107	-.021	-.092	.013	.164	-.057	.029	-.093	.069	1

**p<.01(two-tailed)

*p<.05(two-tailed)

Regression statistics were conducted to determine if NM EI had an effect on the dependent variables via the mediators RN job satisfaction and RN perceptions of the practice environment. Findings suggest that NM EI does not have a direct ($R^2 = .036$, $F(1, 51) = 1.88$, $p<.175$) relationship with the outcome variable fall rate. In addition, NM EI does not have an indirect relationship to falls with the mediating variables RN job satisfaction ($R^2 = .047$, $F(1, 50) = 6.05$, $p<.440$) or RN perceptions of the practice environment ($R^2 = .048$, $F(1, 50) = .65$, $p<.423$). Nurse manager EI explained 3.6% of the patient fall variance. For the equation NM EI and RN job satisfaction, 4.7% of the fall rate variance could be accounted for. NM EI and RN perceptions of the practice environment together explained 4.8% of the fall rate variance. Table 17 depicts the R^2 and F regression statistics for NM EI predicting a direct and indirect relationship to patient falls.

Table 17

R Square and F Statistics for NM EI Predicting a Direct and Indirect Relationship to Patient Falls (N= 53)

Variable	R^2	F	p
Step 1			
NM EI	.036	1.88 df (1, 51)	.175
Step 2			
NMEI, Job Sat	.047	6.05 df (1, 50)	.440
NMEI, PPE	.048	.65 df (1, 50)	.423

$p<.05$

Results showed that NM EI does not have a direct relationship to medication error rate (R^2 = .000, F (1, 51) =.018, p<.893). In addition, NM EI does not have an indirect relationship with medication error rate via the mediating variables RN job satisfaction (R^2 = .000, F (1, 50) = .002, p<.966) or RN perceptions of the practice environment (R^2 = .018, F (1, 50) = .881, p<.352). NM EI explained less than 1% of the medication error rate variance. Further the equations NM EI and job satisfaction and NM EI and RN perceptions of the practice environment accounted for less than 1% and 1.8% of the medication error rate respectively. Table 18 depicts the summary of regression analysis for NM EI predicting a direct and indirect relationship to medication errors.

Table 18

Summary of Regression Analysis for NM EI Predicting a Direct and Indirect Relationship to Patient Medication Error Rate (N= 53)

Variable	R^2	F	p
Step 1			
NM EI	.000	.018 df (1, 51)	.893
Step 2			
NMEI, Job Sat	.000	.002 df (1, 50)	.966
NMEI, PPE	.018	.881 df (1, 50)	.352

p<.05

Study outcomes suggest that NM EI does not have a direct relationship to pressure ulcer rates (R^2 = .006, F (1, 51) = .300, p<.586). In addition, the data indicated that NM EI via the mediating variables RN job satisfaction (R^2 = .069, F (1, 50) = 3.414, p<.071) and RN perceptions of the practice environment (R^2 = .012, F (1, 50) = .320, p<.574) does not have a relationship with pressure ulcer rates. NM EI attributed for .6%

of the pressure ulcer variance. For the following equations, NM EI and RN job satisfaction and NM EI and RN perceptions of the practice environment, 6.9% and 1.2% of the variance was accounted for respectively. Table 19 shows the summary of regression analysis for NM EI predicating a direct and indirect relationship to pressure ulcer rate.

Table 19

Summary of Regression Analysis for NM EI Predicting a Direct and Indirect Relationship to Patient Pressure Ulcer Rate (N= 53)

Variable	R^2	F	p
Step 1			
NM EI	.006	.300 df (1, 51)	.586
Step 2			
NMEI, Job Sat	.069	3.414 df (1, 50)	.071
NMEI, PPE	.012	.320 df (1, 50)	.574

$p<.05$

Results showed that NM EI directly affected patient satisfaction with nursing care ($R^2 = .243$, $F(1, 51) = 16.348$, $p<.001$). However, there was not a significant indirect relationship noted with the equations NM EI and RN job satisfaction ($R^2 = .253$, $F(1, 50) = .710$, $p<.404$) and NM EI and RN perceptions of the practice environment ($R^2 = .279$, $F(1, 51) = 2.543$, $p<.117$) and patient satisfaction with nursing care. NM EI explained 24.3% of the patient satisfaction with nursing care variance. NM EI and RN job satisfaction and NM EI and RN perceptions of the practice environment depicted 25.3% and 27.9% of the patient satisfaction with nursing care variance. Table 20

portray a summary of regression analysis for NM EI predicting a direct and indirect relationship to patient satisfaction with nursing care.

Table 20

Summary of Regression Analysis for NM EI Predicting a Direct and Indirect Relationship to Patient Satisfaction with Nursing Care (N= 53)

Variable	R^2	F	p
Step 1			
NM EI	.243	16.348 df (1, 51)	.001*
Step 2			
NMEI, Job Sat	.253	.710 df (1, 50)	.404
NMEI, PPE	.279	2.543 df (1, 50)	.117

*p<.05

NM EI does not have a direct significant relationship with physician satisfaction with nursing care (R^2 = .000, F (1, 49) = .003, p<.960). In addition, a significant indirect relationship was not noted with the mediating equation of NM EI and RN job satisfaction (R^2 = .002, F (1, 48) = .116, p<.735) and the dependent variable physician satisfaction with nursing care or NM EI and RN perceptions of the practice environment (R^2 = .001, F (1, 48) = .030, p<.864) and the dependent variables physician satisfaction with nursing care. NM EI made up less than 1% of the physician satisfaction with nursing care variance. NM EI and RN job satisfaction attributed to .2% of the physician satisfaction variance and NM EI and RN perceptions of the practice environment accounted for .1% of the physician satisfaction with nursing care variance. Table 21 depicts the summary of regression analysis for NM EI predicting a direct and indirect relationship to physician satisfaction with nursing care.

Table 21

Summary of Regression Analysis for NM EI Predicting a Direct and Indirect Relationship to Physician Satisfaction with Nursing Care (N= 53)

Variable	R^2	F	p
Step 1			
NM EI	.000	.003 df (1, 49)	.960
Step 2			
NMEI, Job Sat	.002	.116 df (1, 48)	.735
NMEI, PPE	.001	.030 df (1, 48)	.864

$p<.05$

Data suggest that NM EI does not have a significant direct relationship with RN turnover ($R^2 = .006$, $F (1, 51) = .290$, $p<.592$). Moreover, NM EI with the mediating variables RN job satisfaction ($R^2 = .009$, $F (1, 50) = .179$, $p<.674$) and RN perceptions of the practice environment ($R^2 = .011$, $F (1, 50) = .272$, $p<.604$) do not have a significant indirect relationship with RN turnover. RN Turnover variance accounted for by NM EI was .6%, .9% of RN turnover variance was related to the NM EI and the mediating variable RN job satisfaction and 1.1% of the variance can be explained via the equation NM EI and RN perceptions of the practice environment. Table 22 shows the summary of regression analysis for NM EI predicting a direct and indirect relationship to RN turnover.

Table 22

Summary of Regression Analysis for NM EI Predicting a Direct and Indirect Relationship to RN Turnover (N= 53)

Variable	R^2	F	p
Step 1			
NM EI	.006	.290 df (1, 51)	.592
Step 2			
NMEI, Job Sat	.009	.179 df (1, 50)	.674
NMEI, PPE	.011	.272 df (1, 50)	.604

$p<.05$

Results elucidated that NM EI does not have a significant direct relationship with RN vacancy rate ($R^2 = .011$, F (1, 51) = .589, $p<.446$). Further, NM EI does not have a significant indirect relationship via the mediating variables RN job satisfaction ($R^2 = .027$, F (1, 50) = .062, $p<.805$) and RN perceptions of the practice environment ($R^2 = .024$, F (1, 50) =.664, $p<.419$) with the dependent variable RN vacancy rate. RN vacancy rate variance was explained by NM EI (1.1%), NM EI and RN job satisfaction (2.7%) and NM EI and RN perceptions of the practice environment (2.4%). Table 23 depicts the summary of regression analysis for NM EI predicting a direct and indirect relationship to RN vacancy.

Table 23

Summary of Regression Analysis for NM EI Predicting a Direct and Indirect Relationship to RN Vacancy (N= 53)

Variable	R^2	F	p
Step 1			
NM EI	.011	.589 df (1, 51)	.446
Step 2			
NMEI, Job Sat	.027	.062 df (1, 50)	.805
NMEI, PPE	.024	.664 df (1, 50)	.419

$p<.05$

Table 24 outlines the regression coefficients for the direct relationships between NM EI and the dependent variables fall rate (B=-.029, SE B= .021, β=-.189), medication error rate (B=-.007), SE B=.055, β=-.019), pressure ulcer rate (B=.003, SE B=.006, β=.076), patient satisfaction with nursing care (B=.269, SE B=.067, β=.493), physician satisfaction with nursing scare (B=.000, SE B=.004,β=.007), RN turnover rate (B=.001, SE B=.001,β=.075) and RN vacancy rates (B=.001,SE B=.001,β=.107). NM EI has a direct positive significant relationship to the variable patient satisfaction with nursing care. NM EI did not have a significant relationship with fall rates, medication error rates, and pressure ulcer rates, physician satisfaction with nursing care, RN turnover rates or RN vacancy rates.

Table 24

Summary of Regression Analysis for Direct Relationship with NM EI and Dependent Variables (N=53)

Independent Variable	Dependent Variable	B	SE B	β
NM EI	Fall Rate	-.029	.021	-.189
NM EI	Medication Error Rate	-.007	.055	-.019
NM EI	Pressure Ulcer Rate	.003	.006	.076
NM EI	Patient Satisfaction with Nursing Care	.269	.067	.493
NM EI	Physician Satisfaction With Nursing Care	.000	.004	.007
NM EI	RN Turnover Rate	.001	.001	.075
NM EI	RN Vacancy Rate	.001	.001	.107

$p<.05$

In addition, regression coefficients in Table 25 demonstrate the predictive indirect relationships among the independent variables NM EI and RN job satisfaction and dependent variables patient outcomes: fall rate (B=.666, SE B=.857,β=.108) , medication error rate (B=.098, SE B=2.295,β=.006) and pressure ulcer rate(B=.408, SE B=.221,β=.254). Again, findings suggest that RN job satisfaction does not have a relationship between NM EI and the dependent variables fall rate, medication error rate and pressure ulcer rate.

Table 25

Summary of Regression Analysis for Indirect Relationship with NM EI and the Variable RN Job Satisfaction Predicting Patient Outcomes (N=53)

Independent Variable	Dependent Variable	B	SE B	β
Step 1				
NM EI	Fall Rate	-.029	.021	- .189
Step 2				
NM EI	Fall Rate	-.031	.021	-.202
RN Job Satisfaction		.666	.857	.108
Step 1				
NM EI	Medication Error Rate	-.007	.055	-.019
Step 2				
NM EI	Medication Error Rate	-.008	.056	-.020
RN Job Satisfaction		.098	2.295	.006
Step 1				
NM EI	Pressure Ulcer Rate	.003	.006	.076
Step 2				
NM EI	Pressure Ulcer Rate	.002	.005	.045
RN Job Satisfaction		.408	.221	.254

$p<.05$

Further, regression coefficients in Table 26 demonstrate the predictive indirect relationships among the independent variables NM EI and RN job satisfaction and dependent variables nursing outcomes: patient satisfaction with nursing care (B=2.312, SE B = 2.745, β = .104) and physician satisfaction with nursing care (B = -.057, SE B = .167,β = -.049). Again, findings suggest that RN job satisfaction does not mediate the relationship between NM EI and the dependent variables patient satisfaction with nursing care and physician satisfaction with nursing care.

Table 26

Summary of Regression Analysis for Indirect Relationship with NM EI and the Moderating Variable RN Job Satisfaction Predicting Nursing Outcomes (N=53)

Independent Variable	Dependent Variable	B	SE B	β
Step 1				
NM EI	Patient Satisfaction with Nursing Care	.269	.067	.493*
Step 2				
NM EI	Patient Satisfaction	.262	.067	….. .480
RN Job Satisfaction	with Nursing Care	2.312	2.745	.104
Step 1				
NM EI	Physician Satisfaction with Nursing Care	.000	.004	.007
Step 2				
NM EI	Physician Satisfaction	.000	.004	.011
RN Job Satisfaction	with Nursing Care	-.057	.167	-.049

*p<.05

Regression coefficients in Table 27 demonstrate the predictive indirect relationships among the independent variables NM EI and RN job satisfaction and dependent variables hospital outcomes: RN turnover rate (B= -.019, SE B=.044,β= -.060) and RN vacancy rate (B= -.012, SE B=.049,β= -.035). Again, findings suggest that RN job satisfaction does not mediate the relationship between NM EI and the dependent variables RN turnover rate and RN vacancy rate.

Table 27

Summary of Regression Analysis for Indirect Relationship with NM EI and the Moderating Variable RN Job Satisfaction Predicting Hospital Outcomes (N=53)

Independent Variable	Dependent Variable	B	SE B	β
Step 1				
NM EI	RN Turnover Rate	.001	.001	.075
Step 2				
NM EI	RN Turnover Rate	.001	.001	.083
RN Job Satisfaction		-.019	.044	-.060
Step 1				
NM EI	RN Vacancy Rate	.001	.001	.107
Step 2				
NM EI	RN Vacancy Rate	.001	.001	.111
RN Job Satisfaction		-.012	.049	-.035

p<.05

Regression coefficients in Table 28 demonstrate the predictive indirect relationship among the independent variables NM EI and RN perceptions of the practice environment and the dependent variable patient outcomes: fall rate (B=.837, SE B=1.037,β=.113), medication error rate (B= -2.586, SE B=2.755,β= -.134) and pressure ulcer rate (B=.156, SE B=.276,β=.081). Findings suggested that RN perceptions of the practice environment do not mediate the relationship between NM EI and the dependent variables fall rate, medication error rate and pressure ulcer rate.

Table 28

Summary of Regression Analysis for Indirect Relationship with NM EI and the Moderating Variable RN Perceptions of Practice Environment (PPE) Predicting Patient Outcomes (N=53)

Independent Variable	Dependent Variable	B	SE B	β
Step 1				
NM EI	Fall Rate	-.029	.021	-.189
Step 2				
NM EI	Fall Rate	-.032	.021	-.210
RN PPE		.837	1.037	.113
Step 1				
NM EI	Medication Error Rate	-.007	.055	-.019
Step 2				
NM EI	Medication Error Rate	.002	.056	.006
RN PPE		-2.586	2.755	-.134
Step 1				
NM EI	Pressure Ulcer Rate	.003	.006	.076
Step 2				
NM EI	Pressure Ulcer Rate	.002	.006	.062
RN PPE		.156	.276	.081

$p<.05$

Further, regression coefficients in Table 29 demonstrate the predictive indirect relationship among the independent variables NM EI and RN perceptions of the practice environment and the dependent variables patient satisfaction with nursing care (B= 5.208, SE B= 3.266,β=.195) and physician satisfaction with nursing care (B=.034, SE B=.199,β = .025). Findings suggested that RN perceptions of the practice environment do not mediate the relationship between NM EI and the dependent variables patient satisfaction with nursing care and physician satisfaction with nursing care.

Table 29

Summary of Regression Analysis for Indirect Relationship with NM EI and the Moderating Variable RN Perceptions of Practice Environment (PPE) Predicting Nursing Outcomes (N=53)

Independent Variable	Dependent Variable	B	SE B	β
Step 1				
NM EI	Patient Satisfaction with Nursing Care	.269	.067	.493*
Step 2				
NM EI	Patient Satisfaction	.250	.067	.457
RN PPE	with Nursing Care	5.208	3.266	.195
Step 1				
NM EI	Physician Satisfaction with Nursing Care	.000	.004	.007
Step 2				
NM EI	Physician Satisfaction	9.481	.004	.004
RN PPE	with Nursing Care	.034	.199	.025

p<.05

In addition, regression coefficients in Table 30 demonstrate the predictive indirect relationship among the independent variables NM EI and RN perceptions of the practice environment and the dependent variables hospital outcomes: RN turnover rate (B= -.028, SE B = .053, β = -.075) and RN vacancy rate (B= -.048, SE B=.059,β= -.116). Findings suggested that RN perceptions of the practice environment do not mediate the relationship between NM EI and the dependent variables RN turnover rate and RN vacancy rate.

Table 30

Summary of Regression Analysis for Indirect Relationship with NM EI and the Moderating Variable RN Perceptions of Practice Environment (PPE) Predicting Hospital Outcomes (N=53)

Independent Variable	Dependent Variable	B	SE B	β
Step 1				
NM EI	RN Turnover Rate	.001	.001	.075
Step 2				
NM EI	RN Turnover Rate	.001	.001	.089
RN PPE		-.028	.053	-.075
Step 1				
NM EI	RN Vacancy Rate	.001	.001	.107
Step 2				
NM EI	RN Vacancy Rate	.001	.001	.128
RN PPE		-.048	.059	-.116

$p<.05$

In summary, NM EI has a direct positive relationship with the dependent variable patient satisfaction with nursing care. Neither variable (RN job satisfaction or RN perceptions of the practice environment) mediated the relationship between NM EI and the dependent variables fall rate, medication error rate, pressure ulcer rate, patient satisfaction with nursing care, physician satisfaction with nursing care, RN turnover or RN vacancy rates. Therefore, aim two, hypothesis one was not supported.

Aim two: Hypothesis 2. To analyze the hypothesis, "There is a direct, significant inverse relationship between level of RN job satisfaction and fall, hospital-

acquired pressure ulcer and medication error rates", Pearson product – moment correlation coefficients, r, and regression statistics were utilized. There was a positive, not significant relationship between RN job satisfaction and fall rate ($r = .083$, $p<.555$), a positive, not significant relationship between RN job satisfaction and pressure ulcer rate ($r=.260$, $p<.060$) and a positive, not significant relationship among the variables RN job satisfaction and medication error rates ($r=.004$, $p<.979$). Table 16 outlines the relationships among these variables.

Table 31 depicts the R^2 and F statistics for the relationships between RN job satisfaction and the dependent variables fall rate ($R^2 = .007$, $F(1, 51) = .353$, $p<.555$), medication error rate ($R^2 = .000$, $F= (1, 51) =.001$, $p<.979$) and pressure ulcer rate ($R^2 = .067$, $F(1, 51) =3.687$, $p<.060$). RN job satisfaction explained .7% of the fall rate variance. Moreover, RN job satisfaction accounted for less than 1% of the variance related to medication errors and 6.7% of the variance in pressure ulcers. In addition, Table 31 depicts the summary of the regression analysis for the variables predicting falls, medication errors and pressure ulcers. RN job satisfaction does not predict the variables fall rate ($B=.511$, SE $B= .859$, $\beta = .083$), medication error rate ($B = .059$, SE $B = 2.255$, $\beta=.004$) or pressure ulcer rate ($B = .417$, SE $B= .217$, $\beta=.260$).

Table 31

Summary of Regression Analysis for Direct, Significant Inverse Relationship Between Level of RN Job Satisfaction (JS) and Patient Fall, Pressure Ulcer and Medication Error Rates (N= 53)

Independent Variable	Dependent Variable	R^2	F	p
RN JS	Fall Rate	.007	.353 df (1, 51)	.555
RN JS	Medication Error Rate	. 000	.001 df (1, 51)	.979
RN JS	Pressure Ulcer Rate	.067	3.687 df (1, 51)	.060

Independent Variable	Dependent Variable	B	SE B	β
RN JS	Fall Rate	. 511	.859	.083
RN JS	Med Error Rate	.059	2.255	.004
RN JS	Pressure Ulcer Rate	.417	.217	.260

$p < .05$

In summary, there was not a significant inverse relationship between RN job satisfaction and fall, medication error and pressure ulcer rates. In addition, RN job satisfaction does not predict fall, medication or pressure ulcer rates. Aim two, hypothesis two was not supported.

Aim two: Hypothesis 3. To analyze the hypothesis, "There is a direct, significant inverse relationship between RN perceptions of the practice environment and fall, hospital-acquired pressure ulcer and medication error rates", Pearson product-moment correlation coefficients, r, and regression statistics were used. Table 16 depicts the direction and significance of the relationships among these variables. There was a positive, not significant relationship between RN perceptions of the practice environment and fall rate (r=.075, p<.594), an inverse, not significant relationship with

the medication error rate (r=-.133, p<.343) and positive, not significant relationship with pressure ulcer rates (r=.092, p<.512).

Results show that RN perceptions of the practice environment account for .5% of the fall rate variance, 1.8% of the medication error rate variance and .8% of the pressure ulcer rate variance. Table 32 displays the R^2 and F statistics depicting the relationships between the RN perceptions of the practice environment and fall rate (R^2 = .005, F (1, 51) = .288, p<.594), medication error rate (R^2 = .018, F (1, 51) =.916, p<.343) and pressure ulcer rate (R^2 = .008, F (1, 51) =.437, p<.512). RN perceptions of the practice environment do not have a significant relationship with fall, medication error and pressure ulcer rates. Table 32 depicts the summary of the regression analysis for the variable, RN perceptions of the practice environment predicting falls, medication errors and pressure ulcers. RN perceptions of the practice environment does not predict the variables fall rate (B=.553, SE B= 1.032, β = .075), medication error rate (B = -2.567, SE B = 2.682, β= -.133) or pressure ulcer rate (B = .178, SE B= .269, β=.092).

Table 32

Summary of Regression Analysis for Direct, Significant Inverse Relationship between RN Perceptions of the Practice Environment (PPE) and Fall, Medication Error and Pressure Ulcer Rates (N= 53)

Independent Variable	Dependent Variable	R^2	F	p
RN PPE	Fall Rate	.005	.288 df (1, 51)	.594
RN PPE	Medication Error Rate	.018	.916 df (1, 51)	.343
RN PPE	Pressure Ulcer Rate	.008	.437 df (1, 51)	.512

Independent Variable	Dependent Variable	B	SE B	β
RN PPE	Fall Rate	.553	1.032	.075
RN PPE	Medication Error Rate	-2.567	2.682	-.133
RN PPE	Pressure Ulcer Rate	.178	.269	.092

$p<.05$

In summary there was an inverse, not significant relationship between RN perceptions of the practice environment and medication error rate and a positive, not significant relationship between RN perceptions of the practice environment and fall and pressure ulcer rates. In addition, RN perceptions of the practice environment does not predict fall, medication error or pressure ulcer rates. Therefore aim two, hypothesis three was not supported.

Aim two: Hypothesis 4. To analyze the hypothesis, "There is a direct, significant positive relationship between RN job satisfaction and level of patient and physician satisfaction". Pearson correlation, r, and regression statistics were used. There was a positive, not significant relationship between RN job satisfaction and patient satisfaction ($r=.163$, $p<.241$) and an inverse, not significant relationship to physician satisfaction ($r=-.048$, $p<.736$). Table 16 displays the correlations and

significance between the variables RN job satisfaction, patient satisfaction and physician satisfaction.

Regression statistics were used to analyze the predictive relationship between RN job satisfaction, patient satisfaction with nursing care and physician satisfaction with nursing care. R^2 and F statistics that define the relationship of RN job satisfaction with the variables patient satisfaction with nursing care ($R^2 = .027$, $F(1, 51) = .027$, $p < .241$) and physician satisfaction with nursing care ($R^2 = .002$, $F(1, 49) = .002$, $p < .736$) are displayed in Table 33. RN job satisfaction does not have a significant relationship with the variables patient satisfaction with nursing care or physician satisfaction with nursing care. RN job satisfaction explained 2.7% of the variance for the variable patient satisfaction with nursing care and .2% of the variance with the variables physician satisfaction with nursing care. Table 33 depicts the summary of the regression analysis for the variable, RN job satisfaction predicting patient satisfaction with nursing care and physician satisfaction with nursing care. Again, RN job satisfaction does not predict the variables patient satisfaction with nursing care ($B = 3.649$, $SE\ B = 3.079$, $\beta = .164$) or physician satisfaction with nursing care ($B = -.056$, $SE\ B = .165$, $\beta = -.048$).

Table 33

Summary of Regression Analysis for Direct, Significant Positive Relationship Between RN Job Satisfaction and Patient Satisfaction with Nursing Care and Physician Satisfaction with Nursing Care (N= 53)

Independent Variable	Dependent Variable	R^2	F	p
RN Job Satisfaction	Patient Satisfaction With Nursing Care	.027	1.404 df (1, 51)	.241
RN Job Satisfaction	Physician Satisfaction With Nursing Care	.002	.115 df (1, 49)	.736

Independent Variable	Dependent Variable	B	SE B	β
RN Job Satisfaction	Patient Satisfaction With Nursing Care	3.649	3.079	.164
RN Job Satisfaction	Physician Satisfaction With Nursing Care	-.056	.165	-.048

$p<.05$

In summary, there was a positive, not significant relationship between RN job satisfaction and patient satisfaction with nursing care and an inverse, not significant relationship between RN job satisfaction and physician satisfaction with nursing care. RN job satisfaction does not have a significant relationship with the variables patient and physician satisfaction with nursing care. Hence, aim two: research hypothesis four was not supported.

Aim two: Hypothesis 5. To analyze the hypothesis, "There is a direct, significant positive relationship between RN perceptions of the practice environment and patient and physician satisfaction", Pearson product-moment correlation coefficient, r, and regression statistics were used. There was a positive, significant relationship between RN perceptions of the practice environment and patient satisfaction ($r=.278$, $p<.044$) and a positive, not significant relationship to physician satisfaction($r=-.026$,

p<.859). Table 16 displays the correlations and significance between the variables RN perceptions of the practice environment, patient satisfaction and physician satisfaction.

Regression statistics were used to analyze the predictive relationship between RN perceptions of the practice environment, patient satisfaction with nursing care and physician satisfaction with nursing care. R^2 and F statistics that define the relationship of RN perceptions of the practice environment with the variables patient satisfaction with nursing care (R^2 = .078, F (1, 51) =4.286, p<.044) and physician satisfaction with nursing care (R^2 =.001, F (1, 49) = .032, p<.859) are displayed in Table 34. RN perceptions of the practice environment have a relationship with patient satisfaction with nursing care. However, RN perceptions of the practice environment did not have a relationship to physician satisfaction with nursing care. RN perceptions of the practice environment accounted for 7.8% of the variance with the variable patient satisfaction with nursing care; and only .1% of the variance for physician satisfaction with nursing care. Table 34 depicts the R^2 and F statistics for the variables RN perceptions of the practice environment, patient satisfaction with nursing care and physician satisfaction with nursing care. Table 34 depicts the summary of the regression analysis for the variable, RN perceptions of the practice environment predicting patient satisfaction with nursing care and physician satisfaction with nursing care. Again, RN perceptions of the practice environment predicted patient satisfaction with nursing care (B=7.447, SE B=3.597, β = .278); however, did not predict physician satisfaction with nursing care (B =.035, SE B = .194, β= .026).

Table 34

Summary of Regression Analysis for Direct, Significant Positive Relationship between RN Perceptions of the Practice Environment (PPE) and Patient Satisfaction with Nursing Care (N= 53)

Independent Variable	Dependent Variable	R^2	F	p
RN PPE	Patient Satisfaction With Nursing Care	.078	4.286 df (1, 51)	.044*
RN PPE	Physician Satisfaction With Nursing Care	.001	.032 df (1, 49)	.859

Independent Variable	Dependent Variable	B	SE B	β
RN PPE	Patient Satisfaction With Nursing Care	7.447	3.597	.278*
RN PPE	Physician Satisfaction With Nursing Care	.035	.194	.026

*p<.05

In summary, there was a positive significant relationship between RN perceptions of the practice environment and patient satisfaction with nursing care. There was a positive, not significant relationship between RN perceptions of the practice environment and physician satisfaction with nursing care. Findings suggest that RN perceptions of the practice environment have a relationship with patient satisfaction with nursing care. RN perceptions of the practice environment did not predict physician satisfaction with nursing care in this study. Therefore, aim two, hypothesis five was not supported.

Aim two: Hypothesis 6. To analyze the hypothesis, "There is a direct, significant inverse relationship between RN job satisfaction and nurse turnover and vacancy rates", Pearson product-moment correlation coefficients, r, and regression

statistics were used. There was an inverse, not significant relationship between RN job satisfaction and RN turnover rate ($r = -.050$, $p < .723$) and an inverse, not significant relationship to RN vacancy rate ($r = -.021$, $p < .880$). Table 16 displays the correlations and significance between the variables RN job satisfaction and RN turnover rate and RN vacancy rate.

Regression statistics were used to analyze the predictive relationship between RN job satisfaction, RN turnover rate and RN vacancy rate. R^2 and F statistics that define the effect of RN job satisfaction with the variables RN turnover rate ($R^2 = .002$, $F(1, 51) = .127$, $p < .723$) and RN vacancy rate ($R^2 = .000$, $F(1, 51) = .023$, $p < .880$) are displayed in Table 35. RN job satisfaction does not have a significant relationship to RN turnover or RN vacancy rates. RN job satisfaction accounted for .2% of the variance with the variable RN turnover rate and less than 1% of the variance for RN vacancy rate. In addition, Table 35 depicts the summary of the regression analysis for the variable, RN job satisfaction predicting RN turnover and RN vacancy rates. Again, RN job satisfaction, in this study, does not predict RN turnover rates ($B = -.015$, $SE\ B = .043$, $\beta = -.050$) or RN vacancy rates ($B = -.007$, $SE\ B = .049$, $\beta = -.021$).

Table 35
Summary of Regression Analysis for Direct, Significant Inverse Relationship between RN Job Satisfaction and RN Turnover Rate and RN Vacancy Rate (N= 53)

Independent Variable	Dependent Variable	R^2	F	p
RN Job Satisfaction	RN Turnover Rate	.002	.127 df (1, 51)	.723
RN Job Satisfaction	RN Vacancy Rate	.000	.023 df (1, 51)	.880

Independent Variable	Dependent Variable	B	SE B	β
RN Job Satisfaction	RN Turnover Rate	-.015	.043	-.050
RN Job Satisfaction	RN Vacancy Rate	-.007	.049	-.021

$p<.05$

In summary, there was an inverse, not significant relationship between the independent variable RN job satisfaction and dependent variables RN turnover and RN vacancy rates. Moreover, RN job satisfaction did not predict RN turnover or RN vacancy rates in this study. Therefore, research hypothesis seven was not supported.

Aim two: Hypothesis 7. To analyze the hypothesis, "There is a direct, significant inverse relationship between RN perceptions of the practice environment and nurse turnover and vacancy rates", Pearson product-moment correlation coefficients, r, and regression statistics were used. There was a positive, not significant relationship between RN perceptions of the practice environment and RN turnover rate ($r= .069$, $p<.624$) and an inverse, not significant relationship to RN vacancy rate ($r= -.092$, $p<.511$). Table 16 displays the correlations and significance between the variables RN perceptions of the practice environment and RN turnover rate and RN vacancy rate.

Regression statistics were used to analyze the predictive relationship between RN perceptions of the practice environment, RN turnover rate and RN vacancy rate. R^2 and F statistics that define the effect of RN perceptions of the practice environment with the

variables RN turnover rate (R^2 = .003, F (1, 51) = .174, p<.678) and RN vacancy rate (R^2 = .009, F (1, 51) = .439, p<.511) are displayed in Table 36. RN perceptions of the practice environment did not have a significant relationship with RN turnover or RN vacancy rates. RN perceptions of the practice environment accounted for .3% of the variance with the variable RN turnover rate and .9% of the variance for RN vacancy rate. Also, Table 36 depicts the summary of the regression analysis for the variable, RN perceptions of the practice environment predicting RN turnover and RN vacancy rates. Again, RN perceptions of the practice environment, in this study, did not predict RN turnover rates (B=-.022, SE B=.052, β = -.058) or RN vacancy rates (B = -.039, SE B = .058, β= -.092).

Table 36

Summary of Regression Analysis for Direct, Significant Inverse Relationship between RN Perceptions of the Practice Environment (PPE) RN Turnover Rate and RN Vacancy Rates (N= 53)

Independent Variable	Dependent Variable	R^2	F	p
RN PPE	RN Turnover Rate	.003	.174 df (1, 51)	.678
RN PPE	RN Vacancy Rate	.009	.439 df (1, 51)	.511

Independent Variable	Dependent Variable	B	SE B	β
RN PPE	RN Turnover Rate	-.022	.052	-.058
RN PPE	RN Vacancy	-.039	.058	-.092

p<.05

In summary, there was a positive, not significant relationship between RN perceptions of the practice environment and RN turnover rate. Further, there was an inverse, not significant relationship between RN perceptions of the practice environment and RN vacancy rates. RN perceptions of the practice environment did not impact RN turnover and RN vacancy rates. Therefore, aim two, hypothesis seven was not supported.

Aim 3

The final aim was to investigate the effect of the moderating variable RN hours of care and the effect on the relationship between RN job satisfaction and RN perceptions of the practice environment with the dependent variables: patient outcomes (fall, hospital-acquired pressure ulcers, and medication error rates), nursing outcomes (patient and physician satisfaction), and hospital outcomes (nurse turnover and vacancy rates).

Aim three: Hypothesis 1. To test the hypothesis, "RN hours of care significantly affects the relationship between RN job satisfaction, patient, nursing and hospital outcomes", multiple regression statistics were conducted. Amount of R^2 change and significance was analyzed for each equation created to determine the effect of RN hours of care on the relationships between the independent and outcome indicators (Baron & Kenny, 1986). Findings suggest that RN hours of care do not impact the relationship between RN job satisfaction and patient, nursing and hospital outcomes. The summary of regression statistics, R^2 and F, depicting the interaction between RN job satisfaction and RN hours of care and the dependent variable fall rate was displayed in Table 37. The F tests evaluated and discussed are associated with the change in R-square rather than the F test for R-square itself. In addition, Table 37

depicts a summary of regression analysis which elucidates the interaction between the variables RN job satisfaction and RN hours of care and the predictive relationship to fall rate. The interaction between RN job satisfaction and RN hours of care does not predict unit level fall rate (B = -.337, SE B = .285, β= -2.296).

In this study, the variables RN job satisfaction and RN Hours of Care does not have a significant relationship with unit level fall rate (R^2 = .134, F (1,49) = 1.403 , p <.242), medication error rate (R^2 = .017, F (1,49) = .678, p <.414), patient satisfaction with nursing care (R^2 = .153, F (1,49) = .703, p <.406), physician satisfaction with nursing care (R^2 = .160, F (1,49) = .012, p <.915), RN turnover rate (R^2 = .021, F (1,49) = .461, p <.500), RN vacancy rate (R^2 = .002, F (1,49) = .015, p <.902). However, findings suggest that RN job satisfaction and RN Hours of Care may have a relationship to unit level pressure ulcer rates (R^2 = .472, F (1, 49) = 4.804, p <.414).

Table 37

Summary of Regression and Interaction Analysis for RN Job Satisfaction and RN Hours of Care Influencing Fall Rate (N=53)

Variable	R^2	Sig F Change	p	B	SE B	β
Step 1						
RN Job Satisfaction	. 007	.353(1, 51)	.555	.511	.859	.083
Step 2						
RN Job Satisfaction	.109	5.758(1, 50)	.020*	.738	.827	.120
RN Hours of Care				-.197	.082	-.322
Step 3						
RN Job Satisfaction	.134	1.403 (1, 49)	.242	2.918	2.017	.474
RN Hours of Care				1.163	1.151	1.901
RN Job Satisfaction x RN Hours of Care				-.337	.285	-2.296

*p<.05

The summary of regression statistics, R^2 and Sig F Change, depicting the interaction between RN job satisfaction and RN hours of care and the dependent variable medication error rate are displayed in Table 38. Again, the variables RN job satisfaction and RN hours of care did not have a relationship to the unit level medication error rate ($R^2 = .017$, $F(1, 49) = .678$, $p < .414$). Interestingly, the variables RN job satisfaction and RN hours of care did not have an inverse relationship as hypothesized. Further, Table 38 reflects a summary of regression analysis which describes the interaction between the variables RN job satisfaction and RN hours of care and the predictive relationship to medication error rate. The interaction between

RN job satisfaction and RN hours of care did not predict unit level medication error rate (B = .653, SE B = .793, β= 1.700). In addition, the relationship was positive, rather than inverse.

Table 38

Summary of Regression and Interaction Analysis for RN Job Satisfaction and RN Hours of Care Influencing Medication Error Rate (N=53)

Variable	R^2	Sig F Change	p	B	SE B	β
Step 1						
RN Job Satisfaction	.000	.001 df (1, 51)	.979	.059	2.255	.004
Step 2						
RN Job Satisfaction	.003	.172 df (1, 50)	.681	-.050	2.288	-.003
RN Hours of Care				.094	.227	.059
Step 3						
RN Job Satisfaction	.017	.678 df (1, 49)	.414	-4.271	5.618	- .265
RN Hours of Care				-2.538	3.206	-1.587
RN Job Satisfaction x RN Hours of Care				.653	.793	1.700

p<.05

The summary of regression statistics, R^2 and Sig F Change, depicting the interaction between RN job satisfaction and RN hours of care and the dependent variable pressure ulcer rate are displayed in Table 39. Findings suggest that RN job satisfaction and RN Hours of Care may have a relationship with unit level pressure ulcer rates (R^2 = .472, F (1, 49) = 4.804, p <.414). Further, Table 39 reflects a summary of regression analysis which explains the interaction between the variables RN job

satisfaction and RN hours of care and the predictive relationship to pressure ulcer rate. The interaction between RN job satisfaction and RN hours of care predicts unit level pressure ulcer rate in this study (B = .127, SE B = .058, β= 3.319). Interestingly, the relationship was not inverse; as hypothesized. Rather, units with higher levels of RN job satisfaction and RN hours of care had more pressure ulcers.

Table 39

Summary of Regression and Interaction Analysis for RN Job Satisfaction and RN Hours of Care Influencing Pressure Ulcer Rate (N=53)

Variable	R^2	Sig F Change	p	B	SE B	β
Step 1						
RN Job Satisfaction	.472	3.687 df (1, 51)	.060	.417	.217	.260
Step 2						
RN Job Satisfaction	.420	30.391 df (1, 50)	.000	.308	.174	.191
RN Hours of Care				.095	.017	.598*
Step 3						
RN Job Satisfaction	.472	4.804 df (1, 49)	.033*	-.515	.411	- .320
RN Hours of Care				-.417	.235	-2.615
RN Job Satisfaction x RN Hours of Care				.127	.058	3.319*

*p<.05

Figure 2 portrays a scatterplot diagram that illustrates the relationship between the variables RN job satisfaction and unit level pressure ulcer rate. The relationship between the variables was positive, weak and non-linear. The unit with the lowest RN job satisfaction and lowest pressure ulcer rate was a labor and delivery unit and the unit

with the highest pressure ulcer rate and higher level of RN job satisfaction was an adult intensive care unit.

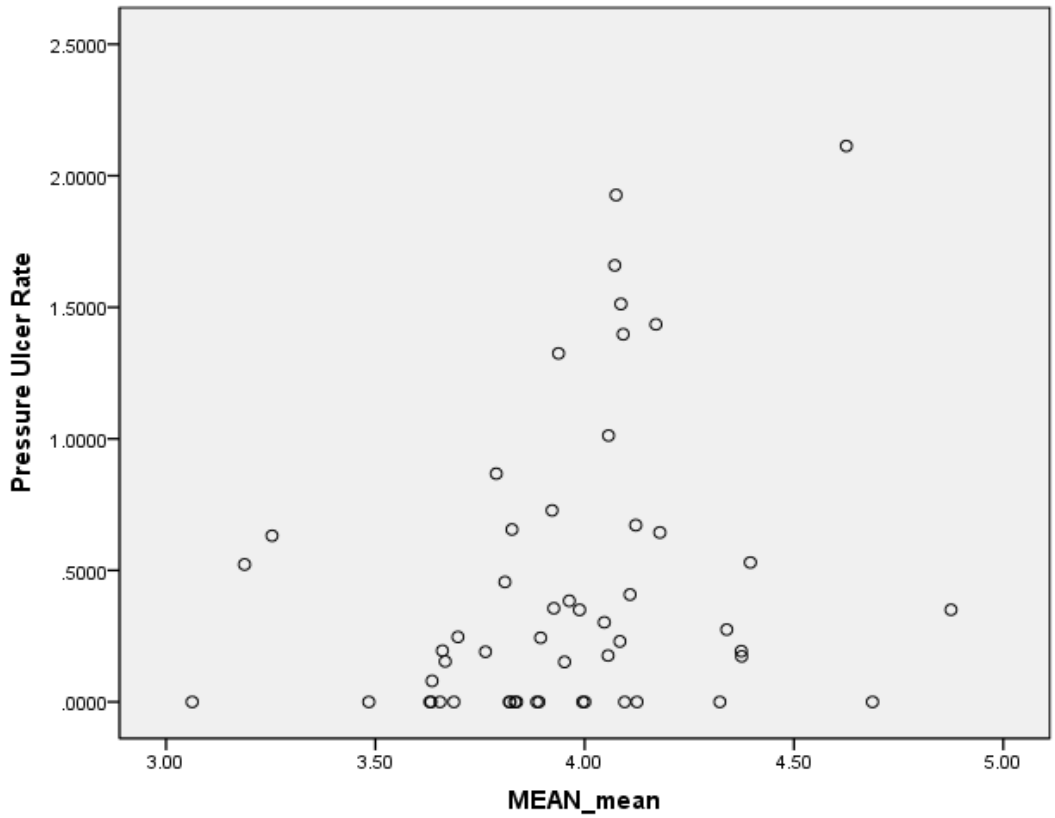

Figure 2. Direction, Strength and Linearity of Relationships between RN Job Satisfaction (Mean_mean) and Pressure Ulcer Rate

Figure 3 represents a scatterplot depicting the relationship between RN hours of care and Unit Level Pressure Ulcer Rates. The relationship was positive, weak and non-linear. Units with higher hours of care have higher rates of pressure ulcers; these units are identified as t intensive care units. The units with the lower hours of care and fewer pressure ulcers are the labor and delivery units.

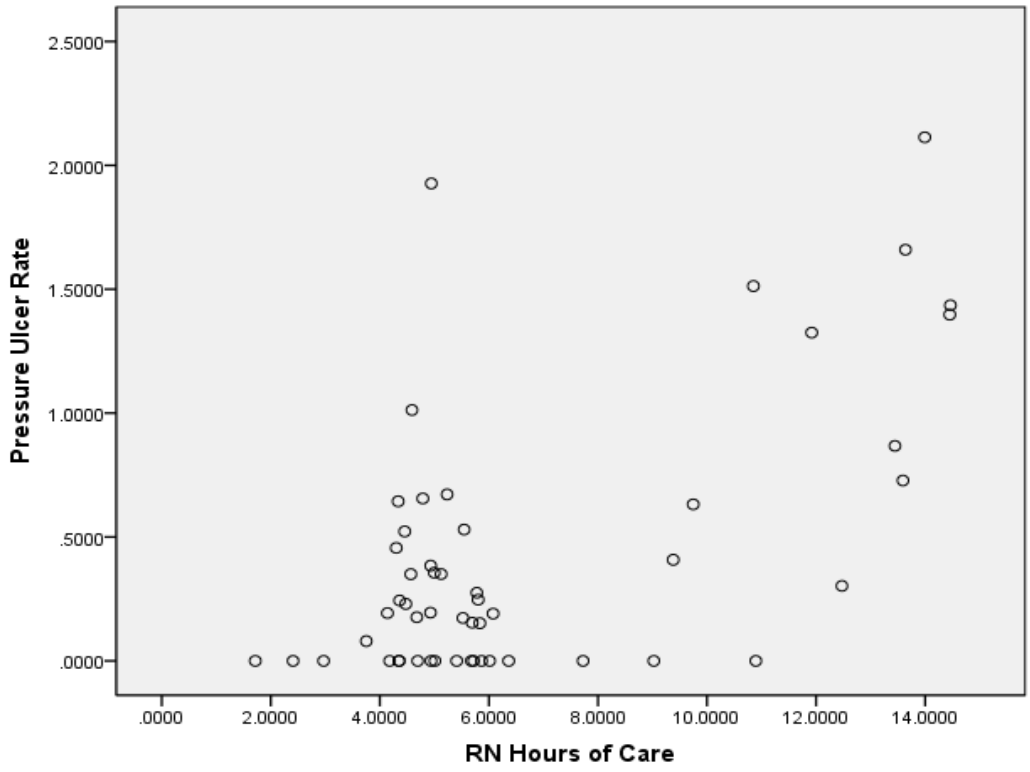

Figure 3. Direction, Strength and Linearity of Relationships between RN Hours of Care and Pressure Ulcer Rates

Figure 4 illustrates the effect of RN job satisfaction levels on predicted pressure ulcer rates as moderated by RN hours of care. Nursing units with higher RN hours of Care have higher pressure ulcer rates. Pressure ulcer rates depend on the level of RN job satisfaction. There was a marked increase in pressure ulcer rates on those units with higher levels of RN job satisfaction.

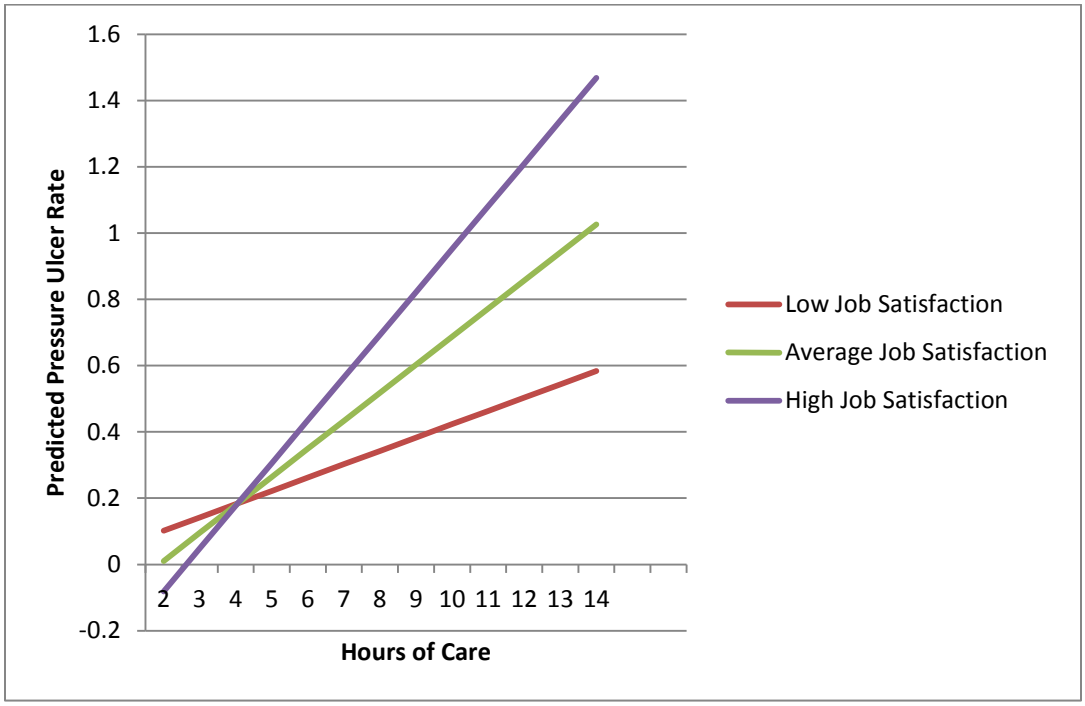

Figure 4. Effect of RN Job Satisfaction on Predicted Pressure Ulcer Rates Moderated by RN Hours of Care.

The summary of regression statistics, R^2 and Sig F Change, illustrating the interaction between RN job satisfaction and RN hours of care and the dependent variable patient satisfaction with nursing care are displayed in Table 40. Again, the interaction between RN job satisfaction and RN hours of care does not have a

relationship with patient satisfaction with nursing care (R^2 = .153, F (1, 49) = .703, p <.406). Table 40 portrays a summary of regression analysis which elucidates the interaction between the variables RN job satisfaction and RN hours of care and the predictive relationship to patient satisfaction with nursing care. Again, the interaction between RN job satisfaction and RN hours of care did not predict patient satisfaction with nursing care (B = -.854, SE B = 1.019, β= -1.607). In addition, the relationship was inverse rather than positive as proposed in the hypothesis.

Table 40
Summary of Regression and Interaction Analysis for RN Job Satisfaction and RN Hours of Care Influencing Patient Satisfaction with Nursing Care (N=53)

Variable	R^2	Sig F Change	p	B	SE B	β
Step 1						
RN Job Satisfaction	.027	1.404 df (1, 51)	.241	3.649	3.079	.164
Step 2						
RN Job Satisfaction	.141	6.647 df (1, 50)	.013	2.782	2.941	.125
RN Hours of Care				.753	.292	.340
Step 3						
RN Job Satisfaction	.153	.703 df (1, 49)	.406	8.304	7.218	.373
RN Hours of Care				4.196	4.118	1.896
RN Job Satisfaction x RN Hours of Care				-.854	1.019	-1.607

p<.05

The summary of regression statistics, R^2 and Sig F Change, showing the interaction between RN job satisfaction and RN hours of care and the dependent variable physician satisfaction with nursing care are displayed in Table 41. Once again, the interaction between the variables RN job satisfaction and RN hours of care does not have a significant relationship with physician satisfaction with nursing care ($R^2 = .160$, $F(1, 49) = .012$, $p < .915$). Moreover, Table 41 reflects a summary of regression analysis which describes the interaction between the variables RN job satisfaction and RN hours of care and the predictive relationship to physician satisfaction with nursing care. Once again, the interaction between RN job satisfaction and RN hours of care did not predict physician satisfaction with nursing care ($B = -.005$, $SE\ B = .050$, $\beta = -.215$). In addition the relationship was not positive as proposed in the hypothesis.

Table 41

Summary of Regression and Interaction Analysis for RN Job Satisfaction and RN Hours of Care Influencing Physician Satisfaction with Nursing Care (N=53)

Variable	R^2	Sig F Change	p	B	SE B	β
Step 1						
RN Job Satisfaction	.002	.115 df (1, 51)	.736	-.056	.165	-.048
Step 2						
RN Job Satisfaction	.160	9.006 df (1, 50)	.004	-.126	.154	-.109
RN Hours of Care				.042	.014	.402
Step 3						
RN Job Satisfaction	.160	.012 df (1, 49)	.915	-.092	.352	-.079
RN Hours of Care				.064	.204	.610
RN Job Satisfaction x RN Hours of Care				-.005	.050	-.215

$p<.05$

The summary of regression statistics, R^2 and Sig F Change, depicting the interaction between RN job satisfaction and RN hours of care and the dependent variable RN turnover rate are displayed in Table 42. As stated prior, the interaction between RN job satisfaction and RN hours of care did not impact the unit level RN turnover rate ($R^2 = .021$, $F (1, 49) = .461$, $p < .500$). In addition, Table 42 portrays a summary of regression analysis which explains the interaction between the variables RN job satisfaction and RN hours of care and the predictive relationship to RN turnover rate. The interaction between RN job satisfaction and RN hours of care did not predict RN turnover rate ($B = -.010$, $SE B = .015$, $\beta = -1.400$).

Table 42

Summary of Regression and Interaction Analysis for RN Job Satisfaction and RN Hours of Care Influencing RN Turnover Rate (N=53)

Variable	R^2	Sig F Change	p	B	SE B	β
Step 1						
RN Job Satisfaction	.002	.127 df (1, 51)	.723	-.015	.043	-.050
Step 2						
RN Job Satisfaction	.011	.447 df (1, 50)	.507	-.012	.044	-.039
RN Hours of Care				-.003	.004	-.095
Step 3						
RN Job Satisfaction	.021	.461 df (1, 49)	.500	.055	.107	.177
RN Hours of Care				.039	.061	1.261
RN Job Satisfaction x RN Hours of Care				-.010	.015	-1.400

$p<.05$

The summary of regression statistics, R^2 and Sig F Change, depicting the interaction between RN job satisfaction and RN hours of care and the dependent variable RN vacancy rate are displayed in Table 43. Again, the interaction between the variables RN job satisfaction and RN hours of care does not impact unit level RN vacancy rate ($R^2 = .002$, $F (1, 49) = .015$, $p < .902$). Table 43 portrays a summary of regression analysis which elucidates the interaction between the variables RN job satisfaction and RN hours of care and the predictive relationship to RN vacancy rate. Finally, the interaction between RN job satisfaction and RN hours of care did not predict RN vacancy rate ($B = .002$, $SE\ B = .017$, $\beta = .257$).

Table 43

Summary of Regression and Interaction Analysis for RN Job Satisfaction and RN Hours of Care Influencing RN Vacancy Rate (N=53)

Variable	R^2	Sig F Change	p	B	SE B	β
Step 1						
RN Job Satisfaction	.000	.023 df (1, 51)	.880	-.007	.049	-.021
Step 2						
RN Job Satisfaction	.002	.067 df (1, 50)	.797	-.006	.050	-.017
RN Hours of Care				-.001	.005	-.037
Step 3						
RN Job Satisfaction	.002	.015 df (1, 49)	.902	-.020	.123	-.057
RN Hours of Care				-.010	.070	-.285
RN Job Satisfaction x RN Hours of Care				.002	.017	.257

$p<.05$

In summary, the interaction among the variables RN job satisfaction and RN Hours of Care did not have a significant relationship with fall rate, medication error rate, patient satisfaction with nursing care, physician satisfaction with nursing care, RN turnover rate, and RN vacancy rate. However, findings suggest that the interaction between RN job satisfaction and RN Hours of Care has a positive relationship, rather than an inverse relationship with pressure ulcer rates. Therefore, aim 3, hypothesis one was not supported.

Aim three: Hypothesis 2. To test the hypothesis, "RN hours of care significantly impacts the relationship between RN perceptions of the practice

environment, patient, nursing and hospital outcomes", multiple regression statistics were conducted. Amount of R^2 change and significance was assessed between equations created to determine the effect of RN hours of care on the relationships between the independent and outcome indicators (Baron & Kenny, 1986).

Findings suggest that RN hours of care does not impact the relationship between RN perceptions of the practice environment and patient, nursing and hospital outcomes. The variables RN perceptions of the practice environment and RN hours of care did not have a relationship with fall rate (R^2 = .112, F (1,49) =.409, p <.525), medication error rate (R^2 = .035, F (1,49) = .639, p <.428), pressure ulcer rate (R^2 = .412, F (1,49) = 2.15, p <.149),patient satisfaction with nursing care (R^2 = 209, F (1,49) = 1.169, p <.285), physician satisfaction with nursing care (R^2 = .154, F (1,49) =.293, p <.591), RN turnover rate (R^2 = .027, F (1,49) =.738, p <.395), and RN vacancy rate (R^2 = .024, F (1,49) =.709, p <.404). The interaction between RN perceptions of the practice environment and RN hours of care did not predict the unit level fall rate (B = -.184, SE B = .288, β = -.994), medication error rate (B = -.628, SE B = .786, β = - 1.296), pressure ulcer rate (B = -.090, SE B = .061, β = - 1.856), patient satisfaction with nursing care (B = 1.065, SE B = .985, β = 1.587), physician satisfaction with nursing care (B = .027, SE B = .050, β = .844), RN turnover rate (B = -.013, SE B = .015, β = - 1.398), and RN vacancy rate (B = .014, SE B = .017, β = 1.372).

The summary of regression statistics, R^2 and Sig F Change, depicting the interaction between RN perceptions and RN hours of care and the predictive relationship to fall rate was displayed in Table 44. The F tests evaluated and discussed are associated with the change in R-square rather than the F test for R-square itself.

Further, Table 44 reflects a summary of regression analysis which elucidates the interaction between the variables RN perceptions of the practice environment and RN hours of care and the predictive relationship to fall rate (B = -.184, SE B = .288, β = -.994).

Table 44

Summary of Regression and Interaction Analysis for RN Perceptions of the Practice Environment (PPE) and RN Hours of Care Influencing Fall (N=53)

Variable	R^2	Sig F Change	p	B	SE B	β
Step 1						
RN PPE	.006	.288 df (1, 51)	.594	.553	1.032	.075
Step 2						
RN PPE	.105	5.544 df (1, 50)	.023	.725	.992	.098
RN Hours of Care				-.193	.082	-.316
Step 3						
RN PPE	.112	.409 df (1, 49)	.525	2.001	2.230	.271
RN Hours of Care				.396	.924	.647
RN PPE x RN Hours of Care				-.184	.288	-.994

$p<.05$

The summary of regression statistics, R^2 and F, depicting the interaction between RN perceptions and RN hours of care and the predictive relationship to medication error rate are displayed in Table 45. The variables RN perceptions of the practice environment and RN hours of care do not have a significant relationship with medication error rate ($R^2 = .035$, $F (1, 49) = .639$, $p < .428$). Moreover, Table 45

documented the summary of regression analysis which elucidates the interaction between the variables RN perceptions of the practice environment and RN hours of care and the predictive relationship to medication error rate. The interaction between RN perceptions of the practice environment and RN hours of care did not predict the medication error rate (B = -.628, SE B = .786, β = - 1.296).

Table 45

Summary of Regression and Interaction Analysis for RN Perceptions of the Practice Environment (PPE) and RN Hours of Care Influencing Medication Error (N=53)

Variable	R^2	Sig F Change	p	B	SE B	β
Step 1						
RN PPE	.018	.916 df (1, 51)	.343	-2.567	2.682	-.133
Step 2						
RN PPE	.022	.240 df (1, 50)	.627	-2.664	2.710	-.138
RN Hours of Care				.110	.224	.069
Step 3						
RN PPE	.035	.639 df (1, 49)	.428	-1.621	6.078	.087
RN Hours of Care				2.116	2.519	1.323
RN PPE x RN Hours of Care				-.628	.786	-1.296

p<.05

The summary of regression statistics, R^2 and F, illustrating the interaction between RN perceptions and RN hours of care and the predictive relationship to pressure ulcer rate are displayed in Table 46. The interaction between RN perceptions

of the practice environment and RN hours of care does not have a relationship with unit level pressure ulcer rates (R^2 = .412, F (1, 49) = 2.15, p <.149). In addition, Table 46 documented the summary of regression analysis which elucidates the interaction between the variables RN perceptions of the practice environment and RN hours of care and the predictive relationship to pressure ulcer rate. The interaction between RN perceptions of the practice environment and RN hours of care did not predict unit level pressure ulcer rate (B = -.090, SE B = .061, β = - 1.856).

Table 46

Summary of Regression and Interaction Analysis for RN Perceptions of the Practice Environment (PPE) and RN Hours of Care Influencing Pressure Ulcer Rate (N=53)

Variable	R^2	Sig F Change	p	B	SE B	β
Step 1						
RN PPE	.008	.437 df (1, 51)	.512	.178	.269	.092
Step 2						
RN PPE	.386	30.742 df (1, 50)	.000*	.090	.214	.047
RN Hours of Care				.098	.018	.616
Step 3						
RN PPE	.412	2.151 df (1, 49)	.149	.712	.474	.369
RN Hours of Care				.385	.196	2.413
RN PPE x RN Hours of Care				-.090	.061	-1.856

p<.05

The summary of regression statistics, R^2 and F, describing the interaction between RN perceptions and RN hours of care and the predictive relationship to patient satisfaction with nursing care are displayed in Table 47. RN perceptions of the practice environment and RN hours of care do not have a relationship with patient satisfaction with nursing care ($R^2 = 209$, $F(1, 49) = 1.169$, $p < .285$). Further, Table 47 documented the summary of regression analysis which reveals the interaction between the variables RN perceptions of the practice environment and RN hours of care and the predictive relationship to patient satisfaction with nursing care. RN perceptions of the practice environment and RN hours of care do not have a predictive relationship with unit level patient satisfaction with nursing care ($B = 1.065$, $SE\ B = .985$, $\beta = 1.587$).

Table 47

Summary of Regression and Interaction Analysis for RN Perceptions of the Practice Environment (PPE) and RN Hours of Care Influencing Patient Satisfaction with Nursing Care (N=53)

Variable	R^2	Sig F Change	p	B	SE B	β
Step 1						
RN PPE	.078	4.286 df (1, 51)	.044*	7.447	3.597	.278
Step 2						
RN PPE	.190	6.917 df (1, 50)	.011*	6.785	3.414	.254
RN Hours of Care				.743	.283	.336
Step 3						
RN PPE	.209	1.169 df (1, 49)	.285	-.582	7.619	-.022
RN Hours of Care				-2.657	3.158	-1.201
RN PPE x RN Hours of Care				1.065	.985	1.587

*p<.05

The summary of regression statistics, R^2 and F, depicting the interaction between RN perceptions and RN hours of care and the predictive relationship to physician satisfaction with nursing care are displayed in Table 48. Unit level physician satisfaction with nursing care (R^2 = .154, F (1, 49) =.293, p <.591) was not impacted by the interaction between RN perceptions of the practice environment and RN hours of care. Table 48 documented the summary of regression analysis which explains the interaction between the variables RN perceptions of the practice environment and RN hours of care and the predictive relationship to physician satisfaction with nursing care.

Physician satisfaction with nursing care (B = .027, SE B = .050, β = .844) was not predicted by the interaction between the variables RN perceptions of the practice environment and RN hours of care.

Table 48

Summary of Regression and Interaction Analysis for RN Perceptions of the Practice Environment (PPE) and RN Hours of Care Influencing Physician Satisfaction with Nursing Care (N=53)

Variable	R^2	Sig F Change	p	B	SE B	β
Step 1						
RN PPE	.001	.032 df (1, 51)	.859	.035	.194	.026
Step 2						
RN PPE	.149	8.341 df (1, 50)	.006*	-.019	.182	-.014
RN Hours of Care				.041	.014	.387
Step 3						
RN PPE	.154	.293 df (1, 49)	.591	-.203	.387	-.014
RN Hours of Care				-.045	.160	-.429
RN PPE x RN Hours of Care				.027	.050	.844

p<.05

The summary of regression statistics, R^2 and F, depicting the interaction between RN perceptions and RN hours of care and the predictive relationship to RN turnover rate are displayed in Table 49. RN perceptions of the practice environment and RN hours of care does not have a significant relationship with RN turnover rate (R^2 = .027, F (1, 49) =.738, p <.395). In addition, Table 49 portrayed the summary of

regression analysis which describes the interaction between the variables RN perceptions of the practice environment and RN hours of care and the predictive relationship to RN turnover rate. The interaction between RN perceptions of the practice environment and RN hours of care did not predict RN turnover rate (B = -.013, SE B = .015, β = - 1.398).

Table 49

Summary of Regression and Interaction Analysis for RN Perceptions of the Practice Environment (PPE) RN Hours of Care Influencing RN Turnover Rate (N=53)

Variable	R^2	Sig F Change	p	B	SE B	β
Step 1						
RN PPE	.003	.174 df (1, 51)	.678	-.022	.052	-.058
Step 2						
RN PPE	.012	.458 df (1, 50)	.502	-.019	.052	-.051
RN Hours of Care				-.003	.004	-.095
Step 3						
RN PPE	.027	.738 df (1, 49)	.395	.071	.117	.191
RN Hours of Care				.038	.048	1.258
RN PPE x RN Hours of Care				-.013	.015	-1.398

p<.05

The summary of regression statistics, R^2 and F, depicting the interaction between RN perceptions and RN hours of care and the predictive relationship to RN vacancy rate are displayed in Table 50. Finally, RN perceptions of the practice environment and RN hours of care does not have a significant relationship with RN

vacancy rate (R^2 = .024, F (1, 49) =.709, p <.404). Further, Table 50 illustrated the summary of regression analysis which elucidates the interaction between the variables RN perceptions of the practice environment and RN hours of care and the predictive relationship to RN vacancy rate. Finally, the interaction between RN perceptions of the practice environment and RN hours of care did not predict the variable RN vacancy rate (B = .014, SE B = .017, β = 1.372).

Table 50

Summary of Regression and Interaction Analysis for RN Perceptions of the Practice Environment (PPE) and RN Hours of Care Influencing RN Vacancy Rate (N=53)

Variable	R^2	Sig F Change	p	B	SE B	β
Step 1						
RN PPE	.009	.439 df (1, 51)	.511	-.039	.058	-.092
Step 2						
RN PPE	.010	.052 df (1, 50)	.821	-.038	.059	-.090
RN Hours of Care				-.001	.005	-.032
Step 3						
RN PPE	.024	.709 df (1, 49)	.404	-.137	.132	-.328
RN Hours of Care				-.047	.055	-1.361
RN PPE x RN Hours of Care				.014	.017	1.372

p<.05

To summarize, the interaction between the variables RN perceptions of the practice environment and RN hours of care does not predict the unit level fall rate, medication error rate, pressure ulcer rate, patient satisfaction with nursing care,

physician satisfaction with nursing care, RN turnover rate, and RN vacancy rate. Hence, research hypothesis number ten was not supported.

Summary of Findings

Figure 5 depicts the β relationships among all the variables in this study. As previously noted there was a significant positive correlation between the variables RN job satisfaction and RN perceptions of the practice environment. In addition, there was a significant positive relationship between the variables RN perceptions of the practice environment and patient satisfaction with nursing care.

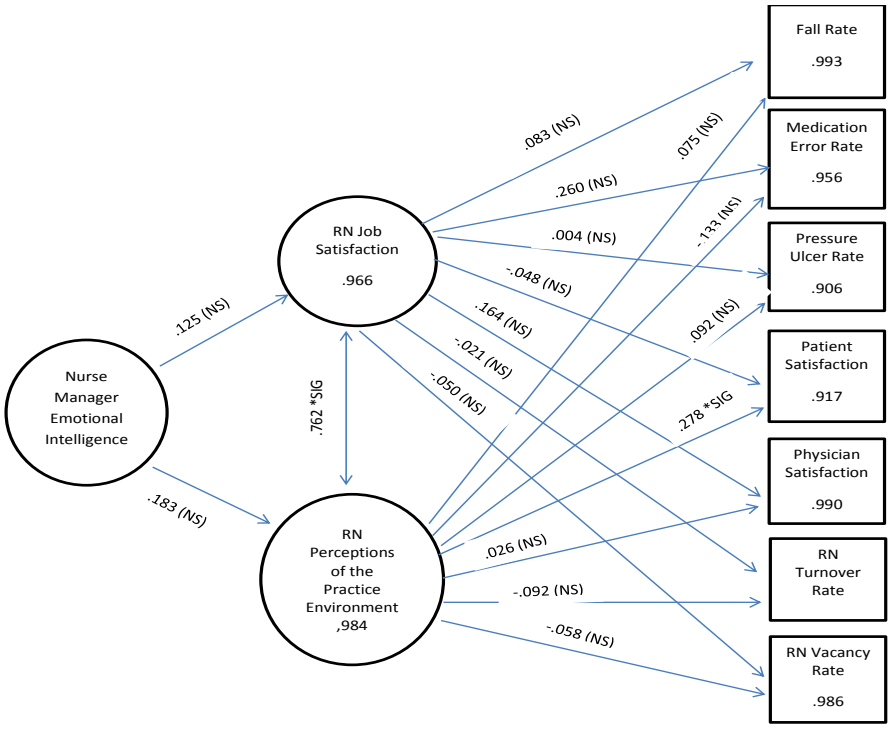

Figure 5. Logic Model with Betas: Nurse Manager Emotional Intelligence as a Predictor to Registered Nurse Job Satisfaction and RN Perceptions of the Practice Environment and the Relationship to Patient, Nursing and Hospital Outcomes.

Chapter Five

Discussion, Conclusions, and Recommendations

This chapter presents the summary of the study, discussion of the findings, conclusions, implications, limitations and recommendations for future research. This study attempted to explore if the level of nurse manager (NM) emotional intelligence (EI) predicts registered nurse (RN) job satisfaction and RN perceptions of the practice environment. In addition, the aim was to determine if NM EI, RN job satisfaction and RN perceptions of the practice environment are related to patient, nursing, and hospital outcomes. Further, the moderating variable RN hours of care was studied to determine the effect of the interactions among RN job satisfaction and RN perceptions of the practice environment on the dependent variables patient, nursing and hospital outcomes.

Summary of the Study

This study was a cross-sectional, correlational research design. The sample of RNs (N=659) and NMs (N=38) met criteria to participate. Units (N = 53) included in the study were medical surgical, telemetry, labor and delivery, pediatrics, adult and neonatal intensive care units. NMs agreeing to participate in the study completed a demographic instrument and the Mayer Salovey Caruso Emotional Intelligence Tool (MSCEIT) Version 2.0 (2002). After the nurse manager completed the survey instruments, RNs working on the NM's unit were contacted to participate in the study. RNs agreeing to participate in the study completed a demographic tool, the Developing Organizational

Capacity Tool (2000) and the Practice Environment Scale (2002).

This study also included 38 NMs that managed at least one nursing unit. A total of 53 units participated in the study. The average length of time that the NMs managed the nursing unit was 5.92 years, tenure at the study site was 16.91 years, and mean length of time as an RN was 23.08 years. Their gender was predominantly female (92.1%), ethnicity was White, non-Hispanic (81.6%); married (63.2%), and mean age was 51.27 years. Pre-licensure education (52.6%) was an Associated Degree and highest level of nursing education (44.7%) was a Bachelor's degree. The majority of NMs did not have a nursing certification (71.1%) and 52.6% stated that they participated in a professional organization. The NM demographics are similar to a study presented at the 2011 American Organization of Nurse Executives National Conference by Chase (2011). Chase (2011) described her study NM demographics as predominantly female (90%), having a Bachelor's Degrees (48%), and the majority (96%) managing the nursing unit greater than 10 years. The majority (42%) of the NMs were in the age range 45-54 years.

This study included 659 RNs. The average length of time that the RNs were employed on their nursing unit was 6.19 years and the mean length of time as an RN was 12.87 years. The majority of the RNs reported that they worked full-time (87.1%) and worked on the 7a-7p shift (51%). The RNs were predominantly female (92.4%), White, non-Hispanic (77.2%), married (65.3%), and with a mean age of 41.44 years. Pre-licensure education (65.9%) and highest level of nursing education (57.7%) were at the Associate's degree level. The majority of RNs did not have a nursing certification (73.3%) and did not participate in a professional organization (74.8%). These demographics were similar to the findings from the *2008 National Sample of Registered*

Nurses conducted by the Department of Health and Human Services Department (HRSA) (HRSA, 2011). The national sample reported an average RN age as 46 years, mostly female, White, non-Hispanic and RN preparation at the Associate Degree level (HRSA, 2011).

To determine if the level of nurse manager EI predicted RN job satisfaction and RN perceptions of the practice environment, bivariate correlation and simple linear regression statistics were conducted. To investigate whether NM EI, RN job satisfaction and RN perceptions of the practice environment had an indirect and direct (respectively) relationship to patient outcomes (fall, hospital acquired pressure ulcer and medication error rates), nursing outcomes (patient and physician satisfaction), and hospital outcomes (RN turnover and vacancy rates), multiple regression statistics were conducted. The relationship between NM EI and each mediating variable, RN job satisfaction and RN perceptions of the practice environment were assessed by analyzing the amount and significance of R^2 change. Finally, to determine the effect of the interaction between the moderating variable RN hours of care and the independent variables RN job satisfaction and RN perceptions of the practice environment and their impact on the dependent variables, multiple regression statistics were conducted. The amount and significance of R Square change significance were assessed between equations created to determine the effect of RN hours of care on the relationships between the independent and outcome indicators (Baron & Kenney, 1986).

Discussion and Conclusions

The following section outlines the discussion of the findings according to the aims of this study. Conclusions that might be drawn from this research are presented in this

section.

Effective nursing leadership has been described as one of the key determinants of both RN job satisfaction and the development of healthy practice environments (AHRQ, 2004; Boyle, et al., 1999; Cummings et al., 2005; IOM, 2004; Swearingen, 2004; Sherman & Pross, 2010). There was empiric evidence that describes EI as an attribute that has positive effect on relationship management (Cummings et al., 2005; Rego, Sousa, Pina e Cunha, Correia & Saur-Amaral, 2007; Skinner & Spurgeon, 2005; Mandell & Pherwani, 2003; Gardner & Stough, 2002). With minimal empiric studies in the nursing literature exploring the impact of NM emotional intelligence level on RN job satisfaction and perceptions of the practice environment, the aim of this study was to explore this relationship.

The M for NM EI was 102.97 which represented the average overall EI index for all NMs that participated in the study. The standard deviation for NM EI was ±13.80, whereby a manager scoring 116.77 was one standard deviation above the mean (102.97). The range of NM EI scores was 75.03 to 133.46. The EI index was a summary of NM performance on the MSCEIT (2002) (Mayer, Salovey & Caruso, 2002). NMs responded to questions on the MSCEIT (Mayer et al., 2002) that pertained to the four components of emotional intelligence (assessing, using, understanding and managing emotions). The normative sample average score was 100 with a standard deviation of 15. Hence in this study, the nurse manager's M score would be considered a high average score (Mayer et al., 2002).

RNs participating in this study tend to agree (M = 3.953) with the questions asked on the Developing Organizational Capacity Tool (Murphy, 2000); therefore,

appear to be on average satisfied with their jobs. Further, RNs completing the Practice Environment Scale had a mean score of 3.1758, hence are "somewhat agreed" with the questions asked related to elements of the practice environment (supervision, ability to provide quality nursing care, staffing, pay and nurse-physician collaboration). Study findings determined that there was a positive, significance relationship between RN job satisfaction and RN perceptions of the practice environment ($r = .762$, $p<.01$). Rathert and May (2007) studied the attributes of the practice environment and the relationship to nurse job satisfaction. They identified that nurses who perceive their practice environments as patient centered have greater job satisfaction (Rathert & May, 2007).

Findings suggest that NM EI does not predict RN job satisfaction ($p<.373$) or RN perceptions of the practice environment ($p<.189$). In a study evaluating the influence of manager EI on team member work performance, Wong and Law (2002) found that total EI had significant effect on job satisfaction ($r=.40$, $p<.01$). However, in another study Wong and Law (2002) found that the managers level of EI had a minimal effect on job satisfaction ($r=.13$, $p<0.10$). This research did not support findings presented by Wong and Law (2002) that demonstrated EI having an effect on job satisfaction. The findings of this study do not support other research that conveys leadership EI has an effect on job satisfaction and the work environment (Skinner & Spurgeon, 2005; Kooker et al, 2006; Wong & Law, 2002; Cummings et al, 2005; Rego, Sousa, Pina e Cunha & Saur-Amaral, 2007; Gunnarsdottir et al., 2007; Werberg, 2010). Therefore, aim one, hypothesis one was not supported.

Empiric evidence suggests that there was a relationship between attributes of nursing leadership and effective nursing care, a positive practice environment, and

quality patient care outcomes (Scott, Sochalski, & Aiken, 1999; Havens & Aiken, 1999). This study examined whether NM EI, RN job satisfaction and RN perceptions of the practice environment have an indirect and direct (respectively) relationship to patient (fall, hospital acquired pressure ulcer and medication error rates), nursing (patient and physician satisfaction with nursing care), and hospital outcomes (RN turnover and vacancy rates).

Findings suggest that NM EI does not have a direct ($p<.175$) relationship with the outcome variable fall rate. Further, NM EI does not have an indirect relationship to falls with the mediating variables RN job satisfaction ($p<.440$) or RN perceptions of the practice environment ($p<.423$). This author was unable to locate empiric articles in the literature that have studied the direct or indirect relationship between a leader's emotional intelligence level and the effect on patient fall rates. Boyle (2004) studied how organizational characteristics influence the occurrence of adverse events such as falls. Participants completed the Nurses' Work Index – Revised instrument. Boyle (2004) noted that units with higher levels of autonomy/collaboration had lower incidences of pressure ulcers, fall, pneumonia, death and shorter lengths of stay as compared to those units with lower levels of autonomy/collaboration.

Results show that NM EI does not have a direct significant relationship with medication error rates ($p<.893$) nor does NM EI indirectly have a significant relationship with medication error rates via the mediating variables RN job satisfaction ($p<.966$) and RN perceptions of the practice environment ($p<.352$). Although there was limited empirical evidence related to the direct or indirect relationship between a leader's emotional intelligence level and the effect on patient medication error rates, Rather and

May (2007) studied the attributes of the practice environment and the relationship to RN job satisfaction and patient care outcomes. They found nursing units with a patient centered environment had a significant negative relationship to perceived medication errors. Further, the frequency of medication errors was significantly related to nursing job satisfaction.

Study outcomes suggest that NM EI does not indirectly relationship to pressure ulcer rates ($p<.586$) and NM EI does not indirect have a significant relationship with pressure ulcer rates via the mediating variables RN job satisfaction ($p<.071$) and RN perceptions of the practice environment ($p<.574$). This author was unable to locate empiric articles in the literature that have studied the direct or indirect relationship between a leader's emotional intelligence level and the effect on pressure ulcer rates. Boyle (2004) related that a practice environment with higher levels of autonomy/collaboration had lower incidences of pressure ulcers, falls, pneumonia, death and shorter length of stay. In addition, Boyle (2004) noted that nurse manager support, although not significant, was correlated inversely with pressure ulcer prevalence and death.

Results revealed that NM EI had a direct significant relationship with patient satisfaction with nursing care ($p<.001$); however, there was not an indirect significant relationship noted when the mediating variables RN job satisfaction ($p<.404$) and RN perceptions of the practice environment ($p<.117$) were added to the equation. Potential rationale for the direct, positive significant relationship between NM EI and patient satisfaction with nursing care could be related to the focus and interventions employed by organizations to improve patient satisfaction scores. Some management strategies

include managers rounding on patients to inquiry about care and problem solving patient identified opportunities prior to the patient leaving the hospital. This author was unable to locate empiric articles in the literature that have studied the direct or indirect relationship between a leader's emotional intelligence level and the effect on patient satisfaction with nursing care. Shen, Chiu, Hu Y, and Chang (2011) conducted a study to determine the factors that predicted quality of care from a nurse and patient perspective. Study results suggest that nurse physician relationships ($\beta = 0.56$, $p<.001$) and the hospital environment ($\beta = 0.53$, $p<.001$) are key predictors of quality nursing care from the nurse perspective. Key factors that predict quality of nursing care from a patient perspective are nurse physician collaboration ($\beta = 0.76$, $p<.001$), hospital environment ($\beta= 0.31$, $p<.001$), and ears of education ($\beta = -0.014$, $p<.029$) (Shen, et al., 2011). Hence, perceptions of the practice environment can influence satisfaction with nursing care (Shen, et al., 2011). This study did not support Shen and colleagues' (2011) study findings.

There was a positive, significant relationship between RN perceptions of the practice environment and patient satisfaction with the quality of nursing care. Larrabee et al. (2004) and Shen Chui, Hu Y, and Chang (2011) convey key contributors to patient satisfaction with the quality of nursing care are nurse-physician collaboration, perceived nursing care, and the hospital environment.

NM EI does not have a direct significant relationship with physician satisfaction with nursing care ($p<.960$). In addition, an indirect significant relationship was not noted with the mediating variables RN job satisfaction ($p<.735$) and RN perceptions of the practice environment ($p<.864$). This author was unable to locate empirical articles

in the literature that have studied the direct or indirect relationship between a leader's emotional intelligence level and the effect on physician satisfaction with nursing care. Riccio (2000) studied the perceptions of patient, physicians and nurse regarding their satisfaction with nursing care. Study results suggest that 19% of the physicians surveyed were satisfied with the quality of nursing care (Riccio, 2000). Physicians were most satisfied with the teaching ability of the nurse and most undecided about the technical aspects of care (Riccio, 2000). This study does not support Riccio's (2000) study findings.

Data from this study suggested that NM EI does not have a direct relationship with RN turnover ($p<.592$) or an indirect relationship via the mediating variables RN job satisfaction ($p< .592$) and RN perception of the practice environment ($p<.592$). This author was unable to locate empirical articles in the literature that have studied the direct or indirect relationship between a leader's emotional intelligence level and the effect on RN turnover rate. These results do not support other empirical findings in the literature that suggests that managerial support, job satisfaction and the practice environment impact RN turnover (Hayhurst, Saylor & Stuenkel, 2006; Coomber & Barriball, 2006; Hayes et al., 2006; Strachota et al., 2003).

Findings from this study show that a NM EI level does not have a direct relationship with RN vacancy rates ($p<.446$). Moreover, NM EI does not have an indirect relationship with RN vacancy rates via the mediating variables RN job satisfaction ($p<.805$) and RN perceptions of the practice environment ($p<.419$). This author was unable to locate empirical articles in the literature that have studied the direct or indirect relationship between a leaders' emotional intelligence level and the

effect on RN vacancy rate. A key contributor to RN turnover and higher levels of vacancy rates on the nursing units was the practice environment (Strachota et al., 2003).

There was evidence that supports that staffing or nursing hours of care can impact patient care outcomes (AHRQ, 2004; IOM, 2004; Needleman et al., 2001). This study investigated the variable RN hours of care and its effect on the relationship between RN job satisfaction and RN perceptions of the practice environment with each of the dependent variables: (a) patient (fall, hospital acquired pressure ulcer and medication error rates); (b) nursing (patient and physician satisfaction with nursing care); and (c) hospital outcomes (RN turnover and vacancy rates).

Study results indicated RN hours of care does not impact the relationship between RN perceptions of the practice environment and patient, nursing and hospital outcomes. Findings also suggest that RN hours of care did not impact the relationship between RN job satisfaction nursing and hospital outcomes. The interaction between RN job satisfaction and RN hours of care did not have a relationship with fall and medication error rates; however it did have a significant relationship with pressure ulcer rates (β = .127, $p<.033$). The relationship was positive, weak and non-linear. The unit with the lowest RN job satisfaction and lowest pressure ulcer rates was a labor and delivery department and the unit with the highest pressure ulcer rate and higher level of RN job satisfaction was an adult intensive care unit. Intuitively, those units with the higher RN hours of care (such as the intensive care units) would have fewer pressure ulcers. However, patients that are admitted to the intensive care units have a higher acuity level and perhaps a greater number of comorbidities that could trigger the development of a pressure ulcer. Further, the unit with the lowest RN hours of care (labor and delivery)

had the fewest number of pressure ulcers and the lowest level of job satisfaction. This study did not support empiric findings from other studies investigating the effects of staffing levels on patient care outcomes (AHRQ, 2004; IOM 2004; Needleman, Buerhaus, Mattke, et al., 2001).

Summary of Findings

In summary, the logic model (Figure 5) reported in Chapter Four conveys the betas and significance of the relationships analyzed in this study. There were two positive, significant relationships noted between the following variables: (a) RN job satisfaction and RN perceptions of the practice environment, and (b) RN perceptions of the practice environment and patient satisfaction with nursing care.

Limitations of the Study

Limitations of this study are described in this section. One limitation was that not all nursing units were included in the study. The units included in the study were medical-surgical, telemetry, neonatal intensive care, adult critical care, pediatric and labor and delivery nursing units in order to measure like dependent variables. Other units where nurses are employed, such as the emergency room, operating room, behavioral health and nursing departments with a minimal number of full-time equivalents were excluded because these units do not collect pressure ulcer or fall data. Thereby this study limited the generalizability of the results to these areas.

The sample represents nurse managers and registered nurses at eight hospitals located in the southeast region of the United States. Predominant gender for both the NMs and RNs was female which may limit the generalizations to a nursing division with a higher ratio of men. The ethnicity of the study sample for both NMs and RNs was

White, non-Hispanic, hence limiting the generalizability of this study to other ethnic groups.

The use of an on-line survey may be intimidating to a nurse manager participant that is not computer literate and may reduce the likelihood of involvement. In addition, the Mayer Salovey Caruso Emotional Intelligence Tool (MSCEIT) (2002) was 141 questions in length, which may impact results related to participant fatigue. These two limitations could have impacted the number of nurse managers that participated in this study. To mitigate this limitation, nurse managers were asked to sign-up for an orientation session with the primary investigator in order to answer questions regarding navigation on the computer.

The study could cause nurse manager anxiety since their EI results were not anonymous to the principal investigator. Discussion about the data being reported in aggregate and data being confidential was stressed. Study data were downloaded on a CD that was stored in a locked file cabinet in a secure office.

Fear to share perceptions when responding to the surveys could influence the accuracy of the RN responses. The informed consent was reviewed with the RN. The PI described to the participants that results are reported in aggregate and not shared with their nurse leader. In addition, the completed surveys were stored in a locked cabinet in a secure office.

Needleman and Buerhaus (2003) identified that there could be a potential for measurement error using administrative data (e.g. falls, medication errors and hospital acquired pressure ulcers). Administrative data can be collected via self-report and data abstraction from a closed medical record hence, causing data limitations and the risk of

observing inaccurate associations (Needleman & Buerhaus, 2003).

Medication errors or circumstances that have occurred that may have the chance to cause an error are reported by nursing and pharmacy team members at each of the study sites. Events that are near misses (that have not reached the patient) may not always be captured by nursing. The National Coordinating Council for Medication Error Reporting and Prevention (2009) also suggest that the use of medication error rates to compare health care organizations was not recommended for reasons that include: (a) differences in organization cultures that could impact team member reporting, (b) differences in definitions of medication errors, and (c) diversity in patient populations and differences in the types of reporting and detection systems. To reduce measurement error in this study, the principal investigator used data reported by nursing via event reports and analyzed by the study sites Risk Management departments, rather than data collected using ICD-9 codes.

In order to compare data among nursing units, the denominator of patient days was used. This has the advantage of allowing for a reliable comparison between like nursing units and hospitals (Study Sites, 2010).

Wound Ostomy Care Nurse (WOCN) departments were not consistently in place at the study sites. Sites where there was not a WOCN team, the RN staff was responsible for pressure ulcer stage assignment. Both the RN and the WOCN teams stage pressure ulcers based on the National Pressure Ulcer Advisory Panel (NPUAP) criteria (NPUAP, 2009). There could be inter-rater reliability opportunities having RN staff assign pressure ulcers without competency validation of the experts (Wound Ostomy Nurses) in wound care.

In addition, data were reviewed for missing data. One RN participant completed the Practice Environment Scale and did not complete the Developing Organizational Capacity tool; this participant was removed from the study sample. In addition, 148 out of 659 participants did not respond to question number nine on the Developing Organizational Capacity instrument. After review of the study packets, it was noted that question number 9 was missing from the Developing Organizational Capacity tool. Study packets were updated. Missing data were replaced for each participant by using the series mean. Missing data from the Developing Organizational Capacity (2000) instrument could impact the generalizability of the study results.

Outcome data were reported in aggregate by nursing unit. Individual cases were unable to be stratified at the unit level which could explain why there was no significance noted in this study.

For statistical power, using a medium effect size ($f^2 = .015$) and an alpha of 0.05, the mediation relationship between the variables NM EI, RN job satisfaction and RN perceptions of the practice environment demonstrate that a sample size of 75 nursing care units achieves 80% power to detect R^2 change. In addition, a sample of 75 nursing care units was required to detect significance in R^2 change for Aim 3, which suggests that hours of care was a moderator between variables (Baron & Kenney, 1986). This study enrolled a total of 53 nursing care units therefore this study could be under-powered. All eligible nurse managers were contacted to participate in the study, however, not all consented to participate in the study. Barriers to study participation are vast and could be related to fear of results being shared with senior nurse leaders.

Implications for Nursing

Emotional Intelligence, the ability to perceive, use, understand and manage emotions in self as well as others, has met controversy regarding whether it was a viable construct (Locke, 2005; Daus & Ashkanasay, 2003; Akerjordet & Severinsson, 2010). Few empirical studies have been conducted in the nursing domain investigating the effect of a nurse manager's level of emotional intelligence and its impact on RN job satisfaction, RN perceptions of the practice environment and patient, nursing and hospital outcomes. This research study intended to determine the relationships described above. The implications drawn from this cross-sectional, correlational research design study were presented in this section. Findings from this study have implications for nurses, healthcare leaders and for future research.

While this study did not show that a NMs level of EI affected RN job satisfaction and RN perceptions of the practice environment, there was a direct, significant impact on patient satisfaction with nursing care. NM EI subscales were studied to determine if there was a specific EI ability that had a greater effect on patient satisfaction with nursing care. Findings showed that NMs with higher levels with the abilities to perceive, use, understand and manage had higher levels of patient satisfaction with nursing care. This was an interesting finding and may be of interest to hospital administrators as organizations are faced with decreasing volumes and the advent of the Centers for Medicare and Medicaid Services (CMS) (2011) Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey that assesses patient perspectives of healthcare whereby data are presented nationally. With patient satisfaction with nursing care being a key priority for organizations, many are

eager to seek solutions to help improve these scores. In addition to NM level of EI, the variable practice environment had an effect on patient satisfaction with nursing care.

Even with this lack of empiric support of the proposed relationships identified in hypothesis one, further study of EI in the nursing domain should be conducted (Smith, Profetto-McGrath, & Cummings, 2009). Continued investigation was encouraged exploring the effect of EI on overall patient satisfaction. Further EI research should be conducted in healthcare settings to include evaluating the impact of bedside RN EI on patient satisfaction with nursing care and overall patient satisfaction with the hospital experience. Other research possibilities include studying the effect of a NM's level of EI using (empathy) and managing emotions influence on factors in the practice environment such as communication, nurse physician collaboration, managers' support. The effect of EI on other variables important in the work setting such as organizational commitment, job related stress and role strain need further investigation. Akerjordet and Severinsson (2010) remarked that even though there was lack of consensus on the concept EI, it has the potential to enhance nursing leadership.

Findings from the IOM (1999) have raised awareness that the health care environment was not error free. Hospitals are working aggressively to develop processes and creating systems to improve patient care outcomes and safety. Particularly, hospitals have a financial stake for improving outcomes and reducing errors (Centers of Medicare and Medicaid Services [CMS], 2011). Specifically, hospitals are being held financially accountable for conditions that are acquired while being hospitalized Hospital Acquired Conditions (HAC)(CMS, 2011). An example of a HAC was a hospital acquired pressure ulcer and a patient fall causing harm. Although

the direct effect of RN job satisfaction and RN perceptions of the practice environment and the interaction with RN hours of care did not impact patient outcomes, these variables need to be studied further. In particular, intervention studies should be conducted to determine if improvements in certain attributes of job satisfaction and perceptions of the practice environment can affect patient outcomes. Nursing must take the lead in knowing patient outcome data and strive for finding solutions that can be researched and shared with others to improve patient care outcomes.

Recommendations for Future Research

Based on the review of the literature and this research study, the following recommendations are made for future research.

1. Potential areas for future study include replicating this study with a larger sample size.
2. Further investigation of the effects of the registered nurse Total EI (and analysis of EI subscales) and the influence on patient satisfaction with nursing care.
3. Further research to determine if NMs with EI levels categorized as low, average and high differ in effect on RN job satisfaction and RN perceptions of the practice environment.
4. Investigate attributes of job satisfaction and the effect on patient, nursing and hospital outcomes.
5. Conduct further research between EI subscales and dependent variables such as patient satisfaction, nursing turnover and patient outcome variables.
6. Pursue further research studies investigating the relationship between a manager's level of emotional intelligence and overall patient satisfaction in the

healthcare environment.

7. Investigate the effect of nurses' EI on overall patient satisfaction and the "likelihood to recommend" the hospital.
8. Explore NM EI subscales as a moderating variable with RN job satisfaction and RN perceptions of the practice environment and the effect on nursing, hospital and patient care outcomes.

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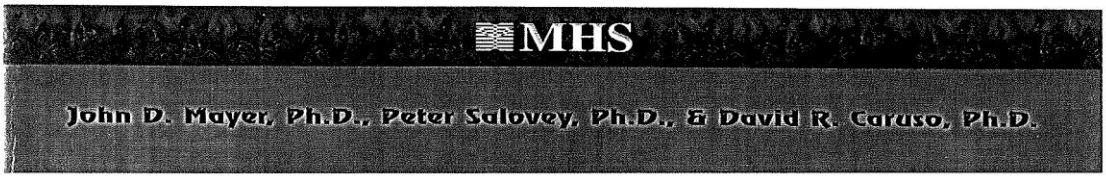
APPENDICES

Appendix A: Mayer – Salovey – Caruso Emotional Intelligence Tool

Mayer-Salovey-Caruso Emotional Intelligence Test

MSCEIT™

Item Booklet



Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool

General Instructions

The MSCEIT™ contains eight different sections. Each section has its own instructions. Try to answer every question. If you are unsure of the answer, make your best guess. Please record your answers on the separate MSCEIT™ Answer Sheet.

In the U.S.A.: P.O. Box 950, North Tonawanda, NY 14120-0950, (800) 456-3003
In Canada: 3770 Victoria Park Ave., Toronto, ON M2H 3M6, (800) 268-6011
International Tel: +1-416-492-2627, Fax: 1-800-540-4484 or +1-416-492-3343
Email: customerservice@mhs.com Website: www.mhs.com

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool

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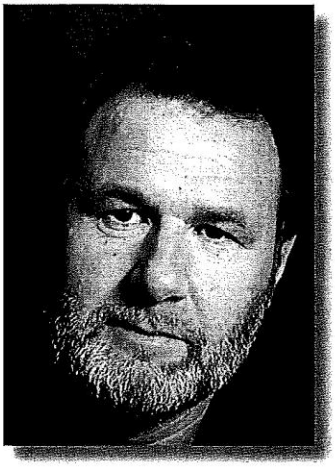
SECTION A

1.



Instructions: How much is each feeling below expressed by this face?
(Please select a response for each item.)

1. No happiness	1	2	3	4	5	Extreme happiness
2. No fear	1	2	3	4	5	Extreme fear
3. No surprise	1	2	3	4	5	Extreme surprise
4. No disgust	1	2	3	4	5	Extreme disgust
5. No excitement	1	2	3	4	5	Extreme excitement

3

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool

MSCEIT™

2.

Instructions: How much is each feeling below expressed by this face?
(Please select a response for each item.)

1. No happiness	1	2	3	4	5	Extreme happiness
2. No sadness	1	2	3	4	5	Extreme sadness
3. No fear	1	2	3	4	5	Extreme fear
4. No surprise	1	2	3	4	5	Extreme surprise
5. No excitement	1	2	3	4	5	Extreme excitement

4

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool

MSCEIT™

2.

Instructions: How much is each feeling below expressed by this face?

(Please select a response for each item.)

1. No happiness	1	2	3	4	5	Extreme happiness
2. No sadness	1	2	3	4	5	Extreme sadness
3. No fear	1	2	3	4	5	Extreme fear
4. No surprise	1	2	3	4	5	Extreme surprise
5. No excitement	1	2	3	4	5	Extreme excitement

4

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool

MSCEIT™

3.

Instructions: How much is each feeling below expressed by this face?

(Please select a response for each item.)

1. No happiness	1	2	3	4	5	Extreme happiness
2. No sadness	1	2	3	4	5	Extreme sadness
3. No fear	1	2	3	4	5	Extreme fear
4. No surprise	1	2	3	4	5	Extreme surprise
5. No excitement	1	2	3	4	5	Extreme excitement

5

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool

MSCEIT™

4.

Instructions: How much is each feeling below expressed by this face?

(Please select a response for each item.)

1. No happiness	1	2	3	4	5	Extreme happiness
2. No sadness	1	2	3	4	5	Extreme sadness
3. No fear	1	2	3	4	5	Extreme fear
4. No anger	1	2	3	4	5	Extreme anger
5. No disgust	1	2	3	4	5	Extreme disgust

6

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool

MSCEIT™

SECTION B

Instructions: Please select a response for each item.

1. **What mood(s) might be helpful to feel when creating new, exciting decorations for a birthday party?**

	Not Useful				Useful
a. annoyance	1	2	3	4	5
b. boredom	1	2	3	4	5
c. joy	1	2	3	4	5

2. **What mood(s) might be helpful to feel when composing an inspiring military march?**

	Not Useful				Useful
a. anger	1	2	3	4	5
b. excitement	1	2	3	4	5
c. frustration	1	2	3	4	5

3. **What mood(s) might be helpful to feel when following a very complicated, demanding, cooking recipe?**

	Not Useful				Useful
a. tension	1	2	3	4	5
b. sorrow	1	2	3	4	5
c. neutral mood	1	2	3	4	5

4. **What mood(s) might be helpful to feel when figuring out what caused a fight among three young children? Each of the three young children is telling a different story about how the fight started. Figuring out what happened requires attending to the details of the stories and weighing many facts.**

	Not Useful				Useful
a. happiness	1	2	3	4	5
b. surprise	1	2	3	4	5
c. sadness	1	2	3	4	5

7

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool

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5. **What mood(s) might be helpful for a doctor to feel when selecting a treatment plan for a patient with a cancerous tumor? The doctor must apply several known, but conflicting, principles in the treatment of the tumor.**

	Not Useful				Useful
a. happiness	1	2	3	4	5
b. neutral mood	1	2	3	4	5
c. anger and defiance	1	2	3	4	5

SECTION C

Instructions: Select the best alternative for each of these questions.

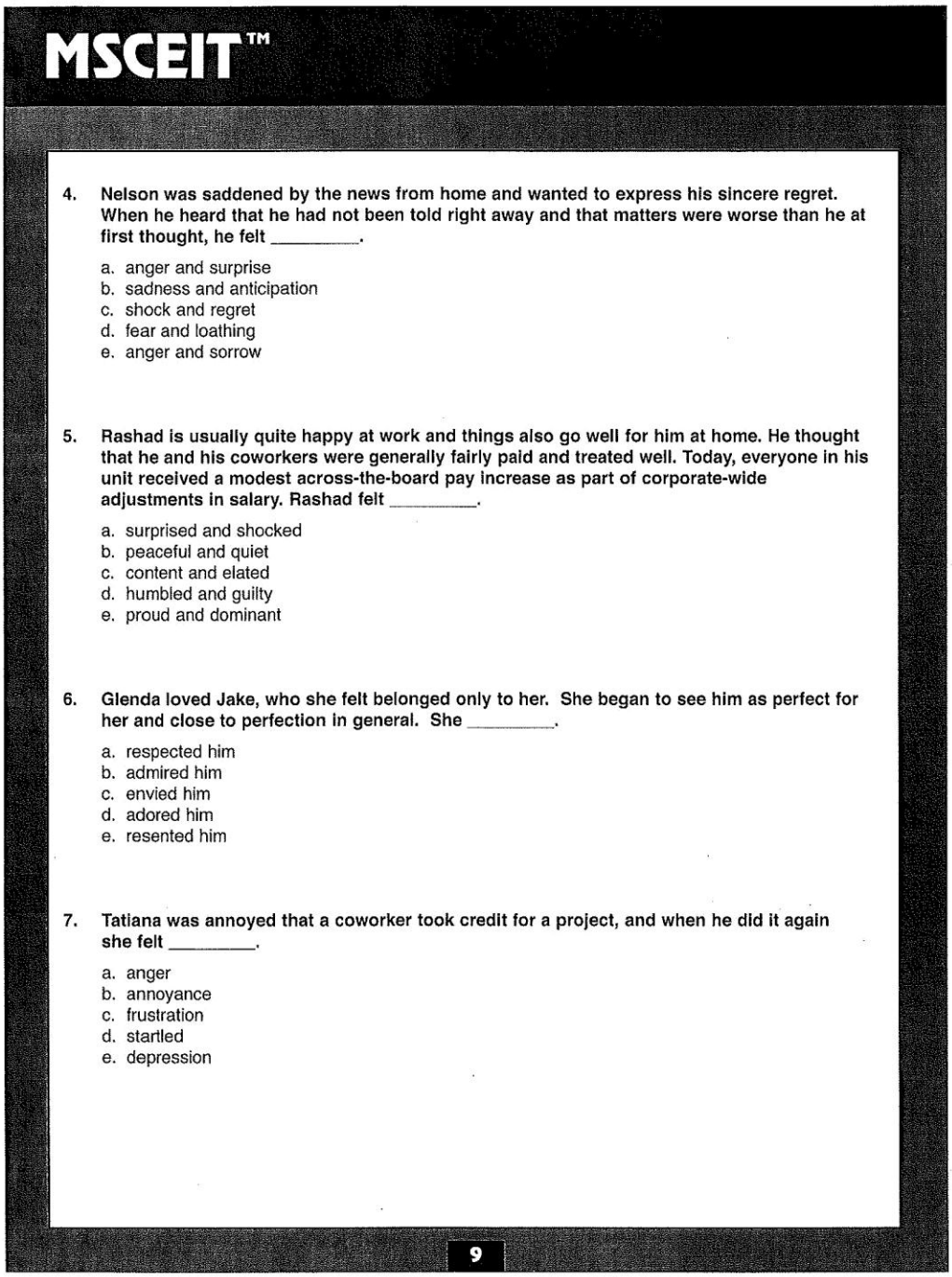
1. **Marjorie felt more and more ashamed, and began to feel worthless. She then felt _____.**
   a. overwhelmed
   b. depressed
   c. ashamed
   d. self-conscious
   e. jittery

2. **Kenji felt content as he thought of his life, and the more he thought about the good things he had done and the joy his acts had brought to others, the more he felt _____.**
   a. surprised
   b. depressed
   c. acceptance
   d. happiness
   e. amazement

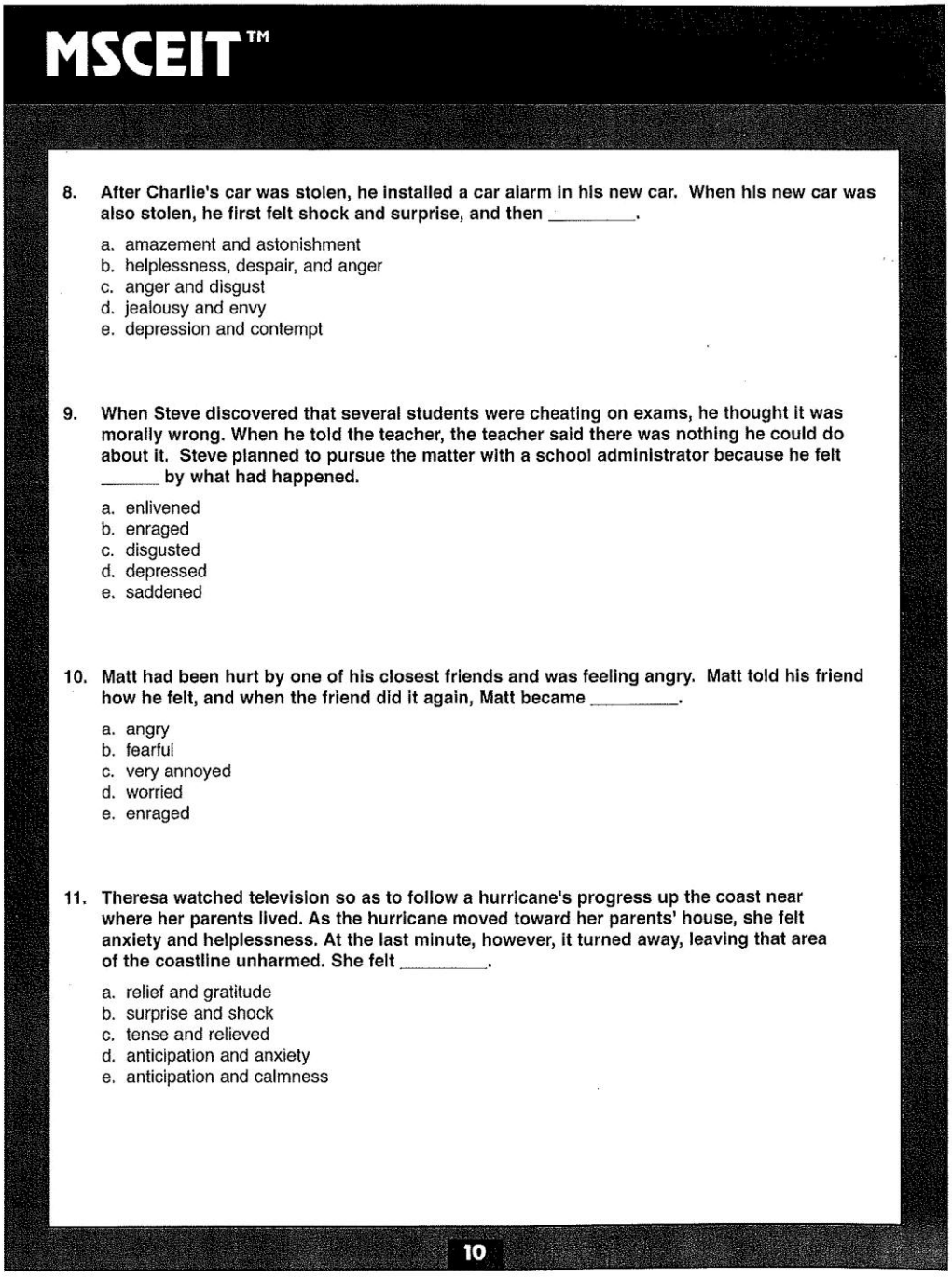
3. **Natalie had never been more surprised in her life. But as she recovered a bit from the shock of the loss and realized she could gain some advantage from the situation if she planned carefully, she became _____.**
   a. amazed
   b. confused
   c. denying of the situation
   d. expectant
   e. pensive

8

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool



Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool



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8. **After Charlie's car was stolen, he installed a car alarm in his new car. When his new car was also stolen, he first felt shock and surprise, and then _____.**

   a. amazement and astonishment
   b. helplessness, despair, and anger
   c. anger and disgust
   d. jealousy and envy
   e. depression and contempt

9. **When Steve discovered that several students were cheating on exams, he thought it was morally wrong. When he told the teacher, the teacher said there was nothing he could do about it. Steve planned to pursue the matter with a school administrator because he felt _____ by what had happened.**

   a. enlivened
   b. enraged
   c. disgusted
   d. depressed
   e. saddened

10. **Matt had been hurt by one of his closest friends and was feeling angry. Matt told his friend how he felt, and when the friend did it again, Matt became _____.**

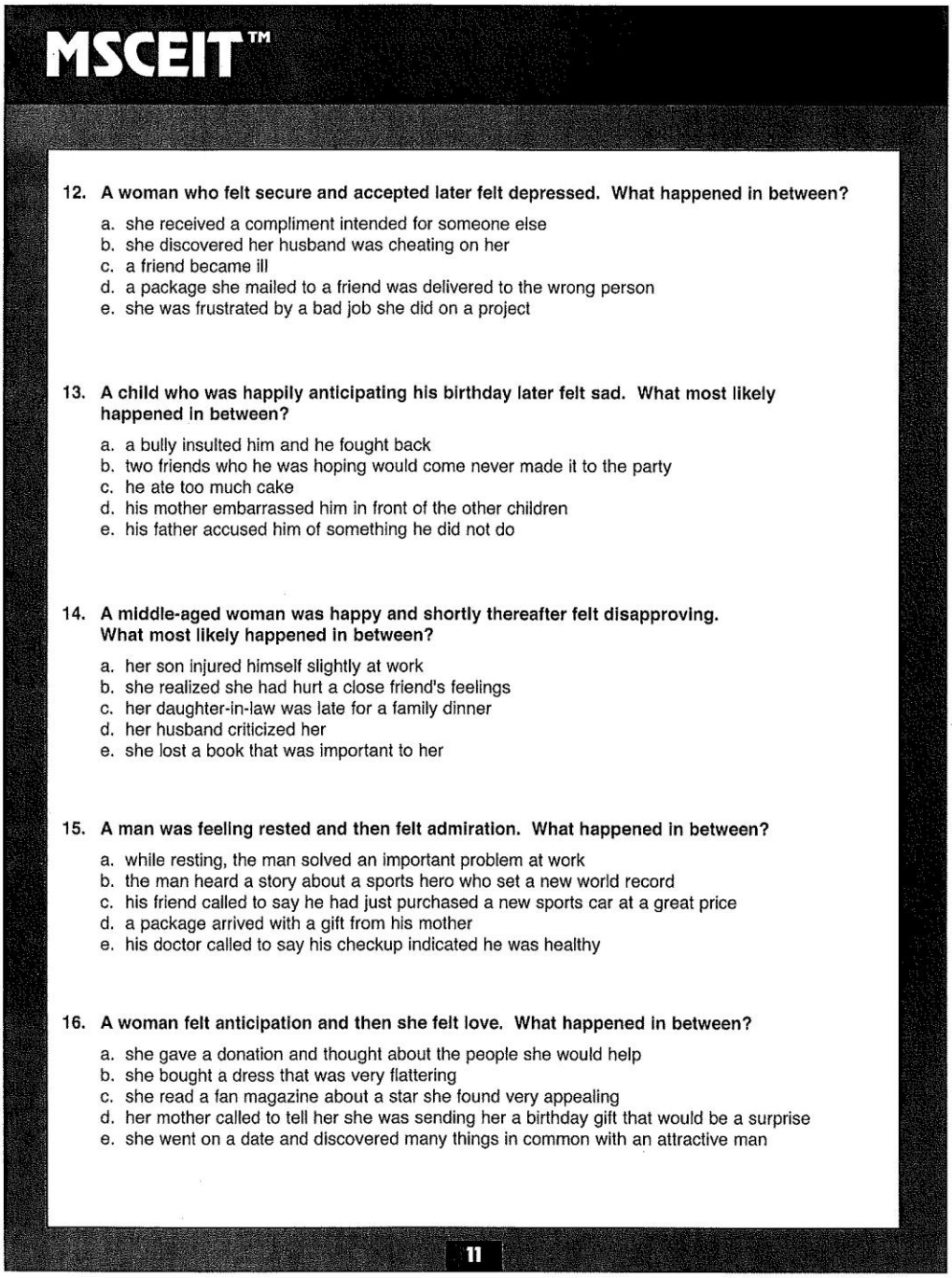
    a. angry
    b. fearful
    c. very annoyed
    d. worried
    e. enraged

11. **Theresa watched television so as to follow a hurricane's progress up the coast near where her parents lived. As the hurricane moved toward her parents' house, she felt anxiety and helplessness. At the last minute, however, it turned away, leaving that area of the coastline unharmed. She felt _____.**

    a. relief and gratitude
    b. surprise and shock
    c. tense and relieved
    d. anticipation and anxiety
    e. anticipation and calmness

10

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool



Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool

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17. **An executive in a corporation felt displeased and then resentful. What happened in between?**

a. a subordinate failed to achieve his sales goals for the period
b. another officer in the company, whom he believed to be incompetent, won a pay increase much larger than his own
c. he read a news item about people in another part of the world living in poverty and how a major charity was facing obstacles in their relief efforts
d. his wife was helping his children with their homework
e. no one seemed to like him

18. **A woman was angry and then felt guilty. What happened in between?**

a. she lost the phone number of a friend who was very close to her
b. she didn't finish a job as well as she had hoped to because she didn't have enough time
c. she expressed anger at her friend, who she then discovered hadn't done anything to hurt her
d. she lost a close friend
e. she was angry that someone gossiped about her, and then discovered that others were saying the same thing

19. **A man liked his friend and then despised him. What happened in between?**

a. his friend lost an expensive book he loaned him
b. his friend betrayed his wife
c. his friend won a raise he didn't deserve
d. his friend said he was moving away
e. the man felt he had hurt his friend and it was partly his friend's fault

20. **A woman loved someone and then felt secure. What happened in between?**

a. she learned the other person loved her in return
b. she decided not to express her feelings
c. her love went away
d. she told the other person that she loved him
e. her love itself brought about security

12

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool

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SECTION D

Instructions: Please select an answer for every action.

1. **Mara woke up feeling pretty well. She had slept well, felt well rested, and had no particular cares or concerns. How well would each action help her preserve her mood?**

   Action 1: She got up and enjoyed the rest of the day.
   a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

   Action 2: Mara enjoyed the feeling and decided to think about and appreciate all the things that were going well for her.
   a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

   Action 3: She decided it was best to ignore the feeling since it wouldn't last anyway.
   a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

   Action 4: She used the positive feeling to call her mother, who had been depressed, and tried to cheer her up.
   a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

2. **Andrew works as hard, if not harder, than one of his colleagues. In fact, his ideas are usually better at getting positive results for the company. His colleague does a mediocre job but engages in office politics so as to get ahead. So, when Andrew's boss announces that the annual merit award is being given to this colleague, Andrew is very angry. How effective would each action be in helping Andrew feel better?**

   Action 1: Andrew sat down and thought about all of the good things in his life and his work.
   a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

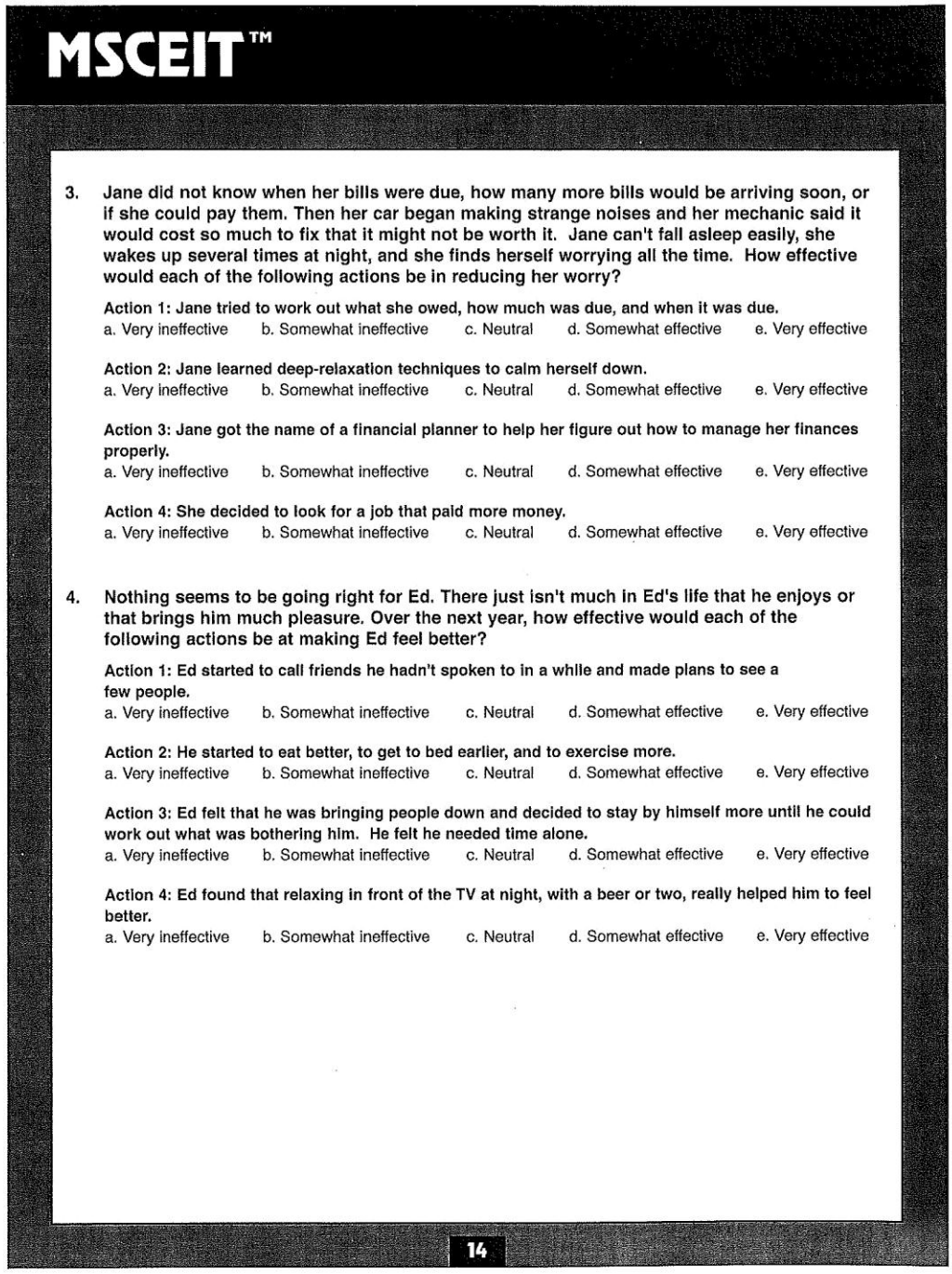
   Action 2: Andrew made a list of the positive and negative traits of his colleague.
   a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

   Action 3: Andrew felt terrible that he felt that way, and he told himself that it wasn't right to be so upset over an event not under his control.
   a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

   Action 4: Andrew decided to tell people what a poor job his colleague had done, and that he did not deserve the merit award. Andrew gathered memos and notes to prove his point, so it wasn't just his word.
   a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

13

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool



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3. **Jane did not know when her bills were due, how many more bills would be arriving soon, or if she could pay them. Then her car began making strange noises and her mechanic said it would cost so much to fix that it might not be worth it. Jane can't fall asleep easily, she wakes up several times at night, and she finds herself worrying all the time. How effective would each of the following actions be in reducing her worry?**

Action 1: Jane tried to work out what she owed, how much was due, and when it was due.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 2: Jane learned deep-relaxation techniques to calm herself down.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 3: Jane got the name of a financial planner to help her figure out how to manage her finances properly.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 4: She decided to look for a job that paid more money.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

4. **Nothing seems to be going right for Ed. There just isn't much in Ed's life that he enjoys or that brings him much pleasure. Over the next year, how effective would each of the following actions be at making Ed feel better?**

Action 1: Ed started to call friends he hadn't spoken to in a while and made plans to see a few people.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

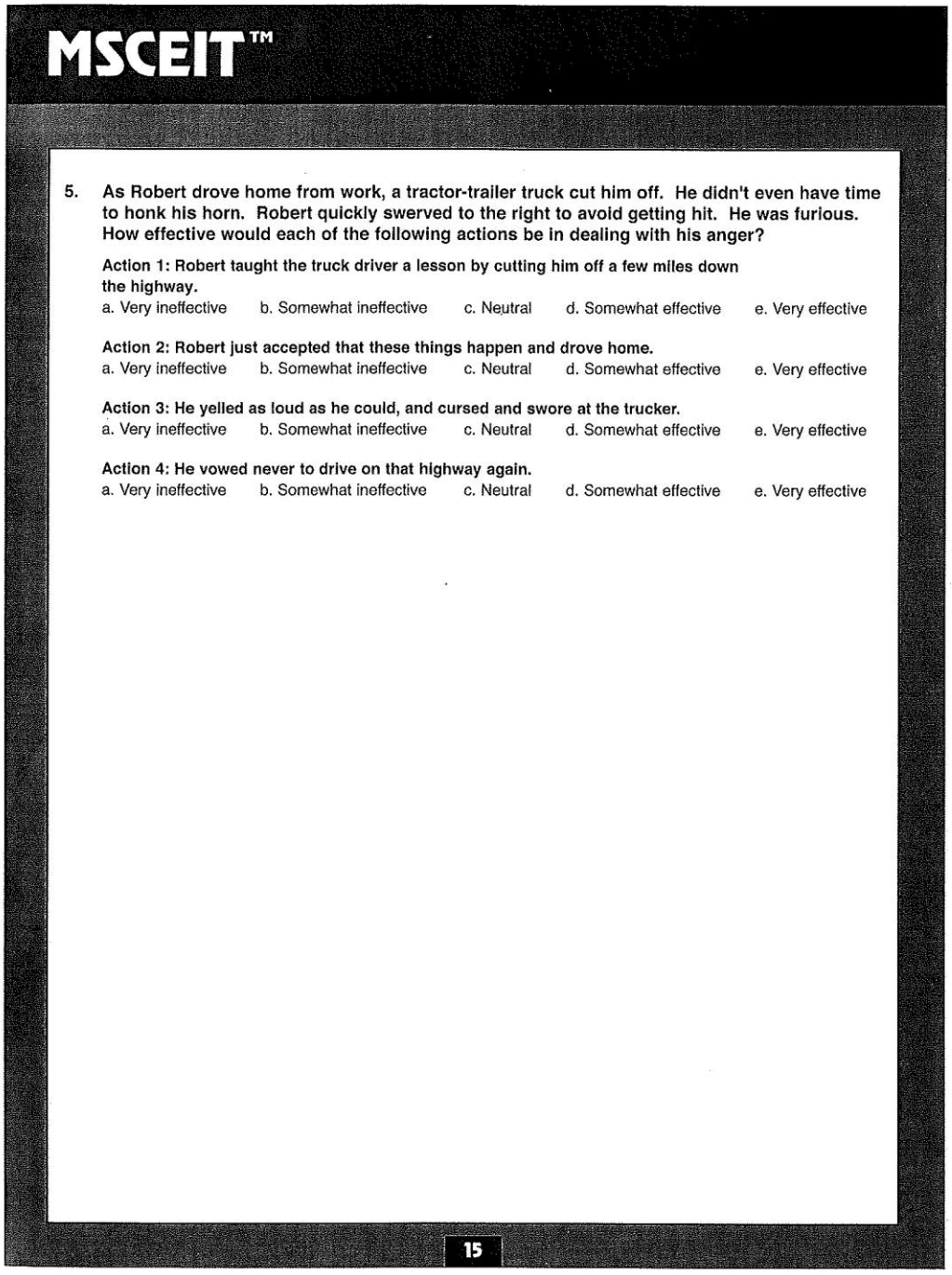
Action 2: He started to eat better, to get to bed earlier, and to exercise more.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 3: Ed felt that he was bringing people down and decided to stay by himself more until he could work out what was bothering him. He felt he needed time alone.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 4: Ed found that relaxing in front of the TV at night, with a beer or two, really helped him to feel better.
a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

14

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool



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5. As Robert drove home from work, a tractor-trailer truck cut him off. He didn't even have time to honk his horn. Robert quickly swerved to the right to avoid getting hit. He was furious. How effective would each of the following actions be in dealing with his anger?

Action 1: Robert taught the truck driver a lesson by cutting him off a few miles down the highway.

a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 2: Robert just accepted that these things happen and drove home.

a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 3: He yelled as loud as he could, and cursed and swore at the trucker.

a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

Action 4: He vowed never to drive on that highway again.

a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

15

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool

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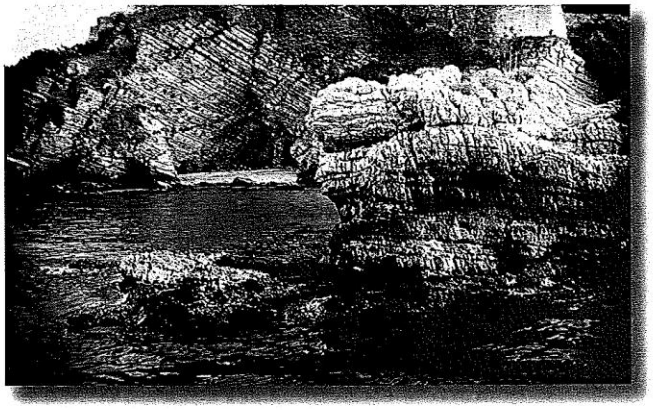
SECTION E

1.



Instructions: How much is each feeling below expressed by this picture?

(Please select a response for each item.)

	1	2	3	4	5
1. Happiness					
2. Sadness					
3. Fear					
4. Anger					
5. Disgust					

16

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool

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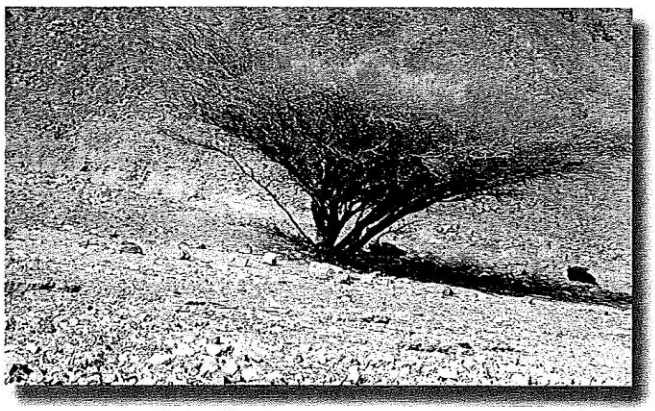
2.



Instructions: How much is each feeling below expressed by this picture?
(Please select a response for each item.)

	1	2	3	4	5
1. Sadness					
2. Anger					
3. Surprise					
4. Disgust					
5. Excitement					

17

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool

MSCEIT™

3.

Instructions: How much is each feeling below expressed by this picture?

(Please select a response for each item.)

	1	2	3	4	5
1. Happiness					
2. Fear					
3. Anger					
4. Surprise					
5. Disgust					

18

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool

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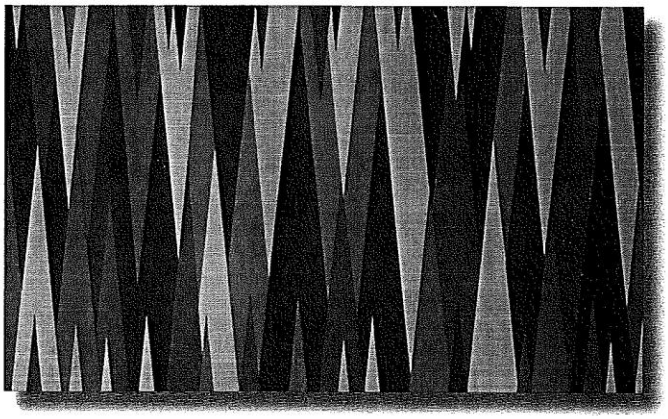
4.



Instructions: How much is each feeling below expressed by this picture?
(Please select a response for each item.)

	1	2	3	4	5
1. Sadness					
2. Fear					
3. Anger					
4. Surprise					
5. Disgust					

19

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool

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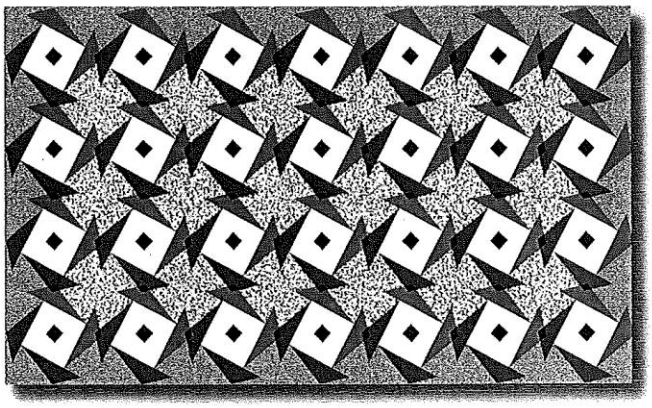
5.



Instructions: How much is each feeling below expressed by this picture?

(Please select a response for each item.)

	1	2	3	4	5
1. Happiness					
2. Sadness					
3. Fear					
4. Anger					
5. Disgust					

20

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool

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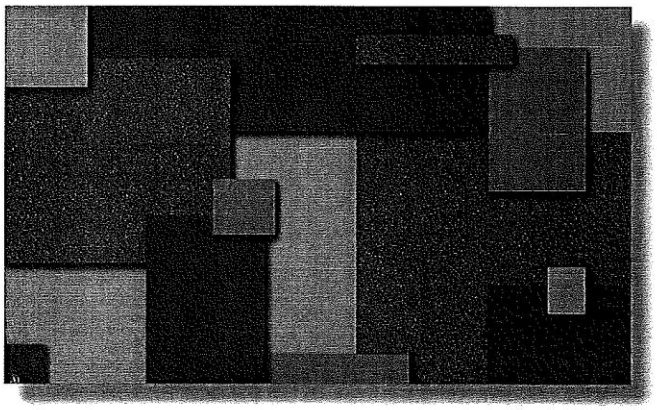
6.



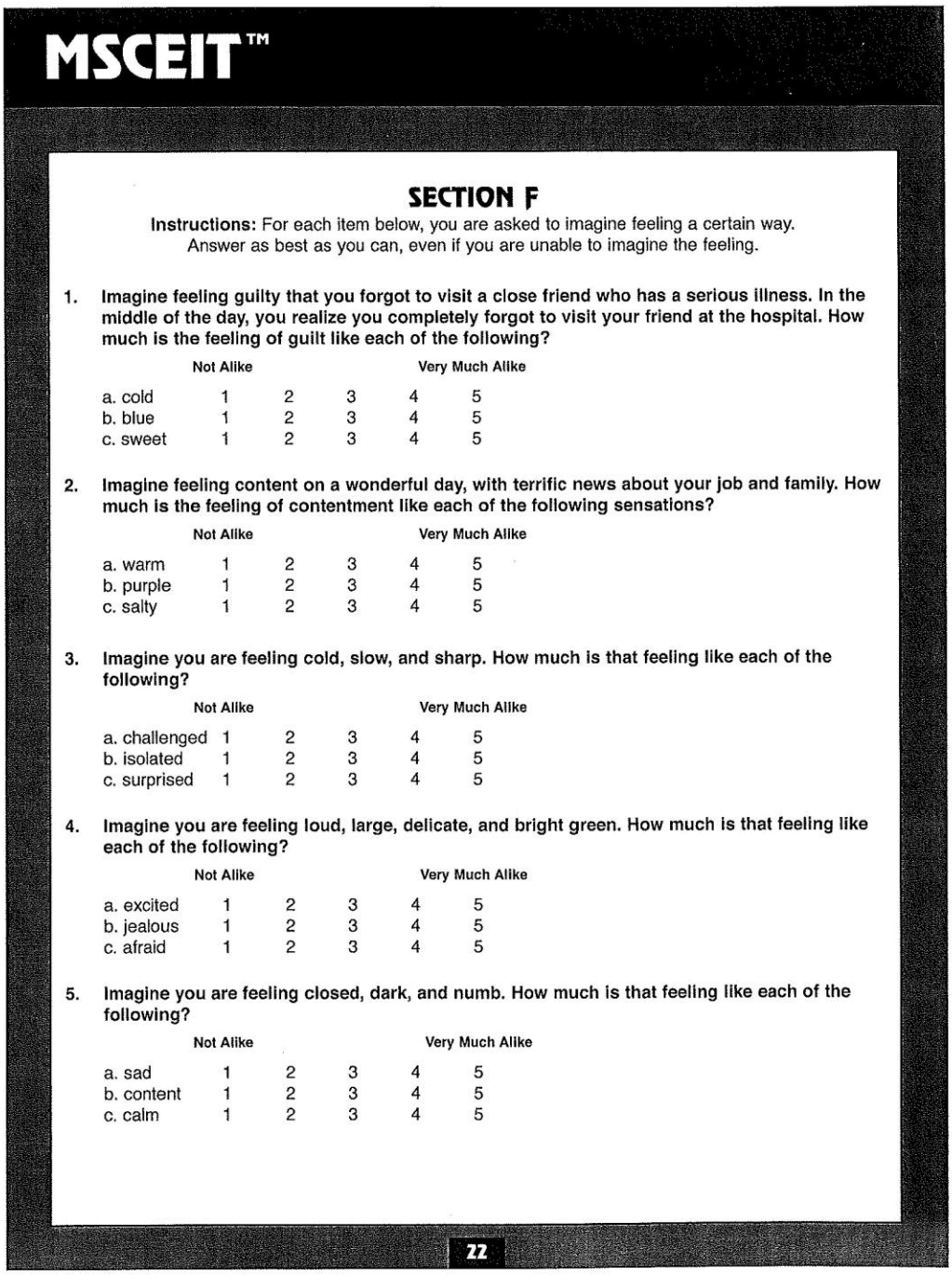
Instructions: How much is each feeling below expressed by this picture?

(Please select a response for each item.)

	1	2	3	4	5
1. Happiness					
2. Sadness					
3. Anger					
4. Surprise					
5. Disgust					

21

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool



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SECTION F

Instructions: For each item below, you are asked to imagine feeling a certain way. Answer as best as you can, even if you are unable to imagine the feeling.

1. **Imagine feeling guilty that you forgot to visit a close friend who has a serious illness. In the middle of the day, you realize you completely forgot to visit your friend at the hospital. How much is the feeling of guilt like each of the following?**

	Not Alike				Very Much Alike
a. cold	1	2	3	4	5
b. blue	1	2	3	4	5
c. sweet	1	2	3	4	5

2. **Imagine feeling content on a wonderful day, with terrific news about your job and family. How much is the feeling of contentment like each of the following sensations?**

	Not Alike				Very Much Alike
a. warm	1	2	3	4	5
b. purple	1	2	3	4	5
c. salty	1	2	3	4	5

3. **Imagine you are feeling cold, slow, and sharp. How much is that feeling like each of the following?**

	Not Alike				Very Much Alike
a. challenged	1	2	3	4	5
b. isolated	1	2	3	4	5
c. surprised	1	2	3	4	5

4. **Imagine you are feeling loud, large, delicate, and bright green. How much is that feeling like each of the following?**

	Not Alike				Very Much Alike
a. excited	1	2	3	4	5
b. jealous	1	2	3	4	5
c. afraid	1	2	3	4	5

5. **Imagine you are feeling closed, dark, and numb. How much is that feeling like each of the following?**

	Not Alike				Very Much Alike
a. sad	1	2	3	4	5
b. content	1	2	3	4	5
c. calm	1	2	3	4	5

22

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool

MSCEIT™

SECTION G

Instructions: Select the best alternative for each of these questions.

1. **A feeling of concern most closely combines the emotions of _____.**
   a. love, anxiety, surprise, anger
   b. surprise, pride, anger, fear
   c. acceptance, anxiety, fear, anticipation
   d. fear, joy, surprise, embarrassment
   e. anxiety, caring, anticipation

2. **Another word for "consistently anticipating pleasure" is _____.**
   a. optimism
   b. happiness
   c. contentment
   d. joy
   e. surprise

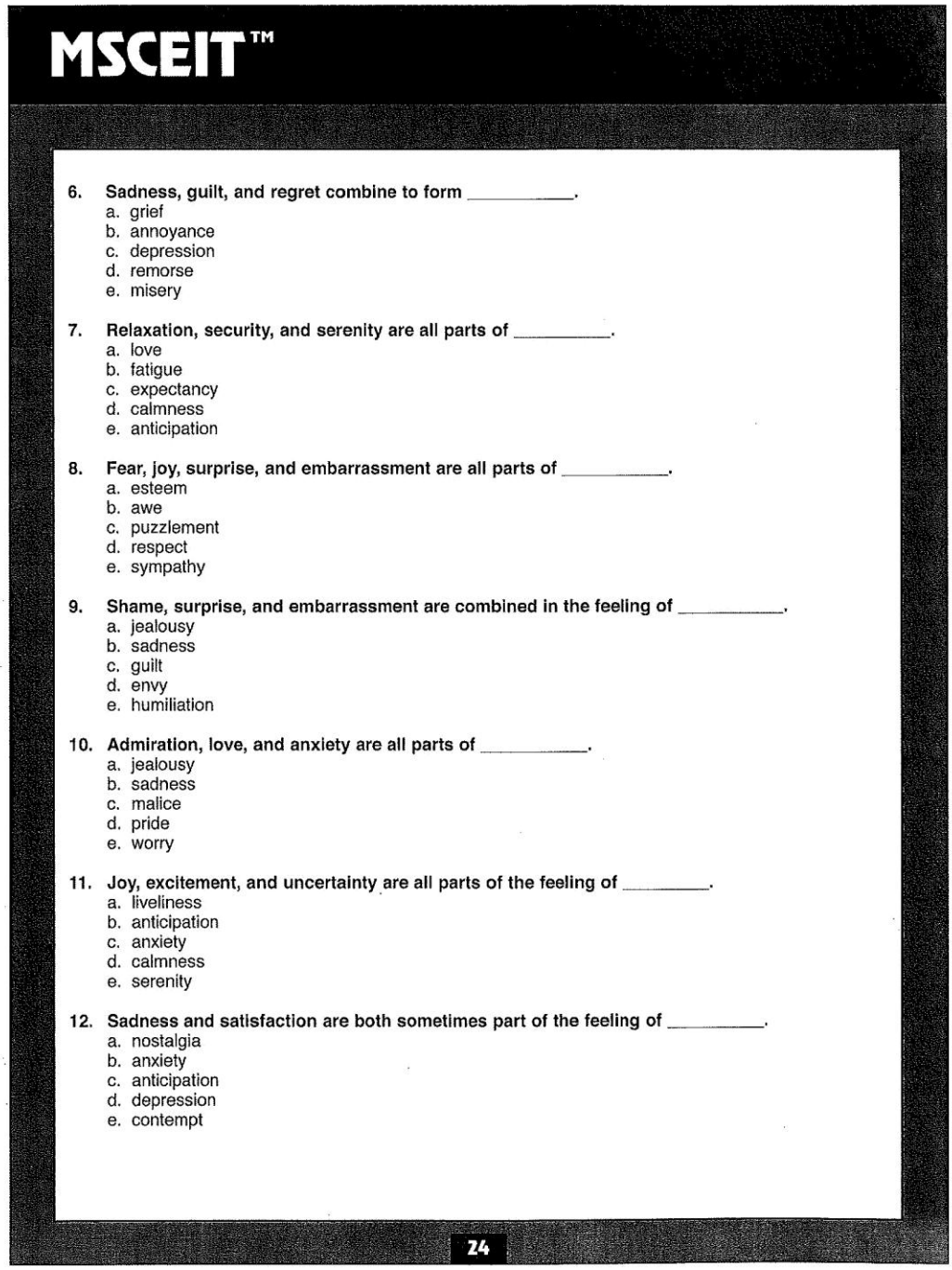
3. **Acceptance, joy, and warmth often combine to form _____.**
   a. love
   b. amazement
   c. anticipation
   d. contentment
   e. acceptance

4. **Combining the feelings of disgust and anger results in _____.**
   a. guilt
   b. rage
   c. shame
   d. hatred
   e. contempt

5. **A sad surprise leads to _____.**
   a. disappointment
   b. amazement
   c. anger
   d. fear
   e. regret

23

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool



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6. Sadness, guilt, and regret combine to form _____.
   a. grief
   b. annoyance
   c. depression
   d. remorse
   e. misery

7. Relaxation, security, and serenity are all parts of _____.
   a. love
   b. fatigue
   c. expectancy
   d. calmness
   e. anticipation

8. Fear, joy, surprise, and embarrassment are all parts of _____.
   a. esteem
   b. awe
   c. puzzlement
   d. respect
   e. sympathy

9. Shame, surprise, and embarrassment are combined in the feeling of _____.
   a. jealousy
   b. sadness
   c. guilt
   d. envy
   e. humiliation

10. Admiration, love, and anxiety are all parts of _____.
    a. jealousy
    b. sadness
    c. malice
    d. pride
    e. worry

11. Joy, excitement, and uncertainty are all parts of the feeling of _____.
    a. liveliness
    b. anticipation
    c. anxiety
    d. calmness
    e. serenity

12. Sadness and satisfaction are both sometimes part of the feeling of _____.
    a. nostalgia
    b. anxiety
    c. anticipation
    d. depression
    e. contempt

24

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool

MSCEIT™

SECTION H

Instructions: Please select an answer for every response.

1. John developed a close friend at work over the last year. Today, that friend completely surprised him by saying he had taken a job at another company and would be moving out of the area. He had not mentioned he was looking for other jobs. How effective would John be in maintaining a good relationship, if he chose to respond in each of the following ways?

   Response 1: John felt good for him and told his friend that he was glad he got the new job. Over the next few weeks, John made arrangements to ensure they stayed in touch.
   a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

   Response 2: John felt sad that his friend was leaving, but he considered what happened as an indication that the friend did not much care for him. After all, the friend said nothing about his job search. Given that his friend was leaving anyway, John did not mention it, but instead went looking for other friends at work.
   a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

   Response 3: John was very angry that his friend hadn't said anything. John showed his disapproval by deciding to ignore his friend until the friend said something about what he had done. John thought that if his friend didn't say anything, it would confirm John's opinion that the friend was not worth talking to.
   a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

2. Roy's teacher has just called Roy's parents to say that Roy is doing poorly in school. The teacher tells Roy's parents that their son isn't paying attention, is being disruptive, and can't sit still. This particular teacher doesn't do well with active boys, and Roy's parents wonder what's really going on. Then the teacher says that their son will be left back unless he improves. The parents feel very angry. How helpful to their son is each of these reactions?

   Response 1: The parents told the teacher that this was a big shock to them since this was the first time they had ever heard there was a problem. They asked to meet with the teacher and also requested if the principal could attend the meeting.
   a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

   Response 2: The parents told the teacher that if she continued to threaten to have their son repeat the grade, they would take it up with the principal. They said, "If our son is left back, we will hold you personally responsible. You are the teacher and your job is to teach, not to blame the student."
   a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

   Response 3: Roy's parents hung up on the teacher and called the principal. They complained about the teacher's threats and asked that their son be moved to a different classroom.
   a. Very ineffective b. Somewhat ineffective c. Neutral d. Somewhat effective e. Very effective

25

Appendix A (Continued): Mayer – Salovey – Caruso Emotional Intelligence Tool

MHS

For more information, contact MHS at...

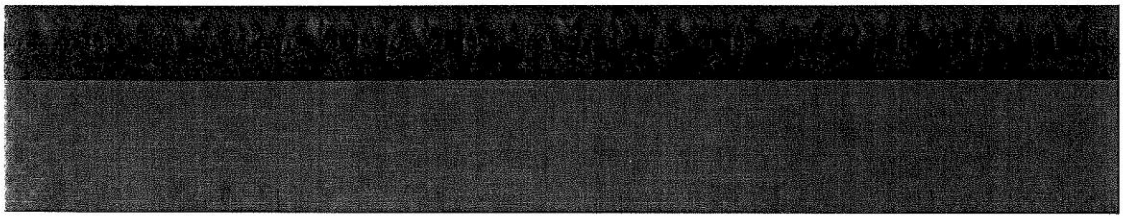
In the U.S.:
P.O. Box 950
North Tonawanda, NY
14120-0950
1-800-456-3003

In Canada:
3770 Victoria Park Ave.
Toronto, ON
M2H 3M6
1-800-268-6011

In the U.K.:
39A Kingfisher Court
Hambridge Road, Newbury
Berkshire, RG14 5SJ
0845 601 7603

International Tel: +1-416-492-2627
Fax: 1-888-540-4484
International Fax: +1-416-492-3343
E-mail: customerservice@mhs.com

www.mhs.com



Appendix B: Developing Organizational Capacity Tool

Developing Organizational Capacity

(Murphy, 2000)

Please identify a 6-digit identification number and document in the spaces below. Use the same identification number on each of the surveys included in this packet.

ID # | | | | | | |

Circle the number that best answers the statement.

#	Description	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
1	When I do an excellent job, my accomplishments are recognized.	5	4	3	2	1
2	I can make decisions that improve the quality of my work.	5	4	3	2	1
3	I feel encouraged to come up with new and better ways of doing things.	5	4	3	2	1
4	The amount of work I am expected to do on my job is about the right amount.	5	4	3	2	1
5	I am given opportunities to improve my skills at this organization.	5	4	3	2	1
6	I feel valued as an employee of this organization.	5	4	3	2	1
7	My supervisor gives me regular constructive feedback to improve my performance.	5	4	3	2	1
8	In my work group, we resolve conflict effectively.	5	4	3	2	1
9	The people I work with cooperate to get the job done.	5	4	3	2	1
10	I receive enough detailed information about my organization.	5	4	3	2	1
11	When changes are announced, my supervisor takes time to explain how the changes will affect me.	5	4	3	2	1
12	My supervisor listens to my ideas and concerns.	5	4	3	2	1
13	The safety and health conditions where I work are good.	5	4	3	2	1
14	I am effectively dealing with the changes and pressures in this organization.	5	4	3	2	1

Appendix B (Continued): Developing Organizational Capacity Tool

15	On my job, I know exactly what is expected of me.	5	4	3	2	1
16	Overall, this is an effective organization	5	4	3	2	1

Appendix C: Practice Environment Scale

Practice Environment Scale

(Lake, 2002)

Please identify a 6-digit identification number and document in the spaces below. Use the same identification number on each of the surveys included in this packet.

ID # | | | | | | |

Circle the number that best answers the statement.

#	Description	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
1	Adequate support services allow me to spend time with my patients	4	3	2	1
2	Physicians and nurses have good working relationships	4	3	2	1
3	A supervisory staff that is supportive of nurses	4	3	2	1
4	Active staff development or continuing education programs for nurses	4	3	2	1
5	Career development/clinical ladder opportunity	4	3	2	1
6	Opportunity for staff nurses to participate n policy decisions	4	3	2	1
7	Enough time and opportunity to discuss patient care problems with other nurses	4	3	2	1
8	Enough registered nurses on staff to provide quality patient care	4	3	2	1
9	A nurse manager who is a good manager and leader	4	3	2	1
10	A chief nursing officer who is highly visible and accessible to staff	4	3	2	1
11	Enough staff to get the work done	4	3	2	1
12	Praise and recognition for a job well done	4	3	2	1
13	High standards of nursing care are expected by the administration	4	3	2	1
14	A chief nursing officer is equal in power and authority to other top level hospital/organization executives	4	3	2	1
15	A lot of team work between nurses and physicians	4	3	2	1
16	Opportunities for advancement	4	3	2	1

Appendix C (Continued): Practice Environment Scale

Circle the number that best answers the statement.

#	Description	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
17	A clear philosophy of nursing that pervades the patient care environment	4	3	2	1
18	Working with nurses who are clinically competent	4	3	2	1
19	A nurse manager who backs up the nursing staff in decision making, even if the conflict is with a physician	4	3	2	1
20	Administration that listens and responds to employee concerns	4	3	2	1
21	An active quality assurance program	4	3	2	1
22	Staff nurses are involved in the internal governance of the hospital/ organization (e.g., practice and policy committees)	4	3	2	1
23	Collaboration between nurses and physicians	4	3	2	1
24	A preceptor program for newly hired RNs	4	3	2	1
25	Nursing care is based on a nursing rather than a medical model	4	3	2	1
26	Staff nurses have the opportunity to serve on hospital/organizations and nursing committees	4	3	2	1
27	Nurse managers consult with staff on daily problems and procedures	4	3	2	1
28	Written, up-to-date care plans for all patients	4	3	2	1
29	Patient care assignments that foster continuity of care (e.g., the same nurse cares for the patient from one day to the next)	4	3	2	1
30	Use of nursing diagnoses	4	3	2	1
31	Supervisors use mistakes as learning opportunities, not criticism	4	3	2	1

Appendix D: Patient Satisfaction with Nursing Care

Patient Satisfaction with Nursing Care
Avatar International, LLC Questions

Patients respond to questions using the following scale:

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Question 1 "I was given explanations of my daily routine by the nursing staff"

Question 2 "The nursing staff regularly asked me about my comfort, pain, and need to use the bathroom"

(Study Sites, personal communication, September, 2010)

Appendix E: Physician Satisfaction with Staff Unit Quality

Physician Satisfaction with Staff Unit Quality
HealthStream Research Questions

Respond to the questions using the following scale:

1 “Very Satisfied”

2 “Satisfied”

3 “Dissatisfied”

4 “Very Dissatisfied”; and

5 “Do Not Know

Question 1 Response to Physicians: “How promptly and accurately nurses respond to physician’s orders.”

Question 2 Technical Competency: “Extent to which staff is appropriately trained and competent”

Question 3 Communication with Physician: “How well staff communicates with physicians.”

Question 4 Staff Supply: “Extent to which units are adequately staffed.”

Study Sites (personal communication, 2010)

Appendix F: Nurse Manager Demographics

Nurse Manager Demographics

Please identify a 6-digit identification number and document in the spaces below. Use the same identification number with the on-line survey you will complete.

ID # | | | | | | |

1. Which nursing unit are you currently managing?

Hospital A			
Unit 1	O	Unit 5	O
Unit 2	O	Unit 6	O
Unit 3	O	Unit 7	O
Unit 4	O	Unit 8	O
Other (Identify) _____			

Hospital B			
Unit 1	O	Unit 8	O
Unit 2	O	Unit 9	O
Unit 3	O	Unit 10	O
Unit 4	O	Unit 11	O
Unit 5	O	Unit 12	O
Unit 6	O	Unit 13	O
Unit 7	O	Unit 14	O
Other (Identify) _____			

Hospital C			
Unit1	O	Unit 3	O
Unit 2	O	Unit 4	O
Other (Identify) _____			

Hospital D			
Unit 1	O	Unit 6	O
Unit 2	O	Unit 7	O
Unit 3	O	Unit 8	O
Unit 4	O	Unit 9	O
Unit 5	O		
Other (Identify) _____			

Hospital E			
Unit 1	O	Unit 3	O
Unit 2	O		
Other (Identify) _____			

Unit F			
Unit 1	O	Unit 11	O
Unit 2	O	Unit 12	O
Unit 3	O	Unit 13	O

Appendix F (Continued): Nurse Manager Demographics

Unit 4	O	Unit 14	O
Unit 5	O	Unit 15	O
Unit 6	O	Unit 16	O
Unit 7	O	Unit 17	O
Unit 8	O	Unit 18	O
Unit 9	O	Unit 19	O
Unit 10	O	Unit 20	O

Other (Identify) _____

Hospital G

Unit 1	O	Unit 5	O
Unit 2	O	Unit 6	O
Unit 3	O	Unit 7	O
Unit 4	O		

Other (Identify) _____

Hospital H

Unit 1	O	Unit 4	O
Unit 2	O	Unit 5	O
Unit 3	O		

Other (Identify) _____

	Years	Months
2. Length of time managing this nursing unit:	_____	_____
3. How long have you worked at this hospital	_____	_____
4. How long have you been a registered nurse?	_____	_____

5. Age: _____

6. Sex: Male: O Female: O

7. Marital Status (Choose one): O Married O Single O Divorced O Widowed O Other

8. What is your ethnic or racial background? (Choose only one)

White, non-Hispanic	O	Native American, Eskimo or Aleutian	O
White, Hispanic	O	Hawaiian	O

Question # 8 - Continued on next page

8. What is your ethnic or racial background? (Choose only one)

Black, non-Hispanic	O	Korean	O
Black, Hispanic	O	Filipino	O

Appendix F (Continued): Nurse Manager Demographics

Chinese	○	Vietnamese	○
Japanese	○	Other (Identify) _____	

9. From what type of nursing program did you receive your initial nursing education that led to RN licensure? (Choose One)

Diploma	○	Associates	○
Bachelor's	○	Other (Identify) _____	

10. What is your highest level of nursing education?

○ Diploma ○ Associates ○ Bachelor's ○ Masters ○ Doctorate _____ Other (Identify)

11. What is your highest level of education other than nursing? Identify the type of degree.

Bachelor's (Identify) _____
Masters (Identify) _____
Doctorate (Identify) _____
Other (Identify) _____

12. Identify your Nursing Certification(s) (Identify all that apply)

None	○
AACN Critical Care Registered Nurse (CCRN)	○
ANCC Nurse Executive (NE-BC)	○
ANCC Nurse Executive, Advanced (NEA-BC)	○
AACN Progressive Care Nurse (PCCN)	○
ANNA Certified Nephrology Nurse (CNN)	○
ANCC Gerontological Nursing (RN-BC)	○
ANCC Medical/Surgical Nurse (RN-BC)	○
ANCC Pediatric Nurse (RN-BC)	○
AUAA Certified Urology RN (CURN)	○

Question # 12 - Continued on next page

12. Identify your Nursing Certification(s) (Identify all that apply)

Cardiac Medical Certification (CMC)	○
Cardiac Surgical Certification (CSC)	○
Certified Gastroenterology Registered Nurse (CGRN)	○

Appendix F (Continued): Nurse Manager Demographics

Certified Lactation Counselor (CLC)	O
Certified RN in IV Therapy (CRNI)	O
Certified Wound, Ostomy & Continence Nurse (CWOCN)	O
NCC Inpatient OB Nursing (RNC-INPT)	O
International Board Certified Lactation Consultant (IBCLC)	O
NCC Low Risk Neonatal Nursing (RNC-LRN)	O
NCC Maternal Newborn Nursing (RNC-MN)	O
NCC Neonatal Intensive Care Nursing (RNC-NIC)	O
Oncology Certified Nurse (ONC)	O
Orthopedic Certified Nursing (OCN)	O
Medical/Surgical Nursing (CMSRN)	O
Certified Neuro Science Registered Nurse (CNRN)	O
Certified Pediatric Nurse (CPN)	O
Other (Identify) _____	O
Other (Identify) _____	O

13. Are you a member of a professional nursing organization?

Yes O (Identify) _____ No O

Appendix G: Registered Nurse Demographics

Registered Nurse Demographics

Please identify a 6-digit identification number and document in the spaces below. Use the same identification number on each of the surveys included in this packet.

ID # | | | | | | |

1. What type of nursing unit do you currently work in?

Hospital A

Unit 1	O	Unit 5	O
Unit 2	O	Unit 6	O
Unit 3	O	Unit 7	O
Unit 4	O	Unit 8	O

Other (Identify) _____

Hospital B

Unit 1	O	Unit 8	O
Unit 2	O	Unit 9	O
Unit 3	O	Unit 10	O
Unit 4	O	Unit 11	O
Unit 5	O	Unit 12	O
Unit 6	O	Unit 13	O
Unit 7	O	Unit 14	O

Other (Identify) _____

Hospital C

Unit 1	O	Unit 3	O
Unit 2	O	Unit 4	O

Other (Identify) _____

Hospital D

Unit 1	O	Unit 6	O
Unit 2	O	Unit 7	O
Unit 3	O	Unit 8	O
Unit 4	O	Unit 9	O
Unit 5	O		

Other (Identify) _____

Hospital E

Unit 1	O	Unit 3	O
Unit 2	O		

Other (Identify) _____

Appendix G (Continued): Registered Nurse Demographics

Hospital F			
Unit 1	O	Unit 11	O
Unit 2	O	Unit 12	O
Unit 3	O	Unit 13	O
Unit 4	O	Unit 14	O
Unit 5	O	Unit 15	O
Unit 6	O	Unit 16	O
Unit 7	O	Unit 17	O
Unit 8	O	Unit 18	O
Unit 9	O	Unit 19	O
Unit 10	O	Unit 20	O

Other (Identify) _____

Unit G			
Unit 1	O	Unit 5	O
Unit 2	O	Unit 6	O
Unit 3	O	Unit 7	O
Unit 4	O		

Other (Identify) _____

Unit H			
Unit 1	O	Unit 4	O
Unit 2	O	Unit 5	O
Unit 3	O		

Other (Identify) _____

2. Which shift do you usually work?

O 7am-3pm O 3pm-11pm O 11pm-7am

O 7am-7pm O 11pm-7am Other _____

	Years	Months
3. How long have you worked on this nursing unit:	_____	_____
4. How long have you worked at this hospital?	_____	_____
5. How long have you been a registered nurse?	_____	_____

6. Work Status: O Full-time O Part-Time Other _____

7. Age: _____

8. Sex: Male: O Female: O

9. Marital Status (Choose one): O Married O Single O Divorced O Widowed O Other

Appendix G (Continued): Registered Nurse Demographics

10. What is your ethnic or racial background? (Choose only one)

White, non-Hispanic	O	Native American, Eskimo or Aleutian	O
White, Hispanic	O	Hawaiian	O
Black, non-Hispanic	O	Korean	O
Black, Hispanic	O	Filipino	O
Chinese	O	Vietnamese	O
Japanese	O	Other (Identify) _____	

11. From what type of nursing program did you receive your initial nursing education that led to RN licensure? (Choose One)

Diploma	O	Associates	O
Bachelor's	O	Other (Identify) _____	

12. What is your highest level of nursing education?

O Diploma O Associates O Bachelor's O Masters O Doctorate _____ Other (Identify)

13. What is your highest level of education other than nursing? Identify the type of degree.

Bachelor's (Identify) _____
Masters (Identify) _____
Doctorate (Identify) _____
Other (Identify) _____

14. Identify your Nursing Certification(s) (Identify all that apply)

None	O
AACN Critical Care Registered Nurse (CCRN)	O
ANCC Nurse Executive (NE-BC)	O
ANCC Nurse Executive, Advanced (NEA-BC)	O
AACN Progressive Care Nurse (PCCN)	O
ANNA Certified Nephrology Nurse (CNN)	O
ANCC Gerontological Nursing (RN-BC)	O
ANCC Medical/Surgical Nurse (RN-BC)	O

Question # 14 - Continued on next page

Appendix G (Continued): Registered Nurse Demographics

14. Identify your Nursing Certification(s) **(Identify all that apply)**

ANCC Pediatric Nurse (RN-BC) O
AUAA Certified Urology RN (CURN) O
Cardiac Medical Certification (CMC) O
Cardiac Surgical Certification (CSC) O
Certified Gastroenterology Registered Nurse (CGRN) O
Certified Lactation Counselor (CLC) O
Certified RN in IV Therapy (CRNI) O
Certified Wound, Ostomy & Continence Nurse (CWOCN) O
NCC Inpatient OB Nursing (RNC-INPT) O
International Board Certified Lactation Consultant (IBCLC) O
NCC Low Risk Neonatal Nursing (RNC-LRN) O
NCC Maternal Newborn Nursing (RNC-MN) O
NCC Neonatal Intensive Care Nursing (RNC-NIC) O
Oncology Certified Nurse (ONC) O
Orthopedic Certified Nursing (OCN) O
Medical/Surgical Nursing (CMSRN) O
Certified Neuro Science Registered Nurse (CNRN) O
Certified Pediatric Nurse (CPN) O
Other (Identify) _____ O
Other (Identify) _____ O

15. Are you a member of a professional nursing organization?

Yes O (Identify) _____ No O

Appendix: H: IRB Approval - Initial

USF
UNIVERSITY OF
SOUTH FLORIDA

July 7, 2008

Jacqueline C. Munro, MS, ARNP
1542 Santa Monica Drive
Dunedin, FL 34698

RE: **Expedited Approval** for Initial Review
IRB#: 107053 I
Title: *Nurse Manager (NM) Emotional Intelligence (EI) as a Predicatior to Registered Nurse (RN) Job Satisfaction and Practice Environment Stisfaction (PES) and the Relationship to Patient, Nursing and Hospital Outcomes*

Study Approval Period: July 7, 2008 to July 6, 2009

Dear Ms. Munro:

On July 7, 2008, Institutional Review Board (IRB) reviewed and **APPROVED** the above protocol **for the period indicated above.** It was the determination of the IRB that your study qualified for expedited review based on the federal expedited category number 7. Also approved are the 2 Adult Minimal Risk Informed Consent Forms.

Please note, if applicable, the **enclosed informed consent/assent documents are valid during the period indicated by the official, IRB-Approval stamp located on page one of the form.** Valid consent must be documented on a copy of the most recently IRB-approved consent form. Make copies from the enclosed original.

Please reference the above IRB protocol number in all correspondence regarding this protocol with the IRB or the Division of Research Integrity and Compliance. In addition, we have enclosed an Institutional Review Board (IRB) Quick Reference Guide providing guidelines and resources to assist you in meeting your responsibilities in the conduction of human participant research. Please read this guide carefully. It is your responsibility to conduct this study in accordance with IRB policies and procedures and as approved by the IRB.

OFFICE OF RESEARCH • DIVISION OF RESEARCH INTEGRITY & COMPLIANCE
INSTITUTIONAL REVIEW BOARDS, FWA NO. 00001669
University of South Florida • 12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799
(813) 974-5638 • Fax (813) 974-5618

Appendix: H (Continued): IRB Approval - Initial

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to the Human Research Protections Program. If you have any questions regarding this matter, please call 813-974-9343.

Sincerely,

Paul G. Stiles, J.D., Ph.D., Chairperson
USF Institutional Review Board

Enclosures: (If applicable) IRB-Approved, Stamped Informed Consent/Assent Documents(s)
IRB Quick Reference Guide

Cc: Various B. Menzel, CCRP, USF IRB Professional Staff
Cecile A. Lengacher, RN, PhD

SB-IRB-Approved-EXPEDITED-0601