THE RELATIONSHIP BETWEEN TRANSFORMATIONAL LEADERSHIP AND ORGANIZATIONAL LEARNING CULTURE IN MAGNET AND NON-MAGNET HOSPITALS

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Abstract

The purpose of this study was to determine the relationship between transformational leadership and organizational learning culture in perioperative nursing units, and further, whether there was a difference in these relationships between hospitals with and without ANCC Magnet Recognition®. The study also explored whether there were significant differences between perioperative staff nurse perceptions of leadership and learning culture in Magnet and non-Magnet hospitals. Using a quantitative, correlational design, this study measured the responses of 1,121, board certified perioperative nurses to a survey comprised of items from the Multifactor Leadership Questionnaire (MLQ5X) (Avolio & Bass, 1995), the Dimensions of Learning Organization Questionnaire (DLOQ-A) (Watkins 1993; 1996), and select demographic questions including whether or not their hospital had earned the Magnet designation. Regression analysis and ANOVA findings indicated a strong, positive correlation between transformational leadership and organizational learning culture. This relationship persisted after adjusting for demographics and hospital characteristics. However, Magnet status did not have a moderating effect on this relationship. While Magnet hospitals had significantly higher total scores for both transformational leadership and learning culture than non-Magnet hospitals, the relationship between transformational leadership and learning culture was similar in both groups. These findings reinforce the beneficial effects of the ANCC Magnet Recognition Program® on nursing work environments, which have been shown to positively influence nursing recruitment, retention and patient outcomes.
# Table of Contents

List of Tables ................................................................................................................................. 7
List of Figures ................................................................................................................................. 8

Chapter 1: Introduction .................................................................................................................... 9
  Statement of the Problem ............................................................................................................... 9
  Significance of the Problem ......................................................................................................... 12
  Positionality Statement .............................................................................................................. 14
  Research Questions and Hypotheses ........................................................................................ 17
  Research Questions .................................................................................................................... 18
  Hypotheses .................................................................................................................................... 19
  Theoretical Framework ................................................................................................................ 19

Chapter 2: Review of Literature .................................................................................................... 25
  Leadership Theories ..................................................................................................................... 25
  Nursing Leadership ...................................................................................................................... 33
  Transformational Leadership in Nursing ..................................................................................... 35
  American Nurses’ Credentialing Center (ANCC) Magnet Recognition Program® .................. 36
  Organizational Learning ............................................................................................................. 39
  Subculture of Perioperative Nursing .......................................................................................... 50

Chapter 3 ......................................................................................................................................... 54
  Research Questions .................................................................................................................... 54
  Hypotheses .................................................................................................................................... 54
  Research Design .......................................................................................................................... 55
  Protection of Human Subjects ..................................................................................................... 68

Chapter 4 ......................................................................................................................................... 70
  Descriptive Statistics ................................................................................................................... 70
  Descriptive analyses of major instruments ................................................................................. 74
  Internal reliability of instruments ............................................................................................... 76
  Inferential Statistics ...................................................................................................................... 80
  Hypothesis 2 .................................................................................................................................. 81
  Hypothesis 3 .................................................................................................................................. 82
List of Tables

Table 1: Distribution of Missing Responses .................................................. 69
Table 2: Facility Characteristics ................................................................. 70
Table 3: Individual Respondent Demographic Variables .............................. 71
Table 4: Scale and Subscale Mean and Standard Deviation ............................ 72
Table 5: MLQ5X Subscale Correlations ....................................................... 73
Table 6: Scatter Plot of DLOQ-A and MLQ5X .............................................. 74
Table 7: Cronbach’s Alpha Scores for Scales and Subscales ............................ 75
Table 8: Correlations of Subscales Showing Collinearity ............................... 76
Table 9: Factor Loading MLQ5X ................................................................. 77
Table 10: Correlation of Transformational Leadership and Organizational Learning in Magnet Hospitals ........................................................ 79
Table 11: Correlation of Transformational Leadership and Organizational Learning in non-Magnet Hospitals ..................................................... 80
Table 12: Interaction between Magnet and Transformational Leadership ........... 81
Table 13: Size of Magnet Hospitals ............................................................... 82
Table 14: Category of Magnet Hospitals ....................................................... 83
Table 15: Comparison of MLQ5X Scores by Magnet Status ............................ 84
Table 16: Comparison of DOLQ-A Scores by Magnet Status ........................... 84
List of Figures

Figure 1: Sampling Frame ................................................................. 57
Figure 2: ANCC Magnet Recognition Model® ................................. 90
Chapter 1: Introduction

Statement of the Problem

In order to survive in an organizational environment characterized by an unprecedented rate and scope of change, many leaders are looking to build the learning capacity of their employees and their organizations. This has driven a considerable and growing interest in both individual and organizational learning. Defined as the ability for organizations to recognize, adapt, acknowledge and incorporate changing knowledge at a systemic level, organizational learning has been touted as a key competitive advantage in today’s new knowledge economy (Drucker, 1998). This is particularly true in healthcare, where knowledge changes constantly and hospitals must learn and apply new practices in order to provide safe and high-quality care (Tucker, Nembhard, & Edmondson, 2007).

Culture of learning. Many authors claim that organizational learning is developed through technology, training or individual learning. Others express the view that fostering organizational learning requires the existence of an organizational learning culture (Popper & Lipshitz, 1998). Articulating the importance of culture in fostering organizational learning, Schein (2002) stated, “We know how to improve the learning of an individual or small team, but we don’t know how to systematically intervene in culture to create transformational learning across the organization” (p. 105).

Building on Schein’s (2002) position, leading scholars (Watkins & Marsick, 2003) contend that efforts to implement organizational learning initiatives fail to acknowledge the importance of creating a culture of learning. Cook and Yanow (1993) further argue that taking an organizational cultural approach to learning, as opposed to an individual, cognitive approach,
is necessary to create an organizational learning culture in which organizational learning can thrive and have the desired effect on organizational performance.

**Leadership and learning culture.** Leadership is also widely cited as important in creating organizational learning (Lei, Slocum & Pitts, 2000; Senge, 1990; Swieringa & Wierdsma, 1992). Since the publication of the groundbreaking work *The Fifth Discipline: The Art and Practice of Learning Organizations* (Senge, 1990), leaders have rallied around the idea that creating opportunities for individual learning, and converting that knowledge to organizational learning, is critical to thriving in the new knowledge based economy. While the effect of leadership on organizational culture in general is well documented (Schein, 2010), the organizational learning culture literature lacks consistent, empirical support in describing how leaders foster or hinder this organizational condition (Amy, 2008).

There is a similar lack of evidence describing organizational learning in the profession of nursing. This despite a growing interest among hospitals in acquiring the American Nurses Credentialing Center (ANCC) Magnet designation, a recognition program that includes transformational leadership and learning among its key criteria (ANCC, 2014). The changing and complex environment of healthcare, as well as the widely practiced style of transformational leadership in nursing, demands a better understanding of the relationship between transformational leadership and organizational learning in perioperative nursing.

**ANCC Magnet Recognition Program®.** Magnet recognition differentiates hospitals on the basis of their ability to create a positive nursing work environment and patient outcomes. The journey to achieving Magnet recognition often involves hiring, training and developing staff on the key criteria of the program, and building competency in areas where gaps are identified. The Magnet designation is intended to recognize those facilities where that effort has succeeded
and transformational leadership and a culture of learning exists as a result. The application process involves documentation of achievement of key objectives as well as the validation of this evidence through an in-person site visit. It is a rigorous, resource-intensive process.

Given the claims and criteria associated with the Magnet designation, it is reasonable to expect that transformational leadership and organizational learning are apparent to a greater degree in Magnet hospitals than in non-Magnet hospitals. However, there is limited evidence supporting this assumption. In fact, one study comparing the transformational leadership behaviors of chief nursing officers (CNOs) in Magnet and non-Magnet facilities showed no difference between Magnet CNOs and non-Magnet CNOs (Porter-O’Grady, 2009). Similarly, there is no research substantiating the presence of learning culture characteristics in Magnet facilities. As hospitals consider whether or not to invest the necessary resources to pursue Magnet designation, findings from this study may be useful to hospitals seeking to demonstrate and define the value of this investment on the leadership and learning culture of their organizations.

**Relationship between leading and learning.** While nurse leaders in Magnet hospitals demonstrate transformational leadership behaviors, (Schwartz, Spencer, Wilson, & Wood, 2011) and the nursing workforce in Magnet hospitals is said to systematically engage in professional development and teaching that result in organizational learning and innovation, there is little research that describes a relationship between these variables. While it is reasonable to suggest a relationship exists, the lack of research on the influence of Magnet designation on this relationship warrants further exploration. The purpose of this research is to therefore investigate the relationship between transformational leadership and organizational learning culture, and
moreover, to determine if a hospital’s status as a Magnet designated facility moderates the relationship.

This research will explore two components of the Magnet model – transformational leadership and organizational learning – in the subculture of perioperative (surgical) nursing. Specifically, this research will attempt to specify those transformational leadership behaviors that are associated with positive measures of learning cultures in a perioperative nursing unit and whether there is a difference in these relationships among Magnet and non-Magnet contexts. Additionally, this research will determine whether there are significant differences between perioperative staff nurse perceptions of leadership and learning culture at Magnet and non-Magnet hospitals.

**Significance of the Problem**

Organizational learning leads to improved organizational performance, efficiency and innovation (Salk & Schneider, 2009). It has been demonstrated that organizations that learn better than their competitors are more successful (Abbasi & Zamani-Miandashti, 2013) and have a distinct advantage over organizations that are less competent at learning (Appelbaum & Gallagher, 2000). In fact, organizational learning has been described as an organization’s “only sustainable competitive advantage,” (DeGues, 1988).

Organizational learning is more than the sum of knowledge collected by individual learners within an organization (Popper & Lipshitz, 2000). It is a process characterized by the continual creation and transfer of knowledge among and between employees, and the integration of that learning into organizational systems in order to achieve strategic goals (Marquardt, 1996). Popper and Lipshitz (2000) contend that organizational learning is more feasible in environments characterized by high degrees of uncertainty, high consequences of error, a high level of
professionalism and a high commitment to learning (Popper & Lipshitz, 2000). Regardless of a hospital’s Magnet status, today’s healthcare environment, and in particular the profession of nursing includes all of these organizational characteristics.

Research has consistently demonstrated a relationship between a hospital’s Magnet status and nursing workforce outcomes, including nursing recruitment, retention and job satisfaction (Brady-Schwartz, 2005). Additionally, empirical research supports the existence of transformational leadership in Magnet facilities (Schwartz, et al., 2011); however, the available literature is largely based on leader self-reported data. In fact, a study comparing nurse manager and staff nurse assessments of leadership style showed that managers rated themselves as more transformational than their staff perceived them to be (McGuire & Kennerly, 2006). A similar weakness exists in the Magnet application, which requires demonstration of transformational leadership, but is also largely based on self-reported data from leaders. The perceptions of staff nurses, who are not only the largest segment of the nursing workforce but also the employees leaders are intending to influence, is a critical missing component of our understanding of leadership in nursing.

With regard to staff nurses perceptions of their hospitals as organizational learning cultures, there is a similar lack of evidence of whether staff nurses’ perceptions of their organizations as learning cultures differ from staff nurses’ perception in non-Magnet hospitals. Further, there is little understanding of which particular transformational leadership behaviors predict organizational learning in these settings.

More specifically, these questions have not been studied in the setting of perioperative nursing, which is a distinct subculture within the nursing profession. Nursing workgroups in perioperative units have consistently demonstrated cultural differences from other nursing
subgroups, including lower job satisfaction, less autonomy and less satisfaction with nursing administration (Boyle, Miller, Gajewski, Hart, & Dunton, 2006). Understanding how transformational leadership and learning culture can improve work environments for nurses, both within and outside of Magnet-designated hospitals, is a potential positive outcome of this research.

In summary, the value of this proposed research lies in its ability to: (1) describe the value of Magnet recognition in fostering the relationship between leadership and learning to hospitals considering investing in this pursuit; (2) create a basis for transformational leadership training that maximizes its effect on organizational learning culture; and (3) build the body of knowledge related to the unique subculture of perioperative nursing.

**Positionality Statement**

This positionality statement describes my personal and professional background and how these may inform the lens through which I view this research topic. While learning and leading, the behaviors addressed in this proposed study, are universal, this research will focus specifically on the practice of perioperative nurses. As someone whose professional experience and demographic characteristics differ from the profile of a registered nurse, my position is one of an outsider.

Currently, I am the chief executive officer for a perioperative nursing certification organization. In this role, I manage the performance of a $3 million, not-for-profit, regulatory body. I am accountable for the achievement of strategic, financial and mission related objectives. My work is performed in a business context, not in a caregiving environment. This statement will detail the nature of these differences, but will ultimately state that my position as “the other”
(Briscoe, 2005) offers an otherwise unexplored perspective that adds value and richness to our understanding of these practices in the profession of nursing.

**Similarities in positionality.** Positionality includes the biases, experiences and understandings through which a person views the subjects of inquiry. While positionality is typically characterized by issues of race, culture or other demographic features, any difference in background, experience or education between the researcher and subject can present issues of positionality that should be disclosed or considered.

I am a 48-year-old, Caucasian female with a Hispanic heritage. I have a master’s degree in organizational development and I am a Certified Association Executive (CAE), which means that I have been educated and I am now board certified in my profession of association management. According to the most recently available sample of registered nurses, The National Sample Survey of Registered Nurses (NSSRN) (HRSA, 2010), nurses are on average 46 years old, female, and Caucasian. Less than half of registered nurses in this country have a bachelor’s degree, and less than 30% are certified in their specialty. In general, my position is similar in terms of age and race, but distinct in terms of educational preparation and certification. However, as Briscoe (2005) notes, these demographic characteristics do not allow easily categorization of my perspective on the behavior of perioperative nurses.

Although I share a gender with the majority of registered nurses, I do not hold a professional role that is traditionally occupied by females. Nor is my profession typically viewed as male-dominated, whereas much of nursing practice is controlled by medicine, which is perceived to be a male-dominated profession. According to Cutcliffe and Wieck, (2008), “nursing’s history is inextricably intertwined or bound up with the history of women,” (p. 504) and therefore the oppression of women as well. My lack of experience in gender-based
oppression might lead me to ascribe meaning to nursing culture or leadership behaviors as a lack of professionalism rather than an outcome of structural deficits that oppress women (Jupp & Slattery, 2006).

This leads to what I believe is the greatest source of bias I bring to the research I am proposing to study. Although I have more than twenty years’ experience working in and with nursing societies and related regulatory organizations, I am not a registered nurse. This difference in professional background, identity and culture marks the greatest source of distinction between my experience and those who work in the culture I aim to study. Donaldson and Crowley (1978) suggest that professionals are bound to their discipline based on a shared and distinct perspective. As a non-nurse, I do not possess the same career identity nor am I a member of the nursing discipline, therefore making the difference in my professional background the central factor in my positionality.

More relevant than my lack of clinical expertise is the difference between the environments in which I have worked and the environments in which perioperative nurses operate. Operating rooms are typically high stress environments. Stress results from the hierarchal nature of the surgical workplace, high patient acuity and the inherent isolation of the physical space of an operating room. In contrast, my professional experience is in highly collaborative relatively low-risk work environments characterized by collegiality, empowerment and professional autonomy. However, like nurses who work in Magnet facilities, I have benefited from the behaviors of transformational leaders.

I have worked for two companies in my career, an unusually small numbers in today’s increasingly mobile workforce. However, my relatively long tenure and growth in these organizations is the result of the transformational behaviors of their leaders. These leaders
guided organizations through periods of significant change, inspired commitment to a collective vision, and encouraged the development of individual and team spirit, all of which are central components of transformational leadership.

I have had similarly positive experiences working in the learning cultures fostered by these leaders. These learning cultures were characterized by continuous, collaborative and codified learning, which established learning as a critical component of success. This cultural condition didn’t occur organically. Rather, it was deliberately created and nurtured by leaders who inspired, lived and rewarded lifelong learning across the organization. I attribute my ascent to a CEO position and my pursuit of doctoral study to these professional experiences. My goal with this research is to foster similar experiences for nurses.

**Summary of positionality.** In general, I believe my positionality as a master’s-prepared, non-nurse, certified in my business specialty, with more than twenty years’ experience leading nursing societies offers both the necessary subjectivity and objectivity to adequately study and represent the behaviors of the perioperative nursing community. As Briscoe (2005) notes this type of “inclusive representation of the other,” (p. 35) has important benefits, namely the opportunity to enhance empathy and promote positive awareness of the subject group. I believe these benefits outweigh the risks of exclusive representation, whereby only nurses could study the behavior of other nurses.

**Research Questions and Hypotheses**

The independent variable in this study was transformational leadership. The dependent variable was organizational learning culture. Magnet recognition was proposed to be a moderating variable. The study proposed that transformational leadership is positively related with learning culture, and that the achievement of Magnet recognition strengthens the positive
direction of the relationship between the variables. Further, the research question expressed the intent to deconstruct transformational leadership into defined behaviors and determine which, if any, of these behaviors predicted organizational learning in perioperative nursing and how these relationships were moderated by a hospital’s Magnet designation.

I intended for this research to describe the relationship between leadership and learning in perioperative nursing units, and further demonstrate the value Magnet designation has on that relationship. These results can be utilized to better inform the value proposition of the Magnet Recognition Program®, and in turn the development of nurse leaders. My goal is a very practical one since I am an executive director of a nursing organization. As such, I am uniquely positioned and motivated to utilize the findings in a practical way by demonstrating the value of Magnet designation in improving nursing work environments and ultimately patient care. It is my hope to partner with colleagues from the perioperative nursing membership association or specialty nursing certification coalition to share the findings with the academic community as well. In this way I hope to bridge the research/practice gap identified by Vanderlinde and van Braak (2010).

Research Questions

1. Which transformational leadership behaviors significantly predict organizational learning in a perioperative nursing unit?

2. To what extent does a hospital’s Magnet status moderate the relationship between transformational leadership behaviors and organizational learning in a perioperative nursing unit?

3. Does the perception of transformational leadership behaviors and organizational learning culture differ significantly by hospital type (Magnet vs. non-Magnet) among perioperative nurses?
Hypotheses

H1: There is a positive relationship between transformational leadership and organizational learning culture in perioperative nursing units in Magnet hospitals.

H2: There is a positive relationship between transformational leadership and organizational learning culture in perioperative nursing units in non-Magnet hospitals.

H3: The positive relationship between transformational leadership and organizational learning culture will be stronger in perioperative nursing units in Magnet hospitals than in perioperative units in non-Magnet hospitals.

H4: Perioperative staff nurses in Magnet hospitals will perceive their managers to demonstrate a higher degree of transformational leadership than perioperative nurses in non-Magnet hospitals.

H5: Perioperative staff nurses in Magnet hospitals will perceive their organizations to be more reflective of organizational learning cultures than perioperative staff nurses in non- Magnet hospitals.

Theoretical Framework

The research study proposes to use transformational leadership as defined by Avolio and Bass (1988), and the learning organization culture as defined by Watkins and Marsick (1993; 1996). The constructs, elements and principles of each theory, along with an explanation for how they relate to the variables in the research questions, are described below.

Transformational leadership. Leadership theories are typically organized into categories based on their common approach. For instance, Spector (2006) arranged leadership theories into the four groups:

- the trait approach, which emphasizes personal traits of leaders;
• the behavior approach, which is similar to the trait approach but focuses on leader behavior;
• the contingency approach, which claims that leadership is the product of the leader, the leader’s behavior and the environment; and
• the leader-member exchange approach, which stresses the relationship between the leader and subordinate.

Transformational leadership resides within this last category. Transformational leadership was first introduced in the literature by Burns (1978) who defined it as a leadership style that inspired and motivated others to high achievement by focusing on a common purpose, values and goals. The essence of this leadership style resides within the leader-follower relationship, where both parties rise above basic expectations and achieve higher than expected results.

Whereas the subjects for Burns’ (1978) theory were political leaders, Bass (1985) sought to find evidence of these leadership styles in industrial and military organizations. Bass (1985) built on this definition with the development of multifactor leadership theory which included not only transformational leadership, but also transactional and laissez-faire leadership. Avolio and Bass (1988) identified four unique characteristics of transformational leadership styles:

• idealized influence (aka “charisma);
• inspirational motivation;
• intellectual stimulation; and
• individualized consideration.

**Transformational leadership in nursing.** Reference to transformational leadership is particularly widespread in literature related to nursing leadership. Its prevalence in the nursing literature indicates a widely held belief that it is the leadership theory most suited to informing
the practice of nursing leadership (Curtis, de Vries, & Sheerin, 2011). Transformational leadership has been found to positively influence nurse recruitment and retention (Henderson, et al., 2007), organizational commitment (Bycio, Hackett & Allen; 1995; Leach, 2005) positive organizational cultures (Casida & Pinto-Zipp, 2008), psychosocial work environment (Malloy & Penprase, 2010), nurse intent to stay (Bycio, et al., 1995; Cowden, Cummings & Profetto-McGrath, 2011; Leveck & Jones, 1996), job satisfaction (Failla & Stichler, 2008; Medley & Larochelle, 1995; Smith, Hood, Waldman, & Smith, 2005) and quality of care (Kanste, Kyngas & Nikkilä, 2007). However, there is a gap in the literature related to the relationship between transformational leadership and organizational learning cultures in nursing.

Based on a study by the American Academy of Nursing (ANCC) (McClure, Poulin, Sovie & Wondell, 1983), the ANCC Magnet Recognition Program® was established in 1990 to recognize hospitals that maximized the impact of nursing care to achieve quality patient outcomes. Recognizing the influence of transformational leadership in nursing, the American Nurses’ Credentialing Center (ANCC) made it the leadership style of preference in its Magnet Recognition Program® (ANCC, 2014).

The adoption of the Magnet Recognition Program® in healthcare is significant. Today, approximately 7% of hospitals have achieved Magnet recognition status (American Hospital Association, 2014). While it is a small percentage of overall hospitals, it is a prestigious distinction. According to U.S. News and World Report Honor Roll of Best Hospitals in America, 15 of the top 18 medical centers are Magnet designated facilities, and the top ten children’s hospitals have earned the designation (ANCC, 2014).

Studies on the work environment in Magnet hospitals indicate that transformational leadership has similar impact in healthcare as it does in other settings. Kelly, McHugh and
Aiken (2011) demonstrated that Magnet hospitals have significantly better work environments, a more highly educated and professional nursing staff, and higher job satisfaction than non-Magnet hospitals. Additionally, nursing leadership in Magnet hospitals has been shown to increase empowerment (Manojlovich, 2005; Upenieks, 2003) self-efficacy (Manojlovich, 2005) and job satisfaction (Upenieks, 2003). What is less clear is the relationship between transformational leadership and organizational learning, particularly in the culture of perioperative nursing. Given its prevalence in nursing, as well as its demonstrated correlation with elements of nursing culture, it is a logical choice as the leadership style on which to base this proposed study.


Organizational learning has been conceptualized in terms of systems thinking (Senge, 1990), a traditional learning perspective (Pedler, Burgoyne & Boydell, 1991) and a strategic approach (Garvin, 1993). Watkins and Marsick (1993; 1996) draw on the research from all of these scholars in the development of their theory on organizational learning culture. They also draw on the early theories of learning from John Dewey (1938) and Kurt Lewin (1946) to
explain how individuals foster a culture and climate that is supportive of learning. Their theory of organizational learning culture is the predominant theoretical framework cited throughout the literature.

Watkins and Marsick’s (1993; 1996) theory of organizational learning culture describes an integrated approach to organizational learning that includes seven dimensions of culture and climate that characterize an organization’s journey to becoming a learning organization. The seven dimensions are:

1. Create continuous learning opportunities
2. Promote inquiry and dialogue
3. Encourage collaboration and team learning
4. Create systems to capture and share learning
5. Empower people toward a collective vision
6. Connect the organization to its environment
7. Provide strategic leadership

Several dimensions of the theory proffered by Watkins and Marsick (1993; 1996) align with the practice of nursing. Most significantly is the emphasis on continuous learning as an element of organizational learning. The commitment to lifelong learning is particularly important in healthcare given the pace of change and the patient safety obligations of practitioners. Medicine and nursing require that practitioners demonstrate continued competence in their practice, and a commitment to lifelong learning is necessary to fulfill that requirement. In this way, the model from Watkins and Marsick (1993; 1996) aligns well with the characteristics of the nursing profession. Additionally, while research shows that nurses who work in Magnet-hospitals benefit from a more positive work environment overall, there is no evidence
specifically supporting the presence of a learning culture in Magnet-hospitals. This goal of this research to discover indicators of a learning culture will therefore address a gap in what is known about Magnet hospitals in general.

The model also includes a scale related to collaboration and teamwork. This is the foundation of the perioperative environment and the care provided in that setting. In an operating room, roles are highly defined (surgeon, nurse, anesthesia care provider, technologist), but interdependence is crucial. Learning with and from each other is critical to the ability of perioperative teams to become learning organizations. The unique nature of operating rooms and the emphasis on teamwork in the Watkins and Marsick (1993; 1996) model provide a natural synergy that justifies its use in this study.

**Summary**

This research aims to address an important problem in healthcare, that being, how does transformational leadership relate to organizational learning? In particular, it will aim to describe this relationship in the understudied profession of perioperative nursing (Riley & Manias, 2002). Further, it will describe the moderating effect of the Magnet Recognition Program®, an increasingly popular and influential status for hospitals. Collectively, these findings have the potential to build the body of knowledge in nursing, leadership and organizational learning.
Chapter 2: Review of Literature

This study focuses on measuring the relationship among the leadership style of perioperative nurse managers, Magnet recognition, and the learning culture of perioperative units in hospitals. Specifically, this research will attempt to specify those transformational leadership behaviors that are associated with positive measures of learning cultures in a perioperative nursing unit and whether there is a difference in these relationships among Magnet and non-Magnet contexts. In order to position this research within the larger body of knowledge on these topics, this study will review the following literature: (a) leadership theory, in particular transformational leadership (Avolio and Bass, 1988); and its widespread use in nursing; (b) the learning organization culture as defined by Watkins and Marsick (1993; 1996); and (c) the ANCC Magnet Recognition®. Studies on the subculture of perioperative nursing will also be examined to clearly distinguish the rational for selecting it as the focus of this study.

Leadership Theories

Leadership is among the most widely studied topics in the social sciences. The focus of the research on leadership has shifted in response to a need to understand it within the changing and increasingly complex nature of organizations. As the study of leadership evolved, there has been an increased acknowledgement that leadership effectiveness is largely situational. As Heilbrun (1994) notes, “Successful captaincy in business, government, or the military does not necessarily transfer to other fields - or even among those three” (p. 5).

The literature seems to have organized the prevailing theories of leadership into four categories: (a) trait (b) behavioral (c) contingency and (d) leader-member exchange. It is important to understand the historical development of these theories in order to clearly see how modern theories align with the contemporary nature of business and often reflect the values of
the people who comprise those organizations. Applied to this study, this knowledge helps to explain the rationale for the wide adoption of transformational leadership in the nursing profession.

**Trait theories of leadership.** Trait theories of leadership center on the personal characteristics that distinguish leaders from non-leaders (Bryman, 1992). Rooted in the “Great Man” of the 18th and 19th centuries, trait theories reflect the belief that leaders are born not made, and that individuals have innate qualities and experiences that make them more effective leaders. However, in the mid-19th century, theorists began to question the validity of trait theories as the sole explanation for leadership effectiveness. In particular, Stogdill (1948) performed a comprehensive review of the leadership literature and concluded that context was critical and that a leader’s effectiveness was largely situational. Kirkpatrick and Locke (1991) did not share Stogdill’s belief that traits were irrelevant in determining a person’s leadership abilities, but instead believed that certain traits such as motivation, energy and confidence drive action. It is that ability to take action, rather than just possess innate traits, that Kirkpatrick and Locke (1991) believed differentiated leaders from non-leaders.

**Behavioral theories of leadership.** This led researchers to consider leader behaviors as factors in determining leadership effectiveness. Theories within the behavioral leadership domain propose that effective leaders are distinguished from ineffective leaders based on defined behaviors or patterns of action. Examples of such behaviors include laissez-faire, autocratic or democratic leadership behaviors. While trait leadership theories implied that leaders are born, behavioral theories supported the notion that leaders can be made by teaching how to minimize or emphasize certain behaviors in order to be more effective.
These behavioral leadership theories were the focus of the much of the leadership research in later half of the 20th century. The three most widely cited behavioral leadership studies are the University of Michigan Studies (Likert, 1967), The Managerial Grid (Blake and Mouton, 1970) and the Ohio State University studies (Bass & Stogdill, 1990).

In similar descriptions, Likert (1967) and Blake and Mouton (1970) defined leadership as focusing on either people or production. In what is referred to as the Michigan Studies, Likert (1967) described leadership as being either job-focused or people-focused. Leaders who were job-focused emphasized the tasks or technical skills required for an employee to be productive. On the opposite end of the continuum were people-focused leaders, who took a personal interest in employees and achieved influence through interpersonal relationships. In their widely cited Managerial Grid, Blake and Mouton (1970) defined five leadership styles based on scores of two variables – needs of production and needs of relationships – on a range from 1-9. Low concern for either people or production is defined as “Impoverished Management,” whereas high concern for both people and production is defined as “Team Management.” As one might expect, a balanced score of 5 on the range of production and people is defined as “Middle of the Road Management.”

Researchers from Ohio State University also described two dimensions of leadership: individualized consideration and initiation of structure (Bass & Stogdill, 1990). Behaviors associated with individual consideration include treating all group members fairly and equitably, but as unique individuals. Initiation of structure describes behaviors in which a leader organizes a group and the work to be performed (Bryman, 1992).
Trait and leadership theories are similar in that they both focus on the individual leader. Subsequent research shifted the focus to the context in which leadership is practiced. These are organized in the category of contingency theories of leadership.

**Contingency theories of leadership.** Contingency theories also described leadership in terms of leader behavior. However, contingency theories posit that leadership effectiveness is determined within a context of organizational factors such as the people, task and culture of an organization. Contingency theories suggest that effective leaders recognize these clues and adapt their natural leadership styles to that particular environment.

Fiedler (1967) believed that high performing groups are the result of the synergy that occurs when a leader’s natural style fits the situation or characteristics of organization. Using the Least Preferred Co-Worker (LPC) instrument, leaders are identified as either oriented toward human relations or tasks. This LPC score is overlaid onto situational characteristics such as the task at hand, the manner in which the followers receive the leader, and the extent to which the leader has power over the group. Together, these situational characteristics combined with the leader’s LPC score determine the leader’s effectiveness.

The Path-Goal theory espoused by House (1971) also situates a leader’s style within the organizational context. House (1971) suggested that the role of the leader is to articulate goals and provide the path and resources for followers to achieve those goals. Path-Goal theory contends that positive outcomes are the result of the successful integration of leader behavior, and environmental and subordinate contingency factors. Hersey, Blanchard and Johnson (1988) also considered leadership within the context of the particular workplace and follower characteristics. Their Situational Leadership Model (1988) considered the factors of task behavior, leadership behavior, and readiness of the subordinate (Deckard, 2009) in determining
the effectiveness of the leader. They contended that as subordinate maturity increased, leaders should focus less on tasks and more on relationships.

**Leader-Member Exchange Theories of Leadership.** Like the contingency theories of leadership, the leader-member exchange theory (LMX) recognizes that leadership does not occur in a vacuum. Instead, leadership is a “multi-level phenomena,” (p. 1) characterized by the interdependence of leaders, followers and organized groups (Gooty, Serban, Thomas, Gavin, & Yammarino, 2012). Leader-member exchange theories focus specifically on the dyadic relationship between individual leaders and followers (Graen & Uhl-Bien, 1995). According to this theory, a high quality relationship between leader and follower is characterized by an interdependent system of inducements and contributions. Inducements may include time and attention, whereas contributions are typically defined in terms of performance. Leader-member exchange theories suggest that leaders develop close relationships with members of an “in-group,” who receive more attention and support from the leader. In return, members of this in-group report higher performance, less turnover and greater satisfaction with their supervisor (Schriesheim, Neider, & Scandura, 1998). Transformational and transactional leadership, with its emphasis on the relationship between leaders and followers, is rooted in the concepts described in leader-member exchange theory.

**Transformational and transactional leadership.** Drawing on principles of leader-member exchange theories, James McGregor Burns (1978) was the first to introduce and contrast the two types of leadership: transactional and transformational. Burns (1978) based his theory on a study of political leaders. Bass (1985) applied the theory to business and military leaders, thereby popularizing it across a broad array of organizational types and sectors.
**Transactional leadership.** Transactional leaders rely heavily on structure, tasks and rewards in exchange for performance. Transactional leadership focuses on goals and standards and the consequences associated with either meeting or failing to meet them. In its corrective form, called active management by exception, transactional leaders actively monitor performance and immediately intervene when performance falls short of the defined standard. In its more passive form, called passive-avoidant or laissez-faire leadership, transactional leadership is characterized by a failure to monitor employee performance. Instead, transactional leaders wait for problems to arise, and even then, may not take any action. Over time, the construct of laissez-faire leadership has been distinguished from transformational and transactional leadership as a type of non-leadership or the absence of leadership.

Transactional leadership was originally depicted as a lower form, less evolved type of leadership that was contrary to transformational leadership. However, reflecting concepts apparent in contingency or situational theories of leadership, subsequent studies have shown that transactional leadership is, in fact, effective in certain circumstances. For instance, Bryant (2003) argued that transactional leadership was more effective than transformational leadership at managing knowledge at the organizational level. Bycio, et al., (1995) demonstrated a positive relationship between transactional leadership and employee commitment. Focusing on the recognition component of transactional leadership, Goodwin, Wofford, & Whittington, (2001) demonstrated a positive relationship between transactional leadership and organizational citizenship.

Additionally, Bass (1985) established that transformational and transactional leadership were not opposite concepts as Burns (1978) originally claimed. Instead, Bass (1985) demonstrated that transformational leadership enhanced the practice of transactional leadership,
establishing an augmentation effect that has been validated by subsequent studies (Hater & Bass, 1988). Building on this understanding, Bass and his colleagues refined their model to reflect a “full range” leadership style, which includes transformational, transactional and laissez-faire components.

**Transformational leadership.** Research and practice of transformational leadership expanded greatly in the 1980s. Bass (1985) and his colleagues were prolific writers and researchers, accounting for the overwhelming presence of their work in the literature.

In his seminal article on transformational leadership, Bass’ (1985) described the findings from two studies. The first study was of 70 senior executives in an industrial organization who were asked to describe their experience with someone who demonstrated the behaviors associated with transformational leadership. Central to the findings from this research was that transformational leaders motivate subordinates beyond what they thought possible. This is the essence of transformational leadership, and a key distinguishing factor between transformational and transactional leadership.

Bass (1985) used the descriptors uncovered in this first study to build the instrument used in a second study of U.S. Army officers. This served as the basis for what was to become perhaps Bass’ (1985) most significant contribution to the field of leadership research: the development of the Multifactor Leadership Questionnaire (MLQ). The MLQ, which is now in its fifth iteration, measures behaviors and traits of transformational, transactional, and laissez-faire leadership, the constructs that make up the full-range leadership model.

Three factors of transformational leadership were identified from this second study: (1) charismatic leadership, defined as the extent to which leaders inspire subordinate enthusiasm, loyalty and trust in themselves; (2) individualized consideration, which is characterized by a
focus on the individual development of followers, and (3) intellectual stimulation, which measures a leader’s ability to enhance the problem-solving abilities of followers.

Avolio, Waldman, and Yammarino (1991) refined Bass’ (1985) original definition of transformational leadership to separately delineate inspirational motivation, and redefine charisma as idealized influence. This resulted in what has come to be known as the “4 I’s” of transformational leadership: (1) idealized influence; when workers emulate their leader; (2) individualized consideration; when followers needs are uniquely considered and equitably met; (3) intellectual stimulation; when leaders stimulate a new way of thinking among followers; and (4) inspirational motivation, when leaders are able to motivate shared commitment to a common goal.

Bass (1985) recognized the moderating effect of context on the efficacy of leadership styles (Bass, 1997; Bass & Avolio, 1990; Hoyt & Blascovich, 2003). However, Bass (1997) also believed that there were elements of transformational leadership that had universal applicability, and that the positive effects of transformational leadership transcended geographic and organizational boundaries. Supporting this premise, Bass (1997) further cited research in military, business, and educational sectors across several countries that supported a “universality argument,” (p. 130). While some scholars argue against the principle of universality (Yukl, 1999), numerous other scholars have expanded the body of evidence supporting universality by demonstrating positive results of transformational leadership in other industries, particularly in healthcare (Hargis, Watt & Piotrowski, 2011; Tims, Bakker, & Xanthopoulou, 2011; Bycio, et al., 1995).

Bass’ (1985) seminal research has guided a voluminous body of related work. As Conger (1999) noted, the field seems to be settling on Bass’ (1985) theory of transformational leadership
as the dominant paradigm in the field, particularly in healthcare. The evidence across the literature in general supports the relationship between transformational leadership on performance, employee satisfaction (Bycio, et al., 1995), and unit-based performance (Hater and Bass, 1988). There is widespread practical utilization of transformational leadership theory in industries such as healthcare (Tims, Bakker & Xanthopoulou, 2011) and corporate industry (Hargis, et al., 2011). Mirkamali, Thani and Alami (2011) demonstrated a positive relationship between transformational leadership and organizational learning, noting that idealized influence, a component of transformational learning, was an important predictor of organizational learning. The influence of transformational leadership on contemporary business issues such as corporate social responsibility (Waldman, Siegel & Javidan, 2006) and virtual work environments (Hoyt & Blascovich, 2003) have also been studied.

However, despite the widespread body of evidence supporting the efficacy of transformational leadership, there are also calls for continued research on the relationship between contextual factors (Conger, 1999; Yukl, 1999), charisma (Conger, 1999) and potential liabilities associated with transformational leadership (Yukl, 1999). Additionally, the emerging literature on complexity leadership theory presents a compelling avenue for research, particularly in the data-driven, innovative industry of healthcare and the multi-faceted role of nursing.

**Nursing Leadership**

Recent research suggests that leadership practices of nurses contribute to positive patient outcomes (Wong & Cummings, 2007). Effective nursing leadership is considered essential creating a positive experience for both patients and nurse employees (Hutchinson & Jackson, 2013). Failures in nursing leadership have demonstrated a corresponding, inverse relationship, in which leadership ineffectiveness has been shown to contribute to negative clinical outcomes
and work environments (Garling, 2008; Jackson, Hutchinson, Peters, Luck & Saltman, 2012).
Together, these findings demonstrate the importance of quality leadership in nursing.

Interestingly, despite the breadth of leadership literature, there is little consensus on a
definition of nursing leadership as a distinct discipline. Some authors (Lee & Cummings, 2008)
contend that definitions of leadership that draw on psychological, sociological or business
literature may effectively translate to nursing, however the same authors concede that
“leadership to nurses may vary from what leadership means to those in the business or the
military” (p. 246).

Although admittedly scant, some literature does exist that speaks to the unique nature of
nursing leadership. For instance, a study by Dunham and Fisher (1990) described the importance
of clinical knowledge as a factor unique to effective nursing leadership. Other studies in nursing
leadership document the characteristics of empowerment and influencing others (Antrobus &
Kitson, 1999) as being particular to the practice of leadership in nursing. Yoder-Wise (2014)
defines nursing leadership as the “use of personal traits and personal power to constructively and
ethically influence patients, families and others toward an end point vision or goal” (p. 2). Effective nurse leaders have also been identified as those who lead by example, are skilled
communicators, and visionary (Linton & Farrell, 2009). Other behaviors ascribed to effective
nursing leaders include being a strong advocate for the profession of nursing and supportive of
staff in general (Urden & Monarch, 2002). Accessibility, a collaborative spirit, influential,
knowledgeable, supportive and visible were all identified as essential traits of a nurse leader.
(Upenieks, 2003).

A lack of an agreed upon, singular definition has not discouraged research into nursing
leadership. Hutchinson and Jackson (2013) note the intense focus on nursing leadership over a
two decade period. Much of the research agenda in nursing leadership during that time has been guided by an interest in transformational leadership.

**Transformational Leadership in Nursing**

A review of nursing leadership research revealed that 53% of studies reviewed investigated transformational leadership (Cummings, Midodzi, Wong & Estabrooks, 2010). Over time, nursing has come to embrace transformational leadership as the model most aligned with the relational and caring essence of nursing. Some argue it is well suited to nursing because of its perceived ability to empower nurses (Sofarelli & Brown, 1998) and create an engaged nursing culture (Ross, Fitzpatrick, Click, Krouse, & Clavelle, 2014), which in turn has numerous positive effects on job satisfaction, (Morrison, Jones & Fuller, 1997) organizational effectiveness (Laschinger, Finegan, & Shamian, 2001) and on decreasing nurse burnout (Greco, Laschinger, & Wong, 2006). Others claim that transformational leadership’s emphasis on inspiring others through communication of shared values is consistent with the perception of nursing as a highly values-driven profession. Additionally, the individual relationship established between nurse and patient mirrors the individual consideration transformational leaders are said to provide followers.

In addition to the conceptual alignment between transformational leadership and nursing practice, there is a plethora of evidence supporting the effectiveness of transformational leadership on various care quality and workforce outcomes. In terms of patient care, transformational leadership has been shown to be positively related to improved quality and patient safety (Mastal, Joshi, & Schulke, 2007) and lower patient mortality (Cummings, et al., 2010). Further, numerous studies demonstrate a relationship between transformational leadership and patient care quality and patient satisfaction (Casida & Pinto-Zipp, 2008).
The evidence supporting transformational leadership is perhaps most clearly demonstrated in studies on the nursing work environment. Lake and Friese (2006) define nursing work environments as a set of “organizational characteristics of a work setting that facilitate or constrain professional nursing practice” (p. 2). Factors such as nurse autonomy, nurse control over resources and nurse-physician relationships are all factors in the nursing work environment (Aiken, Sochalski & Lake, 1997). Improving nursing work environments is considered critical in the ability of healthcare to address the current and growing nursing shortage (Sochalski, 2002). Work environments that are shown to be transformational have been correlated with high job satisfaction (Failla & Stichler, 2008) and nurse performance and retention (Anthony et al., 2005; Cowden et al., 2011). Nursing work environments in which the leader is perceived to be transformational also show increases in research utilization (Kajermo et al., 1991) and use of evidence-based, best practices (Marchionni, & Ritchie, 2008).

Dunham-Taylor (2000) discovered staff satisfaction and workgroup effectiveness decreased as leaders exhibited less transformational and more transactional behaviors.

**American Nurses’ Credentialing Center (ANCC) Magnet Recognition Program®**

One way in which a hospital has been known to differentiate their work environment from others is by seeking or achieving ANCC Magnet Recognition. This program is based on a study by the American Academy of Nursing (McClure, et al., 1983), in which researchers, in an attempt to address a critical nursing shortage, studied work environments that were more successful at recruiting quality nursing staff.

Out of 163 hospitals, forty-one were distinguished by a greater ability to attract and retain nurses as evidenced by lower vacancy and turnover rates. In a subsequent analysis of the work environments at these hospitals, researchers identified themes that later became known as Forces
of Magnetism based on their capacity to attract and retain a high quality nursing staff. In 1990, the ANCC established a formal program by which hospitals could be designated as magnets based their adherence to these standards. Since the designation of the first Magnet hospital in 1995, more than 400 hospitals, or roughly 7% of all registered hospitals in the United States, are currently designated as Magnet facilities (ANCC 2014).

**Magnet model.** The Magnet model consists of five components: (1) transformational leadership; (2) structural empowerment; (3) exemplary professional practice; (4) new knowledge, innovations and improvements; and (5) empirical outcomes. The original 14 Forces of Magnetism are organized within these five model components. Described as “attributes or outcomes that exemplify nursing excellence” (ANCC, 2014) the Forces of Magnetism include:

1. Quality of Nursing Leadership
2. Organizational Structure
3. Management Style
4. Personnel Policies & Programs
5. Professional Models of Care
6. Quality of Care
7. Quality Improvement
8. Consultation & Resources
9. Autonomy
10. Community and Healthcare Organization
11. Nurses as Teachers
12. Image of Nursing
13. Interdisciplinary Relationships
14. Professional Development

The journey to Magnet recognition is long and arduous. The applying organization is required to submit both qualitative and quantitative evidence demonstrating the presence of the Forces of Magnetism in their workplace. An appraisal team comprised of graduate degree prepared registered nurses with relevant training in Magnet concepts and criteria reviews the applications. This team scores the application and, once a certain score threshold is achieved, this same appraisal team conducts a site visit to validate the accuracy of the information of the documentation provided in the written application. Based on their review, the appraiser team makes a recommendation to the ANCC Commission on Magnet, who makes the final decision whether or not to confer the Magnet designation. Designation is made for a four-year period, at the end of which a hospital must apply for redesignation.

Magnet research. The literature is rich with evidence supporting a relationship between Magnet recognition and favorable outcomes for both patients and nurses. Patients in Magnet facilities have been shown to experience decreased pressure ulcers (Berquist-Beringer, Davidson & Agosto, 2009); fewer falls (Dunton, Gajewski, Taunton & Moore, 2004) and higher quality care (Armstrong & Laschinger, 2006). Studies have also shown that patients in Magnet hospitals have significantly better outcomes for mortality than patients in non-Magnet hospitals (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002). In one study, admission to hospitals with Magnet designation has been shown to have a 20% decreased odds for mortality than non-Magnet hospitals (Evans, et al., 2014).

Studies show similar benefit of Magnet recognition on the nursing work environment. Aiken and her colleagues (Aiken, et al., 2002) demonstrated that nurses in Magnet hospitals experience less burnout and higher job satisfaction than nurses in non-Magnet hospitals. Similar
studies have shown the benefits of Magnet recognition on improved nurse retention (Lacey, et al., 2007) and decreased turnover rates (Jones & Gates, 2007).

Scholars have also studied the individual effects of each of the five components of the Magnet model, as well as each of the 14 Forces of Magnetism, on quality of care and nursing work environments. Wolf and Greenhouse (2006) have shown that three of the 14 Forces of Magnetism, (1) flat organizational structures; (2) participative management and (3) positive interdisciplinary relationships, all positively influence improved nursing performance. Laschinger, Finegan, Shamian & Wilk (2004) reported a relationship between structural empowerment and nurses’ indication of care quality. Van Bogaert, Kowalski, Weeks, Van heusden & Clarke (2013) demonstrated that supportive nursing management has a significantly positive impact on nurse-assessed quality of care and job satisfaction. Similarly, Kirwin, Matthews and Scott (2013) showed that nursing leadership plays a crucial role in establishing environments conducive to nursing job satisfaction, turnover and quality of care. However, it is interesting to note that although demonstration of transformational leadership by nurse leaders is a required element of Magnet designation, a recent study comparing the leadership practices of chief nursing officers in Magnet and non-Magnet organizations found no statistically significant difference (Porter-O’Grady, 2009). Further, while some studies speak to the relationship between Magnet and segments of organizational learning, such as the incorporation of evidence into practice, there are no studies that focus on the relationship between Magnet status and the overall presence of organizational learning.

Organizational Learning

Despite voluminous research on the topic, the field of organizational learning has failed to settle on a shared purpose, method or language for studying the topic. A divide seems to exist
between the scholarly literature, which focuses on science and research into the process of organizational learning, and the business literature, which focuses on diagnosing and consulting in learning organizations (Argyris, 1999). Further division among the two communities rests in differing underlying assumptions on the “feasibility and desirability” (Popper and Lipshitz, 2000, p. 346) of organizational learning. Argyris and Schon (1996) note that academics, as part of the scholarly research process, routinely investigate the perceived benefits of organizational learning, while consultants accept them without question. Adding to the ambiguity in the field, scholars and practitioners often use the terms “organizational learning” and “learning organization” interchangeably. Conceptual confusion notwithstanding, a review of the literature does reveal certain themes that transcend the fields of study, including the collective nature of learning, the systemic and practical application of learning, the ability to recognize and adapt to change, and the importance of leadership and cultural support for learning.

**Organizational learning definitions.** Organizational learning is generally defined as a process characterized by the continual creation and transfer of knowledge among and between employees, and the integration of that learning into organizational systems in order to achieve strategic goals (Marquardt, 1996). Nonaka (1991) claimed that organizational learning is not an activity, but a “way of behaving,” (p. 97). It is an ongoing, practice by organizations to acquire, disseminate, archive and translate learning into practice (Barnes, 1999). Organizational learning is more than the sum of knowledge collected by individual learners within an organization (Popper & Lipshitz, 2000). While often conceptualized as a component of employee training or development, organizational learning applies learning at a higher, organizational level. For organizational learning to occur, individual learning must be retained, disseminated and incorporated into practice. It is an organization’s systematic, ongoing practice of disseminating
learning that distinguishes it from merely being a collection of individual learners (Popper & Lipshitz, 2000). When the sharing of learning is embedded in the structure and culture of an organization, it may be defined as a learning organization.

**Learning organization definitions.** A popular definition of a learning organization is offered by Senge (1990), who defines five disciplines of a learning organization: (1) personal mastery; (2) building shared vision; (3) measuring mental models; (4) team learning; and (5) systems thinking. Garvin (1993) criticized this and other widely used definitions as being “reverential and utopian,” (p. 19). Instead, he describes learning organizations as being skilled at five practical activities: (1) systematic problem solving; (2) experimentation; (3) learning from their own experiences; (4) learning from experiences of others; and (5) transferring knowledge quickly and efficiently throughout the organization. A model offered by Ortenblad (2002) describes learning organizations as consisting of four aspects: (1) organizational learning, which includes an awareness of the need for the learning, the storing of learning and the application of learning into practice; (2) learning at work, or learning while doing; (3) learning climate, which is defined as an organization that encourages, fosters and values learning; and (4) learning structure which is characterized by organizational flexibility and adaptability.

Theorists also frame organizational learning at three levels: individual, group and organizational. Senge’s (1990) definition transcends these levels, with personal mastery and mental models residing at the individual level, team learning at the group level, and building shared vision and systems thinking at the organizational level. The model created by Watkins and Marsick (1993; 1996) organizes the cultural aspects of learning organizations in three similar levels. At the individual level, they include continuous learning and inquiry and dialogue. At the group level, they include collaboration and team learning. Finally, at the organizational level,
they include systems for sharing learning, empowerment of a shared vision, connection of the
organization to its environment and strategic leadership. The model also organizes these seven
dimensions into two distinct components: people and structures. In a healthcare setting, these
levels can be conceived at the individual nurse, unit (surgery, emergency, intensive care, etc.)
and hospital levels. Together, these people and structures comprise the culture in which learning
occurs.

**Organizational learning culture.** While many organizations seek to become learning
organizations, few consider the relationship between organizational culture and organizational
learning. The literature suggests that organizational learning is largely influenced by
organizational culture (Ellis, Caridi, Lipshitz & Popper, 1999; Lipshitz, Popper, & Friedman,
of shared basic assumptions learned by a group that solved its problems of external adaptation
and internal integration, which has worked well enough to be considered valid, and therefore, to
be taught to new members as the correct way to perceive, think, and feel in relation to those
problems (p. 18). This definition describes the concept of culture as the basic assumptions
people share. It reflects a belief that patterns of assumptions serve to reinforce each other and
are passed on to new members as they are integrated to the group.

Organizational learning cultures are often defined as those that share assumptions about
the value of continuous inquiry, the importance of routinely incorporating new knowledge into
practice, and the employment of managers who value and reward learning. Popper and Lipshitz
(2000) define a learning culture as one that embeds structural features that they call
organizational learning mechanisms (OLMs) in a culture of learning that reflects the values of
transparency, inquiry, integrity, issue orientation and accountability. Cook and Yanow (1993)
also describe organizational learning through a cultural lens, concluding that organizational learning occurs through the process of continual cultural redefinition. They explain that organizational knowledge is transmitted through cultural artifacts such as “objects, language and acts,” (p. 368), and when an organization redefines the meaning of those cultural artifacts, organizational learning has occurred.

As demonstrated throughout this review of the literature, organizational learning has been conceptualized in terms of systems thinking (Senge, 1990), a traditional learning perspective (Pedler, et al., 1991) and a strategic approach (Garvin, 1993). The science on organizational culture has also served as a leading conceptual framework within which organizational learning is situated. The work of Edgar Schein (2010) frames much of the knowledge related to organizational culture. The work of Schein (2010) and the theories of individual learning from John Dewey (1938) and Kurt Lewin (1946) are all evident in the learning culture theory developed by Watkins and Marsick (1993; 1996). Their theory of organizational learning culture is the predominant theoretical framework cited in the literature.

**Watkins and Marsick.** Watkins and Marsick’s (1993; 1996) theory of organizational learning culture describes an integrated approach to organizational learning that includes seven dimensions of culture and climate that characterize an organization’s journey to becoming a learning organization. Subsequent studies use some or all of the seven dimensions of a learning culture to frame their studies on the effect of learning on performance. In a review of twelve learning organization perspectives (Ortenblad, 2002), the model offered Watkins and Marsick (1993; 1996) was found to be the one that encompassed the broadest array of ideas reflected in the literature.
Watkins and Marsick (1993; 1996) defined a learning culture in terms of seven distinct but interrelated dimensions: (1) continuous learning; (2) inquiry & dialogue; (3) team learning; (4) embedded systems; (5) empowerment; (6) system connection; and (7) providing leadership. Their model is based on the premise that learning happens both formally, through defined training and development, and informally, through conversation and on-the-job training. They contend that supporting this holistic model of learning requires leaders who foster cultures that support multiple modes of learning.

The model offered by Watkins and Marsick (1993; 1996), and measured by the related instrument, the Dimensions of the Learning Organization Questionnaire (DLOQ) has been used by over 200 companies and translated into six languages including Spanish, Korean and Arabic (Marsick & Watkins, 2003). Moilanen (2001) describes it as the most comprehensive of the learning culture diagnostic tools. Watkins, Yang and Marsick (1997) and Yang, Watkins and Marsick (1998) all demonstrate a relationship between organizations who score high on the dimensions of a learning organization and financial and knowledge performance. Studies by Yang (2003) and Hernandez (2003) further validate this relationship between the seven dimensions described by the DLOQ (Marsick & Watkins, 2003) and organizational performance. However, despite its widespread use, a review of the literature does not reveal widespread use of the DLOQ to measure the learning culture in nursing. One exception is a study by Estrada (2009) which utilized the DLOQ to describe the relationship between characteristics of a learning organization with nurses’ beliefs regarding evidence-based practice. Interestingly, Estrada (2009) indicated intent to conduct further analysis on the mediating effect of a hospital’s Magnet status on the relationship between the variables, but an exhaustive search of the literature as well as direct communication with the author yielded no indication of further research.
**Organizational learning culture in healthcare.** Healthcare, like other industries, exhibits its own cultural characteristics. There is some question as to whether the process of organizational learning is different in hospitals than in other organizations (Chan, 2003). The rationale for organizational learning in healthcare is based on its perceived contribution to reduce medical errors or improve quality care. Nurses in particular are encouraged to create learning environments to ensure “the delivery of contemporary and safe healthcare” (Henderson, et al., 2011). Conversely, in manufacturing or other industries, advocates for organizational learning usually cite its effects on financial performance or innovation. (Chan, 2003)

Additionally, the language used to describe organizational learning in healthcare is often different than it is in organizations from other industries. Whereas financial or manufacturing organizations use terms such as innovation, change or adaptation to describe the process of organizational learning, healthcare often describes organizational learning in terms of evidence-based practice or patient safety culture. Therefore, a review of the evidence-based practice and patient safety literature revealed several studies that describe organizational learning in healthcare.

A culture of learning in hospitals is said to utilize evidence-based practice, defined as the use of “standardized processes, protocols, checklists, and guidelines” (Sammer, Lykens, Singh, Mains, & Lackan, 2010, p. 162) that demonstrate a culture of safety. Facilitators of evidence-based practice include the provision of learning opportunities (Brown, Wickline, Ecoff, & Glaser, 2009) and motivation toward a shared vision (Estrada, 2009). This commitment to incorporating research into practice aligns with the dimension of organizational learning that seeks continuous learning and embeds that learning in organizational systems.
In a study on the relationship between nurse perceptions of their hospitals as learning organizations and their support for evidence-based practice (Estrada, 2009), nurses rated “empower people toward a collective vision” and “promote inquiry and dialogue” as the lowest learning organization characteristic in the hospitals in which they worked. This suggests that focusing learning opportunities on developing skills in inquiry and dialogue will increase nurse beliefs in evidence-based practice.

The cultural elements of organizational learning in healthcare are further described in the patient safety literature. A culture of safety was first discussed in the context of nuclear power, and was subsequently applied to other high risk industries such as aviation and healthcare. When applied in healthcare, a patient safety culture is described as an environment that encourages use of data to improve care, values learning from errors rather than placing blame, and involves leaders as role models and system change agents (Krumberger 2001, Piotrowski & Hinshaw 2002, Wong, Helsinger & Petry, 2002). A culture of patient safety has been defined by nursing’s shared values, beliefs and assumptions (Feng, Bobay, & Weiss, 2008). These characteristics of a patient safety culture are aligned with the organizational learning culture in several respects, including the shared presence of inquiry, dialogue and leadership across both cultural descriptions.

The unique nature of organizational learning in healthcare may be best described in a study by Popper and Lipshitz (2000). In their case study of organizational learning in medical and surgical units, they demonstrated how differences in leadership and work environments can have different effects on organizational learning. The standardized nature of the care provided in a surgical unit allowed for the opportunity to videotape cases and use them as a basis for learning. The work on a medical floor was different and therefore did not allow for the same
structure of learning. This task structure was identified as a key source of organizational learning in the surgical setting. However, the leadership style of the surgeon, described as formal, resulted in low employee commitment and motivation. Conversely, the “social atmosphere” (p. 355) in the medical unit is described as dedicated open and caring, and this atmosphere is attributed to the “head physician’s warm and direct personal style” (p. 355).

While both units demonstrated characteristics of organizational learning, the authors contend that the source of organizational learning differed between the two units. They claim organizational learning was achieved as a result of the task structure in the surgical setting, whereas an equal “if not higher” (p. 358) level of organizational learning was achieved as the result of the leadership behaviors demonstrated in the medical unit. Not only does this study demonstrate how organizational learning is uniquely practiced in healthcare, but also describes how different units within the same healthcare institution create important contextual differences that affect how organizational learning occurs. This perspective is reinforced in other research (Mick & Mark, 2005) that indicates distinguishing work environments and processes at the unit-level, particularly in nursing, may be especially important (Lundmark, 2008).

Not only are there differences between healthcare units, there are differences among professions within healthcare that affect organizational learning. Healthcare practitioners, including physicians and nurses, are educated in role-specific silos. They are taught to preserve the status and standards of their respective professions. As such, they are subtly discouraged from sharing information or incorporating learning system-wide, thereby missing an important opportunity for their organizations to learn. While this role-based approach to education and practice can discourage the systemic approach needed for organizational learning, it also serves to strengthen the cultures of the individual professions on the healthcare teams.
Research indicates that different occupations have different cultures, often based on personality types that pursue certain professions, as well as the educational models for that profession (Schein, 2010). While there are likely exceptions, variations across industries are more common than variations within them (Chatman and Jehn, 1994). Given the cultural consistencies within professions, and the strong cultural boundaries that define them, it is reasonable to consider the unique culture of that profession in reviewing the literature. In this case, the research on perioperative nursing culture was reviewed to determine the state of the science and how cultural artifacts, beliefs and experiences might inform the relationship between leadership and learning.

**Leadership and organizational learning.** The literature is nearly unanimous in its acknowledgement that leaders play a significant role in managing and fostering organizational learning cultures (Bryant, 2003; Berson, Nemanich, Waldman, Galvin, & Keller, 2006; Hayes & Allinson, 1998; Hurley & Hult, 1998; McGill, Slocum, & Lei, 1992; Vera & Crossan, 2004; Garvin, Edmonson & Gino, 2008). The evolution of corporate culture into a learning culture requires leaders who value learning (Barnes, 1999). Research supports the idea that leaders are able to create cultures that encourage authentic dialogue, thereby supporting the feed-forward and feedback processes essential to organizational learning cultures (Mazutis & Slawinski, 2008). Additionally, because of their influence at all levels of the organization, leaders are uniquely positioned to manipulate the processes needed to institutionalize learning, as well as incentivize the next levels of leaders responsible for the associated structures (Lionzo & Rossignoli, 2011). Marsick and Watkins (2003) argue that, in order to foster organizational learning, leaders must acknowledge “it is not enough to hold individuals accountable for learning continuously without also building the organization’s capacity to support, encourage and make
use of that learning” (p. 133). This is further emphasized by Garvin, et al., (2008), whose research demonstrates that leadership alone is not sufficient for creating a learning organization. Leaders must also foster a learning culture and implement learning processes in order to sustain a learning organization.

Strategic leadership, and specifically transformational leadership (Bass, 1985), occupies a notably large place in the leadership and learning literature. Bryant (2003) presents a model that proposes transformational leaders, with charisma and individual consideration, stimulate knowledge creation and sharing at the individual level. Mirkamali, et al., (2011) narrow the focus on transformational leadership further by specifying the effect of idealized influence or charisma organizational learning. Both studies begin with the 4I Model (Crossan, Lane & White, 1999) as the framework for defining organizational learning, although Bryant (2003) adds the knowledge creation model from Nonaka and Takeuchi (1995) in order to present a new model of knowledge management.

However, as Vera and Crossan (2004) note in their theoretical paper on strategic leadership and organizational learning, the natural tendency to favor transformational leadership over transactional leadership is not necessarily supported by the evidence. They claim that given certain contextual factors, transactional leadership can more effectively facilitate organizational learning. They further assert that transformational leaders provide followers the ability to see the opportunities offered by turbulent environments, thereby guiding them through a feed-forward process. Conversely, a stable environment may reject a transformational leader’s charisma as unnecessary, preferring the stability of the status quo. In this case, a transactional leader’s inclination to focus on efficiency and tangible rewards may be more effective. This transactional behavior is better aligned with the needs of feedback learning, which relies on existing
organizational knowledge and systems. Therefore, the researchers argue, organizational learning in turbulent environments is facilitated by transformational leaders, whereas learning in stable environments benefits from transactional leadership (Vera and Crossan, 2004). These studies, coupled with the work on the relationship between leadership and organizational learning in medical and surgical units in hospitals (Popper & Lipshitz, 2000), call into question the perceived effect of transformational leadership on organizational learning in the relatively structured, task-oriented structured nature of perioperative nursing.

The influence of leadership on organizational learning in healthcare and, in particular nursing, has also been widely studied. Leaders are encouraged to create learning cultures in order to support the delivery of safe patient care (Henderson, et al., 2011). Focusing on the adaptability element of organizational learning, Van Bogaert, et al., (2013) claim that “leadership that creates supportive structures for daily professional practice with the capacity to adapt innovations and improvements will promote positive nurse, patent and organizational outcomes” (p. 1675). Henderson, et al., (2011) point out that nursing practice has historically focused on performing patient care tasks at the expense of new learning. They go on to argue leaders should reconfigure systems and practices to equally incorporate learning opportunities.

**Subculture of Perioperative Nursing**

Perioperative nurses care for patients before, during and after surgery. The practice of operating room nursing, as it was originally called, can be traced back to as early as 1880 (McGee, 1991). The Association of PeriOperative Registered Nurses (AORN) was established solely to meet the unique educational and advocacy needs of this profession within nursing.

The culture of nursing is often described in terms of rituals, power and gender (Suominen, Kovasin, & Ketola, 1997). The culture and practice of perioperative nursing is
widely acknowledged as distinct from other nursing specialties. The conceptual model of
nursing is largely based on the relationship between nurse and patient. This conceptual
foundation presents a challenge to the perioperative nurse. Given the anesthetized state of the
patient during much of the care provided by the perioperative nurse, there is not the same
opportunity to establish the interpersonal relationship between a nurse and patient that defines
much of the larger practice of nursing. Absent this relationship, perioperative nursing is left with
a profession characterized as primarily task-oriented (McGee, 1991), leading some to question
whether or not it is even considered nursing (Fernell, 1989). The physical separation of the
operating room, the discipline required to maintain a sterile field, and the multidisciplinary
nature of the surgical team all further distinguish perioperative nursing as a distinct subculture
within the larger practice of surgery and nursing.

Lindwall and von Post (2008) describe the culture of perioperative nursing as having both
material and cultural aspects (p. 671). The strict guidelines that govern the performance of
aseptic technique, preparing and passing instruments, and movement within and outside the
sterile field, often characterized as a dance, all comprise rituals that define the profession. Even
the patient safety perspective is defined differently in perioperative nursing, with the Association
of PeriOperative Registered Nurses (AORN) describing five patient safety subcultures specific to
the practice of surgical nursing: reporting, flexible, just, learning and wary (AORN, 2006).

Yet it is the nature of power relationships, especially those between nurse and surgeon,
and the hierarchal nature of the surgical team that most highly define the perioperative nursing
profession and nursing work environment. Perioperative nurses are often seen as a handmaiden
to the surgeon (Gruendemann, 1970), which has been identified as a contributor to reports that
nurses in perioperative units typically report lower job satisfaction than nurses in other units
(Boyle, et al., 2006). In particular, perioperative nurses report less satisfaction with autonomy, decision-making and nursing leadership (Boyle, et al., 2006), all of which are also factors in the success of organizational learning.

**Summary**

Nursing leadership has been shown to be important in influencing patient outcomes (Wong & Cummings, 2007) and positive work environments (Jackson, et al., 2013). Transformational leadership (Bass, 1985) has been shown to be effective across a variety of industries, including nursing (Mastal, Joshi & Schulke, 2007; Casida, Pinto-Zipp, 2008). Based on its perceived effectiveness and its close conceptual alignment with the culture of the nursing profession, transformational leadership is the theory most widely embraced in nursing. The ANCC Magnet Recognition Program® includes transformational leadership as one element of the model upon which accreditation is awarded.

Organizational learning is equally important in healthcare given the pace of change and the need to adapt to a rapidly shifting environment. Transformational leadership has been shown to be effective in influencing organizational learning (Bryant, 2003; Mirkamali, et al., 2011).

However, despite the widespread research into the effectiveness of transformational leadership in organizational learning and, separately in the profession nursing, a gap in the literature exists related to the relationship between transformational leadership and organizational learning in perioperative nursing. In fact, organizational learning has not been studied widely in nursing, and no studies exist on organizational learning in perioperative nursing. Further, the growing interest in the ANCC Magnet Recognition Program® warrants a better understanding of if or how it moderates any apparent relationship, particularly in the perioperative setting.
While the literature supports a hypothesis that a relationship does exist between transformational learning and organizational learning, nursing, and in particular perioperative nursing, is a unique subculture within healthcare that presents contextual differences that may change the strength or direction of relationship. Utilizing a quantitative survey methodology, this study addressed this gap by measuring the relationship between transformational leadership and organizational learning culture in perioperative nursing. Additionally, the extent to which a hospital’s Magnet status moderates the relationship provided further understanding on how organizational conditions influence the relationship between leadership and learning culture.
Chapter 3

The purpose of this study was to fill a gap in the literature by quantitatively examining the relationship between transformational leadership and organizational learning. Further, this research considered the extent to which a hospital’s Magnet status influenced that relationship. Three (3) research questions guided the development of the five (5) stated hypotheses.

Research Questions

1. Which transformational leadership behaviors significantly predict organizational learning in a perioperative nursing unit?

2. To what extent does a hospital’s Magnet status moderate the relationship between transformational leadership behaviors and organizational learning in a perioperative nursing unit?

3. Does the perception of transformational leadership behaviors and organizational learning culture differ significantly by hospital type (Magnet vs. non-Magnet) among perioperative nurses?

Hypotheses

The independent variable in this study was transformational leadership. The dependent variable was organizational learning culture. A hospital’s Magnet status was proposed to be a moderating variable. Based on the literature and the above research questions, the following hypotheses were proposed.

H1: There is a positive relationship between transformational leadership and organizational learning culture in perioperative nursing units in Magnet hospitals.

H2: There is a positive relationship between transformational leadership and organizational learning culture in perioperative nursing units in non-Magnet hospitals.
H3: The positive relationship between transformational leadership and organizational learning culture will be stronger in perioperative nursing units in Magnet hospitals than in perioperative units in non-Magnet hospitals.

H4: Perioperative staff nurses in Magnet hospitals will perceive their managers to demonstrate a higher degree of transformational leadership than perioperative nurses in non-Magnet hospitals.

H5: Perioperative staff nurses in Magnet hospitals will perceive their organizations to be more reflective of organizational learning cultures than perioperative staff nurses in non-Magnet hospitals.

This chapter provides an overview of the methodology used to conduct this study. Specifically, this chapter will address the following: research design, population and sampling, data collection instruments and procedures, data analysis techniques, reliability, validity, generalizability and protection of human subjects.

Research Design

This study utilized a quantitative, non-experimental, correlational survey design. Quantitative research utilizes systematic methods for data collection and emphasizes numerical or quantified measures of performance or perception. A quantitative design is appropriate in instances when established theories and related hypothesis are to be tested (Antonakis, 2004). Transformational leadership, a key variable in this study, has been widely investigated utilizing quantitative methodologies (Antonakis, 2004). Organizational learning culture has also been measured using quantitative methods. While case studies and focus groups account for some portion of the literature on the dependent variable, quantitative studies using well established
instruments such as those being proposed for this study are growing in the field (Bellot, 2011). For these reasons, this study was well suited to a quantitative design.

**Population and sample.** Research studies using surveys regularly target specific professional groups (Gall, Borg & Gall, 1996). Consistent with this practice, the target population for this study was comprised of perioperative nurses working full-time in hospitals in the United States. The unit of analysis is individual since the study seeks to measure individual perception of leadership behaviors and organizational learning.

Hospitals with better than average organizational and patient outcome measures share certain organizational characteristics (Buchanan, 1999). Strong nursing leadership has been shown to be one of those measures (Lewis & Matthews, 1998). In particular, nurse leaders in highly performing hospitals provide nurses with opportunities for professional development and advancement, which are consistent with characteristics of a culture in which learning is valued (Lewis & Matthews, 1998). Given the central role nurse managers play in establishing hospital culture in highly performing hospitals, their leadership behaviors were highly relevant to the variables in this study. The ability to answer the proposed research question rested on the leadership practices of nurse managers and the culture they aim to develop. Staff nurses, who report to nurse managers and who comprise the largest sector of the nursing workforce, are uniquely positioned to provide the needed perspective for this study. Therefore, the research study sample consisted of the staff nurses who work in perioperative nursing.

This study relied on convenience sampling. Convenience sampling is routinely used in situations when the sample is more readily available to the researcher (Suen, Huang, & Lee, 2014). The researcher had ready access to one of the largest databases of surgical services nurses in the country, Access to this database was provided by the CCI Board of Directors, in
In accordance with CCI policy. The written policy governing access to the database is provided in Appendix A and the process by which access was obtained is described in detail in the section in this chapter on Protection of Human Subjects.

While using convenience sampling for this study was both practical and cost efficient, this strategy was not without its limitations. In convenience sampling, the opportunity to participate in the research is not available to all members of the target population. Therefore, findings from this study are not generalizable outside this sample. However, despite these weaknesses, convenience sampling “can provide useful information for answering questions and hypotheses” (Creswell, 2012, p. 146).

Participants were drawn from the database of board certified perioperative nurses from the Competency & Credentialing Institute (CCI). Nurses in this database hold the CNOR® credential, which indicates the acquisition of knowledge and skills specific to the specialty of perioperative nursing. The CNOR® is not an acronym. It is a professional designation. Nurses who hold the CNOR® have practiced in perioperative nursing for at least two years and have passed a multiple choice, accredited exam. At the time of sampling, there were just fewer than 34,000 board certified nurses active in the CCI database. Since the researcher administered a web-based survey via email distribution, those records with email addresses were included in the sampling frame.

So to summarize, application of five criteria were used to define the population: (1) registered nurses; (2) registered nurses who work in surgical services, (3) registered nurses who work in surgical services and are CNOR®-certified through CCI, (4) registered nurses who work in surgical services, are CNOR®-certified and report holding a title of staff nurse and (5) registered nurses who work in surgical services, are CNOR®-certified, report holding a title of
staff nurse, and who list an email address in the database. This approach enabled a focus on a population of accessible perioperative nurses who can describe their perceptions of those who have been shown to influence organizational culture and performance, e.g. nurse managers. This strategy is visually depicted in Figure 1.

Figure 1. Sampling Frame.

There are approximately 2.8 million registered nurses in the United States (US Department of Health and Human Services, 2013). Of these, approximately 160,000 work in the specialty of perioperative nursing (AORN, 2015). Within the population of perioperative nurses, 33,580 hold the CNOR® credential, and of that group, 21,184 listed a job title of staff nurse (Competency & Credentialing Institute, 2015) and report a current email address. Therefore, after applying this sampling frame, the population for this study consisted of 21,184 nurses.
**Data collection.** Data was collected using a three part survey totaling 57 items. It is provided in Appendix B. It was estimated that the survey took 10-15 minutes to complete. Part one included normative, demographic questions. Part two included 28 items adapted from the Multifactor Leadership Questionnaire (MLQX5) (Avolio & Bass, 1995). Part three included 21 items from the Dimensions of the Learning Organization Questionnaire-Abbreviated (DLOQ-A) (Yang, et al., 2004). The survey instruments and data collection procedures are described below.

**Demographics.** The first section of the survey included six (6) demographic questions including: gender, age, education level, work setting, experience and years in perioperative nursing. These demographic categories are similar to those collected by the National Sample Survey of Registered Nurses (NSSRN), (U.S. DHHS, 2010). The decision to align the demographics in this study with the demographics collected in the NSSRN was based on expert recommendation that demographics of the study sample be compared to the overall target population when non-random sampling such as convenience sampling is used (Sproull, 2002). These variables were analyzed to determine how closely the demographics of the sample aligned with the overall population.

Additionally, participants were asked to indicate the Magnet status of their workplace as part of this demographic section. Not only were participants asked if their workplace has earned the Magnet designation, but were also asked if their workplace is currently pursuing Magnet status. Although only Magnet recognized hospitals were used in the final analysis, asking participants to distinguish their workplaces by Magnet, non-Magnet or in pursuit of Magnet acknowledged studies that show hospitals pursuing Magnet status possess some of the same characteristics and achieve many of the same positive outcomes as hospitals who have earned the designation (Ulrich, Buerhaus, Donelan, Norman, & Dittus, 2007).
Gathering information on the Magnet status of respondents’ employers was critical in being able to measure the mediating effect of Magnet recognition on the relationship between transformational leadership and organizational learning culture. Research suggests that the response rate for demographic items is higher when the questions are placed at the beginning of a survey (Teclaw, Price & Osatuke, 2012). Therefore, given the importance of this demographic question in answering a primary research question in this study, the demographic section was placed first.

**Multifactor Leadership Questionnaire (MLQ).** The Multifactor Leadership Questionnaire (MLQ) (Avolio & Bass, 1995) was used to measure staff nurses’ perceptions of their leaders’ practice of behaviors associated with transformational and transactional leadership. The MLQ (Avolio & Bass, 1995) is a 45-item instrument developed to measure the transformational and transactional constructs of the Full Range Leadership Model (Avolio & Bass, 1995). Using a five-point Likert scale, respondents are asked how often the person being rated demonstrates a particular leadership behavior. The items include such descriptive statements as, “Provides me with assistance in exchange for my efforts,” “Re-examines critical assumptions to question whether they are appropriate,” and “Talks about his/her most important values and beliefs.”

There are two forms of the MLQ. One allows respondents to score a leader at, above or below their own level in the organization. The other is a self-rating tool leaders use to rate their own perceptions of their leadership. This study used the rater form (MLQ5X) to enable staff nurses to describe the leadership behaviors of their nurse managers. Permission to use the MLQ5X was received by its publisher, Mind Garden, Inc. A sample of the questions used in the
survey is provided in Appendix C. (Per the terms of the licensure agreement, only a sample of up
to five questions from the full survey may be republished.)

Twenty items on the MLQ5X address behaviors associated with transformational
leadership, and eight items measure behaviors associated with transactional leadership. The
remaining items address laissez-faire leadership (four items), passive avoidant leadership (four
items) and other general leadership behaviors. This study utilized only the 28 descriptive
statements associated with transformational and transactional leadership.

Repeated tests across industries have confirmed the reliability and validity of the MLQ
5X. It has been demonstrated to be predictive of leadership across cultures and professions. In
particular, the factor structure and internal consistency of the MLQ has been studied in nursing,
which is the population examined in this study (Kanste, et al., 2007). Transformational scales
and contingent reward displayed internal consistencies above 0.80 in previous studies (Lowe,
Kroeck, & Sivasubramaniam, 1996). The results of a comparison of the MLQ 5X to other
models demonstrated a goodness-of-fit of 0.89 (Avolio & Bass, 1995). Over time, the reliability
and validity of the instrument has been widely acknowledged and it has become the primary
instrument used to measure transformational and transactional leadership in various types of
organizations (Avolio & Bass, 1995).

Dimensions of the Learning Organization Questionnaire (DLOQ). The learning
organization culture was measured using an abbreviated version of the Dimensions of the
point Likert scale, respondents were asked to describe their perceptions of how well their
organization supports learning. Items included “In my organization, people take time to support
learning,” and “In my organization people spend time building trust with each other.” The
DLOQ (Watkins & Marsick, 1993; 1996) is the most widely utilized instrument in the study of organizational learning (Yang, 2003), making it the most appropriate choice for this study.

The instrument includes items designed to measure seven dimensions of a learning culture. The seven dimensions of the learning culture are: (a) create continuous learning opportunities, (b) promote inquiry and dialogue, (c) encourage collaboration and team learning, (d) establish systems to capture and share learning, (e) empower people toward a collective vision, (f) connect the organization to its environment, and (g) provide strategic leadership for learning.

While the full instrument includes 45 items, Yang et al. (2004) developed an abbreviated version that includes 21 items. The intent of developing the abbreviated instrument was to make it shorter by including only “those items that most accurately represented the designated dimensions from statistical and substantive viewpoints” (p. 38). Yang et al. (2004) used a “model generating method” (p. 38) to identify items most representative of each of scale and separating those items from the full instrument until an acceptable model was obtained. This resulted in the 21-item Dimensions of the Learning Organization-Abbreviated (DLOQ-A). Reliability for the seven dimensions of the DLOQ-A was supported by Cronbach’s alpha score ranging from 0.68 to 0.93 (Yang, 2003) and an overall reliability estimate of 0.93 (p. 160). This study used the DLOQ-A in order to offer the shortest survey possible within the parameters of acceptable statistical stability. Permission to use the instrument was granted by its co-author, Karen Watkins. A copy of the survey is provided in Appendix D.

**Procedures.** Perioperative staff nurses were contacted via email and provided the following information:

1. Invitation to participate in the survey
2. Purpose of the survey

3. Guarantee of anonymity and confidentiality

4. Statement that participation in the survey was voluntary

5. Instructions on how to complete the survey.

6. The estimated time to complete the survey.

7. Directions on how to conduct the researcher.

8. A link to the actual Survey Gizmo survey.

The message clearly stated that the researcher is a Northeastern doctoral student. In no way was the researcher’s professional role, title or affiliation with CCI mentioned or implied. The message was sent from the researcher’s Northeastern email account. Procedures for data collection were administered based on the guarantee of anonymity and confidentiality of respondent information. The complete message is provided in Appendix E.

As noted, data collection was performed via a web-based survey. The distribution of the survey and follow-up email message was performed by an employee of CCI who possesses the expertise necessary to use the survey software in concert with the CCI database.

Web-based surveys offer a positive alternative to the higher-cost associated with traditional paper-and-pencil based surveys, particularly in large samples such as the one used in this study (Van Gelder, Breveld & Roeleveld, 2010). However, electronic distribution is not without limitations, mainly related to sampling and non-response bias, as well as the risk of non-delivery due to many email spam filters. Additionally, email surveys are only accessible by those with ready access to computer, and therefore “are usually unrepresentative of the general population of health professionals even within a certain healthcare specialty” (Braithwaite, Emery, de Lusignan & Sutton, 2003, p. 550).
Generating the highest possible response rate helps mitigate these weaknesses related to electronic distribution of surveys. In their meta-analysis of response rates in web-based surveys, Cook, Heath & Thompson (2000) suggest that “the number of contacts, personalized contacts, and pre-contacts are the factors most associated with higher response rates” (p. 821). This design for this study included all of these steps. The design included multiple contacts, including an initial email contact and a follow-up fourteen days after the initial contact to non-respondents. Additionally, the introductory email was personalized to the recipients’ first-name, thereby increasing the personalization Cook, et al. (2000) recommends.

The survey was administered using SurveyGizmo, an online survey builder and distribution platform. The software allowed respondents to complete the survey in multiple sittings if needed. SurveyGizmo’s responsive design capabilities enable delivery to and response from many different types of devices—from PCs, Macs, tablets, and smart phones. This minimized the exclusion of any group based on their particular technology. Additionally, SurveyGizmo offers a campaign platform, designed to mitigate the non-delivery risk associated with spam filters.

Data analysis. This section of the chapter addresses the key steps in data analysis. All data were analyzed using Stata version 14, with the technical support of Dr. Bonnie Lind, a qualified and experienced statistician. Dr. Lind’s role in the study, along with a description of her relevant education and experience, was disclosed in the IRB application, and her participation was approved.

The steps in data analysis included: preparing the data, determining the appropriate statistical tests to be used, ensuring validity and reliability of the research design and results, and acknowledging the generalizability of the findings. These steps are described below.
Data preparation. The importance of cleaning data is widely acknowledged (Creswell, 2012). In simple terms, cleaning data is a series of steps in which errors and/or missing data is identified. Data collected in this study was cleaned by a combination of visual inspection and descriptive statistics. Visual inspection of means, maximum values, and minimum values was used to identify responses or patterns of responses that clearly fell outside the range offered (e.g. a respondent provides a score of 7 on a scale of 1-6). Additionally, frequency processes were performed in order to identify missing data or variables that were miscoded. These steps are consistent with those recommended by Creswell (2012) for cleaning the data.

To prepare the data for analysis, composite variables were created for each of the instrument subscales and the overall score. Central tendency and spread processes were performed in an effort to determine the appropriateness of the categorized variables. Factor analysis and Cronbach’s alpha testing were performed to ensure the composite variable sub scales were valid and reliable. Additionally, rank order categories were not collapsed into a smaller number. This reflects the recommendation of Labovitz (1970) who says that “the greater the number of ranks the greater the stability and confidence in the assigned scoring system” (p. 520).

Statistical technique. This correlation study aimed to examine the relationship between two variables, and further describe whether or not the mediating variable of Magnet recognition influenced the relationship. Although participants were asked whether their institution was pursuing Magnet recognition, that information was not included in the final analysis. Although there is some evidence that hospitals pursuing Magnet recognition embody some of the same characteristics as Magnet facilities, the research question and hypotheses posed in this study only distinguish Magnet from non-Magnet facilities.
Research questions 1 and 2 were answered using linear regression. Research question 3 employed a one-way ANOVA. The results of these statistical and all statistical tests are described in Chapter 4.

Multiple regression is an extension of simple regression. It was used in this research to determine the predictive ability of transformational leadership on the dimensions of the learning organization. In simple regression analysis, variances in the dependent variable are explained by variances in the independent variable. Multiple regression extends the capabilities of simple regression by supporting examination of “the combined relationship of multiple variables” (Creswell, 2012, pg. 350). This test not only enabled an understanding of how the independent and mediating variables work in concert with each other to influence the dependent variable, it can also isolate and measure which, if any, of the independent variables is the stronger predictor of the dependent variable.

Regression coefficients for each variable were calculated and reported using a regression table. The overall variance between the dependent variable and the independent variables were described by the $R^2$ (R squared) statistic. Beta findings described the extent to which each independent variable predicted the dependent variable. Both the $R^2$ and beta are reported in the regression table. These data illustrate the strength of the relationship between each independent variable and the dependent variables.

Validity, reliability and generalizability. Validity measures whether the selected instrument measures what it intends to measure. The validity of the selected instruments has been demonstrated in numerous previous studies, and the details on the instrument validity are provided in the instrument section of this proposal. Validity also refers to the processes
undertaken to ensure the validity of the research design and the findings generated from the data analysis processes.

In this case, the research design was supported by linear regression analysis. Muijs (2011) describes two primary conditions for the use of regression analysis: (1) the relationship between the independent and dependent variables must be linear, and (2) the independent variables must not be too closely related to each other (p. 153). Scatter plots and histograms were used to inspect for normal distributions and linearity of relationship, and correlations among the independent variables were performed to identify collinearity. Together these diagnostic tests maximized validity of the selected statistical technique.

Reliability measures consistency of results. An inherent challenge in survey research is the potential for measurement error. Each variable was measured by multiple questions in order to provide the redundancy necessary to mitigate potential measurement error and maximize reliability of findings.

Generalizability refers to the extent to which the findings from one study can be applied to a larger or different population. As noted in the sampling section, this study relies on convenience sampling, which is valid, but brings with it certain limitations with regard to generalizability. The database from which the sample was drawn is large and national in scope. However, they do not include all surgical nurses in the country. They include only those that are board certified surgical nurses. It can be argued that this population represents more highly engaged professionals. Therefore, the findings from this study are not generalizable outside this sample and the ability to apply these findings to the entire profession of perioperative nurses is limited.
Protection of Human Subjects

In accordance with established Northeastern University regulations and to ensure the protection of participants in the study, the approval of the Institutional Review Board (IRB) was sought and received. The stamped documents are provided in Appendix F. An informed consent form was developed, guaranteeing participants certain rights and clarifying their participation was voluntary. A similar statement of rights was included with the survey when distributed (see Appendix G).

Additionally, CCI is governed by a board of directors. Requests for access to their database are reviewed and approved by staff in accordance with organizational policy. In this case, the research request came from the Chief Executive Officer (CEO) of the organization. Given that the staff person responsible for reviewing research requests reports to the CEO, it could be perceived that the CEO has undue influence in the approval process. Therefore, in order to minimize that perception, the proposal was made directly to the CCI board of directors.

Consistent with recommendations provided by Creswell (2012), CCI policy requires any requests for access to their database include a summary of the study, significance of the study to perioperative nursing, the proposed methods and instruments to be utilized, the data management and analysis methods, the limitations of the study and any ethical considerations. These items were presented to the CCI board of directors at their meeting on August 1, 2015. They approved this request and their decision was recorded in the meeting minutes and kept in accordance with the organization’s document retention policy. The final approval letter is provided in Appendix H.

Anonymity was protected by using a numerical process to code survey responses. Data was only provided in the aggregate. Also, to ensure total transparency in the process, it is noted
that the researcher is a paid staff member, employed by CCI. However, the researcher is not a member of the nursing profession and therefore is not a member of the population being surveyed. Further, the researcher had no direct knowledge of individual responses.
Chapter 4

The purpose of this study was to explore the relationship between transformational leadership and organizational learning culture in Magnet and non-Magnet hospitals. This chapter describes the results of descriptive and inferential statistics used to answer the defined research questions and test the posited hypotheses. This section leads with an overview of the descriptive statistics used to describe the research sample as well as a description of the measures of central tendency for the variables. This is followed by an overview of the Cronbach’s alpha findings, used to describe the internal reliability of the survey instruments, and a correlation analysis of the subscales of the instrument used to measure the independent variable in this study, to measure whether the subscales were actually independent. This chapter then follows with an overview of the results of the inferential statistics used to address the research questions and each of the five hypotheses. Multiple regression was used to address hypotheses 1 to 3 and one-way ANOVA was used to address hypotheses 4 and 5.

Descriptive Statistics

The descriptive statistics used in this study are described in this section. These findings illustrate the demographic composition of the population that participated in the study, and as well as describe the reliability and validity of the research instruments used.

Sample overview and demographics. The population of this study consisted of board certified perioperative nurses who work in a staff nurse role in hospitals or ambulatory surgery centers. The population consisted of 21,184 individuals. The participants were drawn from the database of board certified perioperative nurses from the Competency & Credentialing Institute (CCI). Nurses in this database hold the CNOR® credential, which indicates the acquisition of knowledge and skills specific to the specialty of perioperative nursing.
The survey resulted in 1,256 responses, representing a response rate of 5.9%. Of these, 1,060 had valid responses to all questions on the MLQ-5X, another 77 answered all but one or two questions, and the rest left three or more questions blank. For the DLOQ-A, 1,028 respondents had valid responses to all questions, 98 answered all but one or two questions, and the rest left three or more questions blank. In order to maximize the sample size, respondents who answered all but one or two questions were included by imputing the responses to the one or two missing questions. The value imputed was the mean of the answered questions (See Table 1). Analysis showed that including the additional responses did not bias the results, but gave narrower confidence intervals in the regression analysis.

Table 1

<table>
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<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Median</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLQ-5X 0 Item Missing</td>
<td>1060</td>
<td>39.2</td>
<td>21</td>
<td>39</td>
<td>0</td>
<td>80</td>
</tr>
<tr>
<td>MLQ-5X 1 Item Missing</td>
<td>1123</td>
<td>38.9</td>
<td>21.1</td>
<td>39</td>
<td>0</td>
<td>80</td>
</tr>
<tr>
<td>MLQ-5X 2 Items Missing</td>
<td>1137</td>
<td>38.9</td>
<td>21.1</td>
<td>39</td>
<td>0</td>
<td>80</td>
</tr>
<tr>
<td>DLOQ 0 Items Missing</td>
<td>1028</td>
<td>65.6</td>
<td>25.7</td>
<td>64</td>
<td>21</td>
<td>126</td>
</tr>
<tr>
<td>DLOQ 1 Item Missing</td>
<td>1111</td>
<td>66.1</td>
<td>25.9</td>
<td>64</td>
<td>21</td>
<td>126</td>
</tr>
<tr>
<td>DLOQ 2 Items Missing</td>
<td>1126</td>
<td>66.2</td>
<td>26.0</td>
<td>64</td>
<td>21</td>
<td>126</td>
</tr>
</tbody>
</table>

After imputation, there were 1,121 respondents with complete data on both scales to include in the analysis, resulting in a response rate of 5.3%. However, a few of these respondents had not answered all demographic questions, leading to a slightly smaller sample size for the regression analysis.

Facility characteristics. Table 2 describes the characteristics of the facilities in which respondents work, including the following: (1) whether or not the facility has Magnet
designation, (2) the size of the facility (described in terms of the number of operating rooms), and the classification of the facility. Of the total responses, 35.5% reported the facility in which they were employed had earned the Magnet designation, 19.4% were pursuing Magnet recognition, and 39.3% did not work in Magnet recognized facilities.

The size of the facilities employing the respondents was spread across the range, with the highest number of respondents (26.9%) reporting working in facilities with more than 20 operating rooms and the lowest number (11.9%) reporting working in facilities with 16-20 operating rooms. The majority of respondents (22.4%) worked in major teaching hospitals, and the fewest (9.3%) worked in small community hospitals.

Table 2
Facility Characteristics

<table>
<thead>
<tr>
<th>Facility Characteristics</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Magnet</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>399</td>
<td>35.54</td>
</tr>
<tr>
<td>Pursuing</td>
<td>219</td>
<td>19.43</td>
</tr>
<tr>
<td>No</td>
<td>439</td>
<td>39.3</td>
</tr>
<tr>
<td>Unknown</td>
<td>64</td>
<td>5.73</td>
</tr>
<tr>
<td>Total</td>
<td>1,121</td>
<td>100</td>
</tr>
<tr>
<td><strong>Facility Type</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambulatory surgery center</td>
<td>119</td>
<td>10.66</td>
</tr>
<tr>
<td>Major teaching hospital</td>
<td>251</td>
<td>22.49</td>
</tr>
<tr>
<td>Medium community hospital</td>
<td>327</td>
<td>29.3</td>
</tr>
<tr>
<td>Small community hospital</td>
<td>104</td>
<td>9.32</td>
</tr>
<tr>
<td>Military, rural, other</td>
<td>141</td>
<td>12.63</td>
</tr>
<tr>
<td>Teaching hospital</td>
<td>174</td>
<td>15.59</td>
</tr>
<tr>
<td>Total</td>
<td>1,116</td>
<td>100</td>
</tr>
</tbody>
</table>
Number of Operating Rooms

<table>
<thead>
<tr>
<th>Number of Operating Rooms</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 5</td>
<td>210</td>
<td>18.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 to 10</td>
<td>291</td>
<td>26.05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 to 15</td>
<td>175</td>
<td>15.67</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16-20</td>
<td>133</td>
<td>11.91</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than 20</td>
<td>301</td>
<td>26.95</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td>7</td>
<td>0.63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1,117</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Age, experience and education. Table 3 describes the demographic characteristics of the individuals responding to the survey, including age, professional experience, and educational level. In general, the mean age, years of experience, and education in the sample is reflective of the mean averages for the overall population of perioperative nurses. The mean age of respondents was 50.6 years, and average experience in perioperative nursing was 20.3 years. Additionally, the majority of respondents reported educational preparation of a bachelor’s degree or higher, with 53.5% reporting having a bachelor’s degree and 11.5% reporting having a graduate degree. This is a similar profile to the overall population of board-certified perioperative staff nurses, which is, on average, 51 years old, bachelor’s prepared (53%), and having 18 years’ experience as a perioperative nurse.

Table 3

Individual Respondent Demographic Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>1,078</td>
<td>50.69</td>
<td>10.67</td>
<td>25</td>
<td>80</td>
</tr>
<tr>
<td>Years of Perioperative Experience</td>
<td>1,090</td>
<td>20.36</td>
<td>11.60</td>
<td>2</td>
<td>52</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associates Degree or Diploma</td>
<td>388</td>
<td>34.86</td>
</tr>
<tr>
<td>Bachelor’s Degree</td>
<td>596</td>
<td>53.55</td>
</tr>
<tr>
<td>Master’s Degree</td>
<td>129</td>
<td>11.59</td>
</tr>
<tr>
<td>Total</td>
<td>1,113</td>
<td>100</td>
</tr>
</tbody>
</table>
Descriptive analyses of major instruments. The descriptive analyses also included a calculation of the median and standard deviation for each of the instrument’s subscales, as well as the overall scores for each instrument. The results of this analysis are presented in Table 4 below.

Table 4

Scale and Subscale Mean and SD

<table>
<thead>
<tr>
<th>Scale and Subscale</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Med</th>
<th>Max</th>
<th>Min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multifactor Leadership Questionnaire (MLQ-5X)</td>
<td>1121</td>
<td>39.08</td>
<td>21.23</td>
<td>39</td>
<td>80</td>
<td>0</td>
</tr>
<tr>
<td>Idealized Influence – Attributed Subscale (IIA)</td>
<td>1109</td>
<td>8.33</td>
<td>4.71</td>
<td>8</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>Idealized Influence – Behavior Subscale (IIB)</td>
<td>1099</td>
<td>7.79</td>
<td>4.40</td>
<td>8</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>Inspirational Motivation Subscale (IM)</td>
<td>1101</td>
<td>8.58</td>
<td>4.59</td>
<td>9</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>Intellectual Stimulation Subscale (IS)</td>
<td>1105</td>
<td>7.26</td>
<td>4.37</td>
<td>7</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>Individualized Consideration (IC)</td>
<td>1108</td>
<td>7.15</td>
<td>4.60</td>
<td>7</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>Dimensions of Learning Organization Questionnaire (DLOQ-A)</td>
<td>1121</td>
<td>66.21</td>
<td>26.04</td>
<td>65</td>
<td>126</td>
<td>21</td>
</tr>
<tr>
<td>Create continuous learning opportunities</td>
<td>1025</td>
<td>10.54</td>
<td>3.98</td>
<td>10</td>
<td>18</td>
<td>3</td>
</tr>
<tr>
<td>Promote inquiry and dialogue</td>
<td>1025</td>
<td>9.33</td>
<td>3.85</td>
<td>9</td>
<td>18</td>
<td>3</td>
</tr>
<tr>
<td>Encourage collaboration and team learning</td>
<td>1025</td>
<td>8.83</td>
<td>3.98</td>
<td>9</td>
<td>18</td>
<td>3</td>
</tr>
<tr>
<td>Create systems to capture and share learning</td>
<td>1025</td>
<td>9.43</td>
<td>4.09</td>
<td>9</td>
<td>18</td>
<td>3</td>
</tr>
<tr>
<td>Empower people toward a collective vision</td>
<td>1025</td>
<td>8.41</td>
<td>4.06</td>
<td>8</td>
<td>18</td>
<td>3</td>
</tr>
<tr>
<td>Connect the organization to its environment</td>
<td>1025</td>
<td>9.46</td>
<td>4.06</td>
<td>9</td>
<td>18</td>
<td>3</td>
</tr>
<tr>
<td>Provide strategic leadership for learning</td>
<td>1025</td>
<td>9.56</td>
<td>4.37</td>
<td>9</td>
<td>18</td>
<td>3</td>
</tr>
</tbody>
</table>

These results show that subscale scores within transformational leadership were relatively similar, with the lowest average score (7.15) being in individualized consideration and the highest average score (8.58) being in intellectual motivation. Results for learning culture were also relatively consistent across the subscales, with creating continuous learning opportunities receiving the highest average score (10.54) and empowering people toward a collective vision...
receiving the lowest score (8.41). The standard deviations were similar between the instruments, with a standard deviation for transformational leadership ($SD = 21.23$) being slightly lower than the standard deviation for learning culture ($SD = 26.04$). As shown in Table 5 below, subscale correlations for the MLQ-5X show that the subscales of transformational leadership were highly correlated, meaning that all of the subscales are measuring closely interrelated characteristics such that they cannot be analyzed independently.

Table 5

**MLQ5X Subscale Correlations**

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Idealized Influence – Attributed (IIA)</th>
<th>Idealized Influence – Behavior (IIB)</th>
<th>Intellectual Motivation (IM)</th>
<th>Intellectual Stimulation (IS)</th>
<th>Individual Consideration (IC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idealized Influence – Attributed (IIA)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Idealized Influence – Behavior (IIB)</td>
<td>0.8327</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intellectual Motivation (IM)</td>
<td>0.8546</td>
<td>0.8601</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intellectual Stimulation (IS)</td>
<td>0.8531</td>
<td>0.8508</td>
<td>0.8322</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Individual Consideration (IC)</td>
<td>0.863</td>
<td>0.8064</td>
<td>0.7834</td>
<td>0.8696</td>
<td>1</td>
</tr>
</tbody>
</table>

Histograms of the MLQ5X total score and of the DLOQ-A total score showed that they were roughly normally distributed, and a scatter plot of the two scales showed that the relationship between them was linear. The scatter plot diagram labeled Table 6 on the following page provides a visual depiction of these results.
Table 6

*Scatter plot of DLOQ-A and MLQ5X*

**Internal reliability of instruments.** Internal reliability refers to the extent to which an instrument measures the variables as intended (Creswell, 2008). This refers to not only an analysis of the instruments, but also the subscales within each domain. Cronbach’s alpha was used in this case to measure internal reliability. Table 7 on the following page illustrates each instrument, the number of items for each instrument, and the Cronbach’s alpha score for each item.
Table 7

Cronbach’s Alpha Scores for Scales and Subscales

<table>
<thead>
<tr>
<th>Scale</th>
<th>N of items</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multifactor Leadership Questionnaire (MLQ-5X)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Idealized Influence – Attributed Subscale (IIA)</td>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>Idealized Influence – Behavior Subscale (IIB)</td>
<td>4</td>
<td>0.86</td>
</tr>
<tr>
<td>Intellectual Motivation Subscale (IM)</td>
<td>4</td>
<td>0.92</td>
</tr>
<tr>
<td>Intellectual Stimulation Subscale (IS)</td>
<td>4</td>
<td>0.89</td>
</tr>
<tr>
<td>Individual Consideration Subscale (IC)</td>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>MLQ total</td>
<td>20</td>
<td>0.97</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimensions of Learning Organization Questionnaire Abbreviated (DLOQ-A)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Create continuous learning opportunities</td>
<td>3</td>
<td>0.87</td>
</tr>
<tr>
<td>Promote inquiry and dialogue</td>
<td>3</td>
<td>0.89</td>
</tr>
<tr>
<td>Encourage collaboration and team learning</td>
<td>3</td>
<td>0.92</td>
</tr>
<tr>
<td>Create systems to capture and share learning</td>
<td>3</td>
<td>0.86</td>
</tr>
<tr>
<td>Empower people toward a collective vision</td>
<td>3</td>
<td>0.9</td>
</tr>
<tr>
<td>Connect the organization to its environment</td>
<td>3</td>
<td>0.89</td>
</tr>
<tr>
<td>Provide strategic leadership for learning</td>
<td>3</td>
<td>0.92</td>
</tr>
<tr>
<td>DLOQ-A Total</td>
<td>21</td>
<td>0.98</td>
</tr>
</tbody>
</table>

**MLQ5X.** The MLQ5X has been used to measure transformational leadership in hundreds of studies across multiple professions around the world. As a result, its internal reliability has been widely measured and reported. Avolio, Bass, and Zhu (2004) report internal reliability scores ranging 0.74 to 0.94. This study found similar results, with scores ranging from 0.86 to 0.92. Cronbach’s alpha score for twenty items that were intended to measure transformational leadership was 0.97, exceeding the minimum threshold of 0.70 suggested in the literature (Muijs, 2011).

However, in this study, correlation analysis revealed a high correlation of 0.8 between the subscales in the MLQ5X (Table 8). Because of this collinearity, the regression analysis could
not determine the independent contribution of each subscale to the relationship with learning culture.

Table 8

Correlations of Subscales Showing Collinearity

<table>
<thead>
<tr>
<th></th>
<th>Idealized Influence – Attributed (IIA)</th>
<th>Idealized Influence – Behavior (IIB)</th>
<th>Intellectual Motivation (IM)</th>
<th>Intellectual Stimulation (IS)</th>
<th>Individual Consideration (IC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idealized Influence</td>
<td>1</td>
<td>0.8323</td>
<td>0.8558</td>
<td>0.8563</td>
<td>0.8389</td>
</tr>
<tr>
<td>– Attributed (IIA)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Idealized Influence</td>
<td></td>
<td></td>
<td>1</td>
<td>0.8506</td>
<td>0.8984</td>
</tr>
<tr>
<td>– Behavior (IIB)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.8181</td>
</tr>
<tr>
<td>Intellectual Motivation (IM)</td>
<td>0.8558</td>
<td></td>
<td>1</td>
<td>0.832</td>
<td>0.786</td>
</tr>
<tr>
<td>Intellectual Stimulation (IS)</td>
<td>0.8563</td>
<td>0.8506</td>
<td>0.832</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Individual Consideration (IC)</td>
<td>0.8389</td>
<td>0.8181</td>
<td>0.8984</td>
<td>0.786</td>
<td>1</td>
</tr>
</tbody>
</table>

Further, the factor analysis on the following page (Table 9) showed that all 20 questions in the instrument loaded onto Factor 1. Only one factor had an eigenvalue greater than 1, which is the recommended threshold for determining the number of factors to include (Mertler & Vannatta, 2001). Collectively, this demonstrates a lack of discriminant validity between the subscales necessary to determine which aspects of transformational leadership are more or less predictive of organizational learning. This is not an altogether unusual finding. In fact, Bycio et al. (1995) cited reservations about their findings using the MLQ5X, reporting “the transformational factors were highly correlated, and more importantly, they generally did not have strong differential relationship with the outcome variables” (p. 474).
Table 9

Factor Loading

<table>
<thead>
<tr>
<th>Variable</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Uniqueness</th>
</tr>
</thead>
<tbody>
<tr>
<td>q2</td>
<td>0.7352</td>
<td>-0.0381</td>
<td>0.0251</td>
<td>0.4574</td>
</tr>
<tr>
<td>q4</td>
<td>0.5821</td>
<td>0.1887</td>
<td>0.0819</td>
<td>0.6188</td>
</tr>
<tr>
<td>q5</td>
<td>0.8304</td>
<td>-0.051</td>
<td>-0.1047</td>
<td>0.2968</td>
</tr>
<tr>
<td>q6</td>
<td>0.7764</td>
<td>0.2045</td>
<td>-0.1899</td>
<td>0.3193</td>
</tr>
<tr>
<td>q7</td>
<td>0.866</td>
<td>-0.0341</td>
<td>-0.0625</td>
<td>0.2449</td>
</tr>
<tr>
<td>q9</td>
<td>0.8355</td>
<td>0.2188</td>
<td>-0.1129</td>
<td>0.2413</td>
</tr>
<tr>
<td>q10</td>
<td>0.8343</td>
<td>0.2094</td>
<td>0.0544</td>
<td>0.2571</td>
</tr>
<tr>
<td>q11</td>
<td>0.8142</td>
<td>-0.008</td>
<td>0.0649</td>
<td>0.3327</td>
</tr>
<tr>
<td>q13</td>
<td>0.8519</td>
<td>-0.2227</td>
<td>-0.1524</td>
<td>0.2014</td>
</tr>
<tr>
<td>q14</td>
<td>0.8121</td>
<td>-0.3546</td>
<td>-0.1037</td>
<td>0.204</td>
</tr>
<tr>
<td>q15</td>
<td>0.8836</td>
<td>-0.2051</td>
<td>-0.1588</td>
<td>0.1519</td>
</tr>
<tr>
<td>q17</td>
<td>0.7985</td>
<td>-0.0998</td>
<td>-0.0931</td>
<td>0.3437</td>
</tr>
<tr>
<td>q19</td>
<td>0.5195</td>
<td>0.2476</td>
<td>0.0455</td>
<td>0.6667</td>
</tr>
<tr>
<td>q20</td>
<td>0.8467</td>
<td>0.2331</td>
<td>-0.0307</td>
<td>0.2279</td>
</tr>
<tr>
<td>q22</td>
<td>0.5717</td>
<td>-0.1834</td>
<td>0.2009</td>
<td>0.5992</td>
</tr>
<tr>
<td>q23</td>
<td>0.8326</td>
<td>-0.0719</td>
<td>0.2148</td>
<td>0.2555</td>
</tr>
<tr>
<td>q24</td>
<td>0.8641</td>
<td>-0.1391</td>
<td>0.19</td>
<td>0.1979</td>
</tr>
<tr>
<td>q25</td>
<td>0.8333</td>
<td>-0.0294</td>
<td>0.2536</td>
<td>0.2404</td>
</tr>
<tr>
<td>q26</td>
<td>0.8266</td>
<td>0.1386</td>
<td>0.075</td>
<td>0.2919</td>
</tr>
<tr>
<td>q28</td>
<td>0.8373</td>
<td>0.1048</td>
<td>-0.0975</td>
<td>0.2784</td>
</tr>
</tbody>
</table>

DLOQ-A

More than 200 companies have used the DLOQ-A to diagnose and measure change in their learning practices and cultures (Marsick & Watkins, 2003). A meta-analysis of the data from 7,954 responses from 28 companies in five countries resulted in a Cronbach’s alpha of 0.97, well above the standard for reliability of >0.80 (Nunnally, 1978). As noted in Table 7, Cronbach’s alpha scores in this study showed similar results, with scores ranging 0.86 to 0.92, and an overall score of 0.98.
Inferential Statistics

Inferential statistics, specifically linear regression and ANOVA tests, were performed to determine whether or not the stated hypotheses were supported. The section outlines each of the five (5) hypotheses in order, directly followed by the corresponding table illustrating the relationship between the variables.

**Hypothesis 1.** This is the first of two hypotheses that address the relationship between transformational leadership and organizational learning culture. More specifically, this hypothesis predicted a positive relationship between the variables in hospitals that had achieved Magnet recognition. The hypothesis stated the following:

H1: There is a positive relationship between transformational leadership and organizational learning culture in perioperative nursing units in Magnet hospitals.

A linear regression model was constructed including only respondents from Magnet hospitals (n = 399), which showed that after adjusting for hospital and demographic factors (Magnet status, type of hospital, hospital size, education of respondent, and years of perioperative experience), total scores for transformational leadership had a statistically significant positive relationship with total scores for organizational learning culture (Beta coefficient = 0.83, $R^2 = 0.498\%$, $p$ value < 0.001) (Table 10). These results suggest that the null hypotheses should be rejected for hypothesis 1, and that transformational leadership has a statistically significant positive correlation with organizational learning culture in perioperative nursing units in ANCC Magnet-recognized hospitals.
Table 10

Correlation of Transformational Leadership and Organizational Learning Culture in Magnet Hospitals (n=399, $R^2 = 0.498$)

|          | Beta Coef. | Std. Err. | T     | P>|t|  | 95% Conf. Interval |
|----------|------------|-----------|-------|-----|------------------|
| MLQ-5X   | 0.83       | 0.04      | 19.62 | < 0.001 | 0.75 | 0.92 |

Adjusted for hospital characteristics and respondent education and experience

**Hypothesis 2.** The second hypothesis also posited a relationship between transformational leadership and organizational learning culture. However, it differed from the first hypothesis in that it theorized there would be a relationship between the variables even in hospitals without Magnet status. The hypothesis stated the following:

H2: There is a positive relationship between transformational leadership and organizational learning culture in perioperative nursing units in non-Magnet hospitals.

A linear regression model was constructed including only respondents from non-Magnet hospitals (n = 438), which showed that after adjusting for hospital and demographic factors (magnet status, type of hospital, hospital size, education of respondent, and years of perioperative experience), total scores for transformational leadership had a statistically significant positive relationship with total scores for organizational learning culture (Beta coefficient = 0.91, $R^2 = 0.547$, $p$ value <0.001) (Table 11). These results suggest that the null hypotheses should also be rejected for hypothesis 2, and that transformational leadership has a statistically significant positive correlation with organizational learning culture in perioperative nursing units in non-Magnet hospitals.
Table 11

*Correlation of Transformational Leadership and Organizational Learning Culture in Non-Magnet Hospital (n=438; $R^2 = 0.547$)*

<table>
<thead>
<tr>
<th></th>
<th>Beta Coef.</th>
<th>Std. Err.</th>
<th>T</th>
<th>P&gt;t</th>
<th>95% Conf. Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLQ-5X</td>
<td>0.91</td>
<td>0.04</td>
<td>21.97</td>
<td>&lt; 0.001</td>
<td>0.83 - 0.99</td>
</tr>
</tbody>
</table>

Adjusted for hospital characteristics and respondent education and experience.

**Hypothesis 3.** The first two hypotheses projected that a relationship would exist between the variables. With that established, the third hypothesis suggested that the strength and relationship between the variables would be stronger in Magnet hospitals than in non-Magnet hospitals. The hypothesis read:

**H3:** The positive relationship between transformational leadership and organizational learning culture will be stronger in perioperative nursing units in Magnet hospitals than in perioperative units in non-Magnet hospitals.

A linear regression was constructed which included an interaction term between Magnet status and MLQ5X total score. The interaction term was not significant, with $p = 0.19$. Based on these findings, the null hypothesis is supported, since Magnet does not have the interactive effect on the variables that were hypothesized (see Table 12).
Table 12

*Interaction between Magnet and Transformational Leadership*

<table>
<thead>
<tr>
<th>DLOQ-A</th>
<th>Coef.</th>
<th>Std. Err.</th>
<th>T</th>
<th>P&gt;t</th>
<th>[95% Conf. Interval]</th>
</tr>
</thead>
</table>
| Magnet hospital         | 10.80 | 2.42      | 4.47  | < 0.001 | 6.06  
|                         |       |           |       |      | 15.54               |
| MLQ total score         | 0.91  | 0.04      | 22.46 | < 0.001 | 0.83  
|                         |       |           |       |      | 0.99                |
| Magnet X MLQ interaction| -0.08 | 0.06      | -1.32 | 0.188 | -0.19  
|                         |       |           |       |      | 0.04                |

Education: compared to ADRN or diploma. Hospital type: compared to teaching hospital

**Hypothesis 4.** The fourth hypothesis focused on whether staff nurses’ perceptions of their leaders were different in Magnet hospitals. More specifically, it projected that perioperative staff nurses in Magnet hospitals would perceive their leaders as more transformational. The hypothesis stated:

**H4:** Perioperative staff nurses in Magnet hospitals will perceive their managers to demonstrate a higher degree of transformational leadership than perioperative nurses in non-Magnet hospitals.

An analysis was performed comparing the demographic variables between respondents from Magnet and non-Magnet hospitals in order to determine the most appropriate statistical test. Those from hospitals pursuing Magnet status or where Magnet status was unknown were excluded from this analysis. The analysis found that there were no differences between Magnet and non-Magnet responses in age or years as a perioperative nurse, but there were differences in hospital characteristics. As illustrated in Tables 13 and 14 on the following page, Magnet hospitals were more likely to be in the largest category with more than 20 operating rooms, and they were more likely to be teaching hospitals.
Table 13

Size of Magnet hospitals (described by number of operating rooms)

<table>
<thead>
<tr>
<th># of ORs</th>
<th>Magnet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>1 to 5</td>
<td>N 144</td>
</tr>
<tr>
<td></td>
<td>% 32.8</td>
</tr>
<tr>
<td>6 to 10</td>
<td>N 133</td>
</tr>
<tr>
<td></td>
<td>% 30.3</td>
</tr>
<tr>
<td>11 to 15</td>
<td>N 74</td>
</tr>
<tr>
<td></td>
<td>% 16.86</td>
</tr>
<tr>
<td>16-20</td>
<td>N 42</td>
</tr>
<tr>
<td></td>
<td>% 9.57</td>
</tr>
<tr>
<td>More than 20</td>
<td>N 42</td>
</tr>
<tr>
<td>Not applicable</td>
<td>N 4</td>
</tr>
<tr>
<td></td>
<td>% 9.57</td>
</tr>
<tr>
<td>Total</td>
<td>N 439</td>
</tr>
<tr>
<td></td>
<td>% 100</td>
</tr>
</tbody>
</table>

Those in Magnet hospitals were significantly more likely to work in larger hospitals than those in non-Magnet hospitals. (p < 0.001). Non-Magnet respondents working in hospitals with five (5) or fewer operating rooms represented 32.8% of the overall sample, compared to 6.3% of Magnet respondents who reported working in hospitals of that size. Conversely, 9.57% of those in non-Magnet hospitals worked in hospitals with > 20 operating rooms, compared to 48.61% of Magnet respondents who worked in hospitals of that size.
Table 14

Category of Magnet hospitals

<table>
<thead>
<tr>
<th>HOSPITAL CATEGORY</th>
<th>Magnet</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
<td>Total</td>
</tr>
<tr>
<td>Teaching</td>
<td>85</td>
<td>231</td>
<td>316</td>
</tr>
<tr>
<td>%</td>
<td>19.36%</td>
<td>58.19%</td>
<td>37.8%</td>
</tr>
<tr>
<td>Community</td>
<td>219</td>
<td>95</td>
<td>314</td>
</tr>
<tr>
<td>%</td>
<td>49.89%</td>
<td>23.93%</td>
<td>37.56%</td>
</tr>
<tr>
<td>Other</td>
<td>135</td>
<td>71</td>
<td>206</td>
</tr>
<tr>
<td>%</td>
<td>30.75%</td>
<td>17.88%</td>
<td>24.64%</td>
</tr>
<tr>
<td>Total</td>
<td>439</td>
<td>397</td>
<td>836</td>
</tr>
<tr>
<td>%</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

chi squared = 134.5
p < 0.001

There was a significant difference in the distribution of the category of hospital worked in by respondents from Magnet and non-Magnet hospitals (P < .001). Among respondents, 19.36% of those in non-Magnet hospitals worked in teaching hospitals, and 58.19% of those in Magnet hospitals worked in teaching hospitals.

If the Magnet and non-Magnet groups had been similar in characteristics, then simple t-test could have been used to test for significant differences. However, since the samples differed in certain important characteristics, two groups were compared using an ANOVA test, adjusting for the covariates that differ between the Magnet and non-Magnet groups. This analysis of covariance was used to compare mean MLQ5X transformational leadership scores between Magnet and non-Magnet responders with adjustment for hospital size and type. Total scores for transformational leadership were significantly higher in Magnet than in non-Magnet hospitals (41.5 vs. 36.5, p < 0.0001)
Table 15

*Comparison of MLQ5X Scores by Magnet Status*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SE</th>
<th>SD</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Magnet</td>
<td>439</td>
<td>36.47</td>
<td>0.99</td>
<td>20.69</td>
<td>34.53 - 38.41</td>
</tr>
<tr>
<td>Magnet</td>
<td>399</td>
<td>41.48</td>
<td>1.08</td>
<td>21.64</td>
<td>39.35 - 43.61</td>
</tr>
<tr>
<td>Combined</td>
<td>838</td>
<td>38.85</td>
<td>0.74</td>
<td>21.29</td>
<td>37.41 - 40.30</td>
</tr>
</tbody>
</table>

**Hypothesis 5.** The fifth and final hypothesis focused on whether staff nurses’ perceptions of their organizations as learning cultures were different in Magnet hospitals. More specifically, it projected that perioperative staff nurses in Magnet hospitals would perceive their organizations to be more reflective of cultures that are consistent with learning cultures as described in the DLOQ-A (Watkins & Marsick, 1993; 1996). The hypothesis stated:

H5: Perioperative staff nurses in Magnet hospitals will perceive their organizations to be more reflective of organizational learning cultures than perioperative staff nurses in non-Magnet hospitals.

Table 16

*Comparison of DLOQ-A scores by Magnet status*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Err.</th>
<th>Std. Dev.</th>
<th>[95% Conf. Interval]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non Magnet</td>
<td>439</td>
<td>61.42</td>
<td>1.24</td>
<td>25.97</td>
<td>58.98 - 63.85</td>
</tr>
<tr>
<td>Magnet</td>
<td>399</td>
<td>71.56</td>
<td>1.29</td>
<td>25.82</td>
<td>69.02 - 74.10</td>
</tr>
<tr>
<td>Combined</td>
<td>838</td>
<td>66.25</td>
<td>0.91</td>
<td>26.38</td>
<td>64.46 - 68.04</td>
</tr>
</tbody>
</table>

Again, responses were adjusted for hospital characteristics of size and type. After this adjustment, total scores on the DLOQ-A were significantly higher in Magnet than in non-Magnet hospitals (71.6 vs. 61.4, p < 0.0001) thus rejecting the null hypothesis (Table 16). This is similar to the findings for H4, in which perceptions of transformational leadership in Magnet hospitals
was higher than in non-Magnet hospitals. Together, the findings from these two hypotheses confirm that nurses’ in Magnet hospitals perceive higher degrees of leadership and learning in their work environments. Although Magnet status did not moderate the relationship described in hypotheses 1 and 2, these findings do provide further evidence of beneficial work environments in Magnet recognized hospitals.

Summary

This study proposed five hypotheses related to the relationship between transformational leadership and organizational learning culture in perioperative nursing units in Magnet and non-Magnet hospitals. Regression analysis and ANOVA findings indicated a strong, positive correlation between transformational leadership and organizational learning culture. This relationship persisted after adjusting for demographics and hospital characteristics. However, Magnet status did not have the moderating effect on this relationship that was hypothesized. While Magnet hospitals had significantly higher total scores for both transformational leadership and learning culture than non-Magnet hospitals, the relationship between transformational leadership and learning culture was similar in both groups.
Chapter 5: Discussion

The purpose of this study was to determine the relationship between transformational leadership and organizational learning culture in perioperative nursing units. The research also sought to determine the extent to which a hospital’s designation as a Magnet hospital influenced the relationship between the variables. The literature provides evidence that nurse leaders in Magnet hospitals demonstrate transformational leadership behaviors, (Schwartz, Spencer, Wilson, & Wood, 2011) and the nursing workforce in Magnet hospitals is required to systematically engage in professional development and teaching that result in organizational learning and innovation. However, there is little research that describes a relationship between these variables. Further, the lack of research on the influence of Magnet designation between the variables warrants further exploration. Not only can these findings deepen nursing’s understanding of the value of transformational leadership on organizational learning in surgical nursing units, it can inform decisions about the value of pursuing Magnet recognition, which requires a significant investment of time, labor and money.

Based on the value of this knowledge, as well as the importance of addressing gaps in the literature that fail to address the mediating effect of Magnet on organizational learning, the following research questions were posed:

**Research Questions**

1. Which transformational leadership behaviors significantly predict organizational learning in a perioperative nursing unit?

2. To what extent does a hospital’s Magnet status moderate the relationship between transformational leadership behaviors and organizational learning in a perioperative nursing unit?
3. Does the perception of transformational leadership behaviors and organizational learning culture differ significantly by hospital type (Magnet vs. non-Magnet) among perioperative nurses?

The following hypotheses were derived from these research questions.

**Hypotheses**

**H1:** There is a positive relationship between transformational leadership and organizational learning culture in perioperative nursing units in Magnet hospitals.

**H2:** There is a positive relationship between transformational leadership and organizational learning culture in perioperative nursing units in non-Magnet hospitals.

**H3:** The positive relationship between transformational leadership and organizational learning culture will be stronger in perioperative nursing units in Magnet hospitals than in perioperative units in non-Magnet hospitals.

**H4:** Perioperative staff nurses in Magnet hospitals will perceive their managers to demonstrate a higher degree of transformational leadership than perioperative nurses in non-Magnet hospitals.

**H5:** Perioperative staff nurses in Magnet hospitals will perceive their organizations to be more reflective of organizational learning cultures than perioperative staff nurses in non-Magnet hospitals.

**Summary of Findings**

Results of the study indicated that there was in fact a strong positive correlation between transformational leadership and organizational learning culture. This relationship persisted after adjusting for demographics and hospital characteristics. However, Magnet status did not have a moderating effect on this relationship, which was similar in both Magnet and non-Magnet hospitals. Magnet hospitals had significantly higher total scores for both transformational
leadership and learning culture than non-Magnet hospitals, but the relationship between the transformational leadership and organizational learning culture was similar in both groups. That is, higher transformational leadership scores predicted higher learning cultures with about the same strength and magnitude in both Magnet and non-Magnet hospitals: the beta coefficient was 0.83 in Magnet and 0.91 in non-Magnet, with t-statistics of 19.62 and 21.97 respectively. The study also showed that, as expected, Magnet hospitals had consistently higher scores in the total transformational scale and all of its subscales, as well as consistently higher scores in the total organizational learning scale and all of its subscales than non-Magnet hospitals.

**Discussion in Relation to Theoretical Framework**

The findings from this study provided answers to two of the three research questions posed. However, a third question could not be answered due to an established, and in this case reinforced, limitation of the survey instrument. In most cases, the findings were consistent with the prevailing literature on the subjects and supported the basis from which the theoretical framework was developed and the hypotheses were proposed. Key findings are next described within the context of the relevant literature and theoretical framework for this study.

**Predictive ability of MLQ5X.** The first research questions in this study asked which of these five domains of transformational leadership, (1) idealized influence (Attributed), (2) idealized influence (Behavior), (3) inspirational motivation, (4) intellectual stimulation and (5) individualized consideration, was more predictive of organizational learning culture. However, regression models revealed the subscales in the MLQ5X were all highly correlated at 0.8. As a result of this high degree of collinearity, it was not possible to determine which domains of transformational leadership are more or less predictive of organizational learning culture.
The intent behind the question was to inform the creation of transformational leadership education or hiring practices that would be more likely to positively influence organizational learning culture. The findings supported an overall relationship, thereby supporting the theoretical basis for proposing the first two hypotheses in this study. However, the inability to isolate and measure the relationship at a subscale level limits the practical application originally conceived as the basis for research question. For instance, one envisioned outcome was a map depicting which domains of transformational leadership would have the most effect on each dimension of a learning culture. With this information, hospitals could focus hiring or training of leaders based on those dimensions of a learning culture that the organization most wanted to develop.

Given the conceptual similarities between certain domains of transformational leadership and organizational learning, it was reasonable to hypothesize that a relationship between certain elements of each model existed. For instance, intellectual stimulation, one of the domains of transformational leadership, is defined as an ability of a leader to stimulate a new way of thinking among followers. This is similar to promoting inquiry and dialogue, which is the dimension of a learning culture that includes the ability of people to question and experiment based on learning and the views of others. Had there been an ability to independently test the relationship between intellectual stimulation and promoting inquiry and dialogue, it may have shown that leaders who are able to stimulate new ways of thinking also foster cultures in which people are encouraged to question, provide feedback, and experiment with new solutions to existing challenges. These findings would have been similar to those in a study by Howell and Avolio (1993), in which they used the MLQ5X to show a relationship between intellectual stimulation and unit performance when a culture of innovation was present in the leader’s unit.
Had a similar relationship been found in the current study, hospitals could have used that information to establish hiring practices or create training programs that strengthened the presence and influence of leaders with who possess stronger degrees of intellectual stimulation. That could, in turn, inspire an increase in the use of evidence-based practices, in which treatments or interventions are changed based on emerging research.

Studies using the MLQ5X have been able to isolate and measure individual components of transformational leadership (Howell & Avolio, 1993; Jung, Chow & Wu, 2003; Manshadi, Ebrahimi, & Abdi, 2014). Studies such as those, coupled with studies confirming the factor structure and internal consistency of the instrument when used in nursing populations (Kanste, et al., 2007) were the basis for selecting the instrument for this research study. However, there are also concerns cited in the literature about the lack of distinction and high correlation in the subscales of transformational leadership (Eliophotou Menon, 2014; Yukl, 1999). These perceived weaknesses in the five structure model of transformational leadership, and more specifically the MLQ5X, have served as rationale for some to question the findings of empirical research regarding the effects of transformational leadership (Evers & Lakomski, 1996; Tejeda, Scandura, & Pillai, 2001). Although Bycio et al., (1995) were able to demonstrate support for the five factor model, Bass (1999), in his review of two decades of research using the MLQ5X, acknowledged “multicollinearity of its scales” (p. 18) as a limitation of the instrument.

**Magnet as a moderator.** The second research question asked to what extent a hospital’s Magnet status moderated the relationship between transformational leadership and organizational learning. The intent behind this question was to explore how certain organizational conditions affect the relationship between leadership and learning culture. In this study, a hospital’s Magnet status was used to define and operationalize the hospital’s organizational condition. It may be
helpful at this point to review the ANCC Magnet Recognition Program® and establish the rationale for why it was used as the moderating condition.

*Magnet overview.* Hospitals who have earned the Magnet designation are said to embody 14 organizational characteristics, known as the Forces of Magnetism (ANCC, 2014). The Forces of Magnetism include:

1. Quality of Nursing Leadership
2. Organizational Structure
3. Management Style
4. Personnel Policies & Programs
5. Professional Models of Care
6. Quality of Care
7. Quality Improvement
8. Consultation & Resources
9. Autonomy
10. Community and Healthcare Organization
11. Nurses as Teachers
12. Image of Nursing
13. Interdisciplinary Relationships
14. Professional Development

These characteristics are grouped into five categories, creating the conceptual model depicted in Figure 2.
The model includes several components that are central to the theories of transformational leadership and organizational learning culture. Transformational leadership is the leadership style recognized in the Magnet model. Dimensions of Watkins and Marsick’s (1993; 1996) theory of organizational learning, such as promoting inquiry and dialogue, encouraging collaboration and team learning, and creating systems to capture learning, align with the Magnet domains of structural empowerment and exemplary professional practice. Given the congruence between the Magnet model and the dimensions of transformational leadership and organizational learning culture, the decision to use Magnet as the moderating variable had a sound theoretical basis.

**Study findings.** This study found that Magnet did not have the predicted interactive effect, \( p = 0.19 \). The relationship between the transformational leadership and organizational learning culture was strong and positive in both Magnet and non-Magnet groups.

This finding is inconsistent with some literature, which suggests that Magnet may serve as a factor between transformational leadership and organizational learning culture. Scholars such as Meredith, Cohen and Raia (2010) substantiate this assumption by stating that Magnet hospitals are recognized for, “infusing the work environment with transformational leadership, which then builds a stronger infrastructure of cultural innovation” (p. 15). Additionally, since the
nursing literature often describes organizational learning in terms of evidence-based practice, research has been able to demonstrate a difference in the perception of transformational leadership between Magnet and non-Magnet hospitals, and correlate that difference to a higher degree of adoption of evidence-based practice (Stetler, Ritchie, Rycroft-Malone, Schultz, & Charms, 2009). In both of these studies, the authors cite Magnet as the basis for stronger relationships or higher correlations between transformational leadership and organizational learning. This literature further substantiates the basis for the hypotheses proposing a relationship between transformational leadership and organizational learning culture.

Perceptions of leadership and learning in Magnet hospitals. The findings from this study support a relationship between transformational leadership and organizational learning culture and that the strength of the relationship is strong (p < 0.0001). Additionally, nurses in Magnet hospitals had consistently higher scores on both transformational leadership and organizational learning. After adjusting for significant differences in hospital size and type, a one-way ANOVA was performed and revealed statistically significant differences in the perceptions of nurses in Magnet hospitals of their leaders as transformational leaders (41.5 vs. 36.5) and their units as learning cultures (71.6 vs. 61.4).

Relationship between leadership and learning. These findings are consistent with the prevailing literature on the relationship between transformational leadership and learning culture. Although there is very little research specifically on organizational learning in healthcare, the literature on evidence-based practice touches on similar characteristics. Kajermo, et al., (1991) showed that nursing work environments in which the leader was perceived to be transformational had higher scores on research utilization. Similarly, Marchionni and Ritchie (2008) demonstrated that nursing units with more transformational leaders also show increases in use of evidence-
base, best practices. Therefore, the findings from this study can be perceived to build on the literature of how transformational leadership correlates with organizational learning in healthcare.

**Perceptions of leadership in Magnet hospitals.** Awarding a hospital Magnet status relies heavily on the leadership behaviors of the nurse managers in the hospital. More specifically, the Magnet model is anchored on the theory of transformational leadership. The literature widely supports evidence of transformational leadership in Magnet hospitals. Given the literature, as well as the centrality of transformational leadership to the Magnet model, it is not unexpected that leaders in Magnet hospitals were perceived to exhibit a higher degree of transformational leadership than leaders in non-Magnet hospitals.

This study is consistent with most, but not all, of the literature related to the perception of transformational leadership in Magnet facilities. For instance, Porter-O’Grady (2009) found no difference in the transformational leadership behaviors between chief nursing officers in Magnet and non-Magnet hospitals. However, that study measured transformational leadership among chief nurse officers. This study measures staff nurse perceptions of nurse managers. Managers are positioned below the chief nursing officer and closer to the staff nurse in the organizational hierarchy. It could be suggested that the distance between the chief nurse and the staff nurse in the two studies contributed to a difference in perceptions.

**Perceptions of learning culture.** The Magnet model includes New Knowledge, Innovations and Improvements among its components. Within this component lie the Forces of Magnetism on Quality Improvement and Quality of Care. The Quality Improvement standard is defined as the incorporation of evidence-based practice and research into practice. Similarly, the dimension of “Connecting the organization to its environment” of the DLOQ is defined as people
using information to adjust work practices. The conceptual overlap between the Magnet model and the model for organizational learning described by Watkins and Marsick in the DLOQ (1993; 1996) explain why, in healthcare settings, organizational learning culture is often described in terms of evidence-based practice or patient safety culture.

There is a large amount of research on the relationship between a hospital’s Magnet status and the utilization of evidence-based practice (Jayawardhana, Welton, & Lindrooth, 2011; Melnyk, Fineout-Overholt, Gallagher-Ford, & Kaplan, 2012; Scott, Sochalski, & Aiken, 1999). The findings from this research are consistent with much of that literature, which demonstrate positive correlations between Magnet recognition and use of evidence and quality standards in practice. For instance, in a study similar to this research, a survey of 1,105 registered nurses reported nurses in Magnet facilities describe a greater degree of research utilization and evidence-based practice than nurses in non-Magnet facilities (Melnyk, et al., 2012). Further, Melnyk, et al., (2012) argues that Magnet hospitals promote a culture that is supportive of evidence-based practice.

Implications For Practice

The research questions and hypotheses posed in this study are grounded in the knowledge that organizational learning leads to improved organizational performance. In nursing, that is often manifested by an ongoing translation and application of research into clinical practice. This research also rests on the understanding that nursing leaders are uniquely positioned to influence the work environment, including the culture in which organizational learning can thrive. Leadership and organizational learning both have been demonstrated to have positive relationships with patient outcomes (Wong and Cummings, 2007; Estrada, 2009). The Magnet program has been shown to influence leadership, learning and the work environment (Aiken, et
al., 2002; Evans, et al., 2014). These findings reinforce the literature that supports these positive effects of Magnet on the work environment, namely in the areas of nursing leadership and organizational learning. The implications for the healthcare patients and the nursing profession are important.

**Patient outcomes.** Positive nursing work environments have been shown to result in better patient outcomes. (Silber, et al., 2016). By using Magnet as a proxy for measuring the work environment, this research demonstrates support for the Magnet program and its ability to influence better patient care. Additionally, these findings address a gap in what is known about Magnet hospitals in general. While the findings did not support a mediating effect of Magnet, it did demonstrate that nurses working in Magnet facilities report higher perceptions of both transformational leadership and organizational leadership than nurses in non-Magnet hospitals. By improving work environments for nurses, hospitals stand to improve the care delivered to their patients.

This is important for healthcare overall, but is particularly important for surgical nurses and their patients. Surgical work environments are often reported to be the least positive work environments of all the specialties (Schmalenberg & Kramer, 2008). Yet it is also the unit in which patients are the most helpless, and the financial consequences of medical errors the most severe. Focusing research on surgical work environments addresses a defined need to improve the workplaces of a relatively dissatisfied nursing population, as well as the potential to improve the care of patients during times of extreme vulnerability.

**Nursing profession.** This study presents several benefits to the nursing profession. At a high level, the study and its findings serve to expand knowledge related to continued competence
and transformational leadership in nursing, as well as broaden the body of evidence related to perioperative nursing.

Continued competence. In terms of nursing practice, this study can help expand the awareness of organizational learning in the profession. Outside of the research on evidence-based practice, organizational learning is not widely studied in healthcare, particularly in nursing. Introducing other facets of organizational learning, such as the value of creating continuous learning opportunities, has value in creating a foundation for studying continued competence. Understanding continued competence and how practitioners sustain learning and maintain current knowledge, is a critical strategic imperative for all healthcare providers. Up to now, competence has been measured at static intervals, often using unproven methods (Waddell, 2001). Understanding more about continuous learning and organizational learning cultures can help create evidence-based programs for sustaining learning across the career lifespan.

Transformational leadership in nursing. Transformational leadership, the theoretical basis of the independent variable in this study, is among the most widely studied and embraced in nursing (Bally, 2007). Illustrating its predominance in the nursing leadership literature, Cummings et al., (2010) report that 53% of nursing research on leadership is based on Bass’ (1985) model of transformational leadership. This research adds to the growing body of knowledge on transformational leadership in nursing, and in particular, in perioperative nursing.

However, despite its widespread adoption as the leadership style of choice in the profession, more contemporary models of leadership are beginning to elicit interest and study among nursing leadership scholars. Malloch (2014) argues that transformational leadership does not take into account the system or context in which leadership is practiced. Therefore, she contends that complexity leadership theory is more suited to the needs of leaders in the complex
system of healthcare. Other authors argue for a blended approach that combines transactional and transformational leadership (Hoyt and Blascovich, 2003), or expanding the concept further, to include such theories as spiritual leadership (Aydin, & Ceylan, 2009). These searches for alternatives to leadership theory are likely rooted in the acknowledged limitations in the model proffered by Bass (1985) and the intercorrelation of the subscales in the MLQ5X (Avolio & Bass, 1995). This latter weakness was replicated in this study, thereby strengthening the case that alternative models of leadership are worth further study.

Subculture of perioperative nursing. Perioperative nursing has been one of the more historically understudied of all the nursing specialties (Riley & Manias, 2002). This despite the fact it has been demonstrated to be culturally unique from other specialties (Suominen, et al., 1997), thereby substantiating a case for a line of study needed by the profession and patients. Therefore, this research into the unique nature of leadership and learning into the culture of perioperative nursing adds to a body of knowledge in need of development and growth. Conversely, the fact that the findings in this study support the literature on the positive effects of Magnet on transformational leadership and learning provides an important connection and commonality between perioperative nurses and the other nursing specialties.

Limitations

Several limitations exist in regard to the design of and findings from this study. First, this study utilized a non-experimental design. In non-experimental designs, the contributions of extraneous variables to the results are not considered. It is possible that an unmeasured variable was contributing to the relationship between leadership and learning, or to the higher scores on both leadership and learning in Magnet hospitals. Additionally, it is important to note that a correlation study only measures the presence and relationship of two variables. It does not imply
causality since there is no way to say with precision in a correlation design that one variable caused another.

Second, this study relied on convenience sampling. The sample was drawn from a database of board certified perioperative registered nurses. Although convenience sampling is acceptable, practical and cost efficient, it does have inherent limitations. Primarily this limitation is due to the fact that the opportunity to participate in the research is not available to all members of the population. Further, it could be argued that members of the database from which this sample was drawn are more professionally engaged than non-certified perioperative nurses. This could, in turn, be a factor in their perceptions of leadership, learning or the extent to which they perceived these characteristics to be needed or present in their workplaces.

Third, this study relied on administration of a web-based survey. Although their use is becoming more widespread, web-based surveys have limitations related to sampling and non-response bias. There is no way to determine with any degree of certainty that the findings from those who did not respond would be the same as the findings from people who did respond. Additionally, although steps were taken to circumvent email spam filters, it can be assumed that non-delivery was a factor in preventing some people from responding. This could be due to the fact that the majority of primary email addresses for the records in the database from which the sample was drawn are work email addresses. Hospitals have notoriously rigorous firewalls, which may have prevented delivery in more cases than distribution to home email addresses would have. Lastly, the response rate of 5.3% was relatively low. This despite the fact that steps were taken to maximize the response rate, including personalization of the initial invitation to participate and the distribution of a reminder email. This may be attributed to the nature of perioperative nursing, which is performed in an operating room and not at a desk or computer.
throughout the day, thereby minimizing the amount of time perioperative nurses have to check and respond to incoming email. Since the primary email address in the records for most respondents was the workplace, the combination of the nature of the location in which perioperative nursing is performed, combined with the rigorous protection applied to incoming in emails in hospitals, could have contributed to a lower response rate than expected. This low response rate combined with inherent limitations in the study design limit generalizability of the findings outside the sample.

There are also limitations consistent with common method bias. In this study, the same respondents were asked to describe the leadership characteristics of their managers and their perceptions of their units as organizational learning cultures. Asking the same people to report their perceptions of two variables at a singular point in time creates the potential for common method bias. As Hutchinson and Jackson (2013) noted, the prevalence of common method bias in studies on transformational leadership in nursing has the potential to “inflates the correlations reported and draws into question the validity of the reported findings.” (p. 17).

Taken together, the limitation associated with the correlations design of this study, along with the sampling strategy and internet-based data collection process, limit the extent to which these findings can be applied to nurses outside this sample. These findings may not be evident for nurses working in different settings such as ambulatory care or long-term care facilities. Similarly, these findings cannot be generalized to other specialties such as critical care, oncology or geriatrics. These findings only demonstrate the presence of a relationship between transformational leadership and organizational learning culture as reported by the perioperative nurses in this sample.
**Future Research**

This research presents a basis for several areas of future investigation. First, there is value in understanding how other nursing specialties perceive the relationship between leadership and learning culture. Do perioperative nurses perceive the relationship between leadership and learning differently than nurses in other specialties? Do perioperative nurses perceive their leaders to be more transformational than perioperative nurses in other specialties? Do perioperative nurses perceive their organizations to be more consistent with organizational learning than nurses in other nursing units? Exploring these questions has the potential to further distinguish the subcultures of nursing specialties.

There may also be an opportunity to explore more fully the relationship between domains of transformational leadership and organizational learning culture, particularly the relationship between intellectual stimulation and the use of evidence-based practice in nursing. Although the present study could not isolate the five domains of transformational leadership to the extent necessary to measure their predictive value, a study that defines evidence-based practice as the dependent variable may yield more definitive results. Recently developed frameworks that define nursing leadership competencies needed to build and sustain the incorporation of evidence based practices in nursing (Everett & Sitterding, 2011) may provide guidance for future research in this area.

There are also areas related to Magnet that inspire further research. For instance, there is some research that demonstrates hospitals pursuing Magnet recognition have many of the same characteristics as hospitals who have actually achieved the Magnet designation (Ulrich, et al., 2007). This provides a basis for comparing the perceptions of nurses who work in Magnet hospitals with those who work in hospitals that are on the Magnet journey. Findings that
demonstrate similarities in perceptions of leadership and learning culture among nurses working in Magnet hospitals and nurses working in hospitals pursuing Magnet would enrich our understanding of how hospitals on the Magnet journey are similar or different than those that have achieved Magnet status.

This research demonstrated that nurses working in Magnet facilities perceive their leaders to be more transformational and their cultures to be more consistent with organizational learning cultures than nurses in non-Magnet hospitals. However, this was measured at a moment in time, and it is unknown whether the perceptions of nurses in Magnet facilities remain higher than those in non-Magnet facilities over time. Research into the long-term effects of Magnet on leadership and learning would fill another gap in this area of research. This research question could be addressed with a longitudinal study that measured perceptions over time. An added benefit of a longitudinal study would be to partially mitigate the negative effects of common method bias described earlier. Alternatively, an experimental design, in which perceptions of leadership and learning were measured before and after the achievement of Magnet status, would deepen an understanding of how Magnet mediated the relationship between the variables.

**Conclusion**

This quantitative study on the relationship between transformational leadership and organizational learning culture in Magnet and non-Magnet hospitals supported four of the five stated hypotheses. Findings indicate a relationship between transformational leadership and organizational learning culture in both Magnet and non-Magnet hospitals. However, Magnet did not strengthen or change the direction of the relationship. Lastly, nurses in Magnet hospitals reported higher perceptions of transformational leadership and characteristics of organizational learning culture than nurses in non-Magnet hospitals.
The nature of leadership and learning continues to engage, inspire and, to some extent, confound scholars. Definitions abound, and research continues unabated. Similarly, the body of evidence on the value of Magnet recognition, specifically its relationship with nursing work environments, nurse satisfaction and recruitment and retention, continues to grow. This study sought to understand the interrelationships between these variables in perioperative nursing units. The findings from this research can be applied in hospital settings to develop an understanding of how leadership and organizational leaning work together to create positive work environments and, ultimately, patient care and safety.
Bibliography


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Laschinger, H. K. S., Finegan, J., & Shamian, J. (2001). The impact of workplace empowerment, organizational trust on staff nurses’ work satisfaction and organizational


Riley, R., & Manias, E. (2002). Foucault could have been an operating room nurse. Journal of Advanced Nursing, 39(4), 316-324.


Appendix A
CCI Policy on Database Access

14.1.1 CCI recognizes that it maintains data regarding perioperative nursing and certification which may be of value to those studying in a variety of fields. The value of this data to those individuals must be balanced against the confidentiality needs of the certificants. Access to certificants and data held by CCI may be provided but only under the following restrictions and conditions.

14.1.2 The Director of Credentialing and Education will approve all requests for data and access to certificants.

14.1.3 Those desiring access to certificants must request this access in writing and will include a copy of the Institutional Review Board (IRB) approval of the proposed research project, or a justification of why IRB approval is not needed for the proposed research to CCI.

14.1.4 Access to certificants will be limited to the following:
   - CCI will not grant direct access to certificants. The e-mail addresses of certificants and other personal information will not be shared with researchers.
   - Upon approval of a request an e-mail message will be sent to certificants by CCI. That message will contain a link to study materials such as surveys to which certificants may choose to participate.
   - A message regarding research studies may be posted on CCI websites or other materials. Links to study materials may be included in these messages and certificants may choose to contact researchers if they wish to participate.

14.5 Requests for access to CCI data may be denied under any of the following conditions:
   - The proposed research may compromise the privacy or confidentiality of individual respondents.
   - The failure to obtain IRB approval or provide the justification of why IRB approval is not needed for the proposed research.
   - The central purpose of the study is not research or evaluation.
   - The research objectives are not feasible using the requested data.
   - The data processing required to produce the requested data files places an unusually heavy burden on the CCI staff. (Note: It may be possible to respond to a burdensome request if the requestor is able to pay for the effort required.)

14.1.6 Research participation: Certificants and CCI staff may decline to participate as subjects in research projects and are assured that their decision will not affect his or her certification status or employment with CCI.
14.1.7 De-identified aggregate data may also be provided to others upon approval of the Director of Credentialing and Education. Examples of this type of information would include the demographic breakdown of certificants, number of certificants, number of test takers and pass rates for certification examinations.

14.1.8 Publication: Researchers receiving CCI data should include the acknowledgement in any publication or presentation using CCI data. Copies of publications and presentations using CCI data should be provided to CCI.
Appendix B

Leadership and Learning Culture Survey

Thank you for participating in this survey designed to explore the relationship between transformational leadership and learning culture in perioperative settings. There are three sections to the survey. The first section is comprised of basic demographic questions designed to categorize your responses. The second section asks you to describe the leadership behaviors of your immediate manager. The third section asks you to describe the learning culture of the perioperative environment in which you work.

Your candid and complete responses are greatly appreciated and will support the growing body of knowledge of perioperative nursing work environments.

Section 1 - Demographics

1. Is your primary employment setting an ANCC Magnet facility? *
   ( ) Yes, we are an ANCC Magnet facility.
   ( ) No, we are not an ANCC Magnet facility.
   ( ) No, we are not currently an ANCC Magnet facility, but we are pursuing ANCC Magnet recognition.
   ( ) I do not know.
   ( ) Not applicable

2. How many operating rooms are there at your primary place of employment?
   ( ) 1-5
   ( ) 6-10
   ( ) 11-15
   ( ) 16-20
   ( ) More than 20
   ( ) Not applicable
3. Which of the following best describes your primary employment setting?

( ) Small community hospital (25-99 beds)
( ) Medium community hospital (100 – 249 beds)
( ) Teaching hospital
( ) Major teaching hospital
( ) Ambulatory surgery center
( ) Rural hospital
( ) Military/VA Hospital
( ) Other

4. What is your age?

_________________________________________________

5. What is your highest academic preparation?

( ) RN Diploma
( ) Associate’s Degree
( ) Bachelor’s Degree
( ) Master’s Degree
( ) Doctorate Degree

6. How long have you been working as a registered nurse in the perioperative setting?

_________________________________________________

Section 2: Multifactor Leadership Questionnaire (MLQ)

(Per licensure agreement, only five of the 20 questions from the MLQ5X included in the final survey can be republished in this appendix.)

Items in this this section of the survey asks you to describe the leadership style of your immediate manager as you perceive it. It includes 28 descriptive statements. Please judge how
frequently each statement fits the person you are describing. Please answer all items, checking only one answer for each item.

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Once in a while</th>
<th>Sometimes</th>
<th>Fairly Often</th>
<th>Frequently, if not always</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
</tbody>
</table>

1. Provides me with assistance in exchange for my efforts

2. Re-examines critical assumptions to question whether they are appropriate

3. Focuses attention on irregularities, mistakes, exceptions, and deviations from standards

4. Talks about his/her most important values and beliefs

5. Seeks differing perspectives when solving problems

**Section 3: Dimension of Learning Organization Questionnaire**

Items in this section of the survey DLOQ-A as you to describe the learning culture of your organization as you perceive it. It includes 21 descriptive statements. For each item, determine the degree to which this is something that is or is not true of your organization. Please answer all items, checking only one answer for each item.

Use the following scale:

<table>
<thead>
<tr>
<th>Almost Never</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
</tr>
</tbody>
</table>

1. In my organization, people help each other learn.
2. In my organization, people are given time to support learning.

3. In my organization, people are rewarded for learning.

4. In my organization, people give open and honest feedback to each other.

5. In my organization, whenever people state their view, they also ask what others think.

6. In my organization, people spend time building trust with each other.

7. In my organization, teams/groups have the freedom to adapt their goals as needed.

8. In my organization, teams/groups revise their thinking as a result of group discussion or information collected.

9. In my organization, teams/groups are confident that the organization will act on their recommendations.

10. My organization creates systems to measure gaps between current and expected performance.

11. My organization makes its lessons learned available to all employees.

12. My organization measures the results of the time and resources spent on training.


14. My organization gives people control over the resources they need to accomplish their work.

15. My organization supports employees who take calculated risks.

16. My organization encourages people to think from a global perspective.

17. My organization works together with the outside community to meet mutual needs.
18. My organization encourages people to get answers from across the organization when solving problems.

19. In my organization, leaders mentor and coach those they lead.

20. In my organization, leaders continually look for opportunities to learn.

21. In my organization, leaders ensure that the organization's actions are consistent with its values.
Appendix C
Sample Questions from MLQ5X

Items in this section of the survey asks you to describe the leadership style of your immediate manager as you perceive it. It includes 28 descriptive statements. Please judge how frequently each statement fits the person you are describing. Please answer all items, checking only one answer for each item.

Use the following rating scale:

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Once in a while</th>
<th>Sometimes</th>
<th>Fairly Often</th>
<th>Frequently, if not always</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
</tbody>
</table>

1. Provides me with assistance in exchange for my efforts

2. Re-examines critical assumptions to question whether they are appropriate

3. Focuses attention on irregularities, mistakes, exceptions, and deviations from standards

4. Talks about his/her most important values and beliefs

5. Seeks differing perspectives when solving problems
Appendix D

Dimensions of Learning Organizational Questionnaire – Abbreviated

Items in this survey ask you to describe the learning culture of your organization as you perceive it. It includes 21 descriptive statements. For each item, determine the degree to which this is something that is or is not true of your organization. Please answer all items, checking only one answer for each item.

Use the following scale:

<table>
<thead>
<tr>
<th>Almost Never</th>
<th>Almost Always</th>
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</thead>
<tbody>
<tr>
<td>(2)</td>
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<tr>
<td>(3)</td>
<td>(4)</td>
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<td>(5)</td>
<td>(6)</td>
</tr>
</tbody>
</table>

1. In my organization, people help each other learn.

2. In my organization, people are given time to support learning.

3. In my organization, people are rewarded for learning.

4. In my organization, people give open and honest feedback to each other.

5. In my organization, whenever people state their view, they also ask what others think.

6. In my organization, people spend time building trust with each other.

7. In my organization, teams/groups have the freedom to adapt their goals as needed.

8. In my organization, teams/groups revise their thinking as a result of group discussion or information collected.
9. In my organization, teams/groups are confident that the organization will act on their recommendations.

10. My organization creates systems to measure gaps between current and expected performance.

11. My organization makes its lessons learned available to all employees.

12. My organization measures the results of the time and resources spent on training.


14. My organization gives people control over the resources they need to accomplish their work.

15. My organization supports employees who take calculated risks.

6. My organization encourages people to think from a global perspective.

17. My organization works together with the outside community to meet mutual needs.

18. My organization encourages people to get answers from across the organization when solving problems.

19. In my organization, leaders mentor and coach those they lead.

20. In my organization, leaders continually look for opportunities to learn.

21. In my organization, leaders ensure that the organization's actions are consistent with its values.
Appendix E
Invitation to Participate in Survey

Hello –

My name is Shannon Carter and I am a doctoral candidate in the Graduate School of Education at Northeastern University. I am in the process of conducting my dissertation research entitled, “The Relationship Between Transformational Leadership and Organizational Learning Culture in Magnet and Non-Magnet Hospitals.”

This research aims to address an important problem in healthcare, that being, how does transformational leadership relate to organizational learning? In particular, the research will focus on the understudied profession of perioperative nursing. Further, it will describe the moderating effect of ANCC Magnet Recognition®, an increasingly popular and influential status for hospitals. Collectively, these findings have the potential to build the body of knowledge in nursing, leadership and organizational learning. As a CNOR® certified nurse, you have a valuable and important perspective to share, and I hope you will participate. Your responses will remain confidential, and the information gleaned from this survey will only be reported in the aggregate.

The survey includes a total of 57 multiple-choice items divided into three (3) sections. The first section includes demographic questions. The second section will ask you how often the listed leadership behaviors describe your immediate leader. The last section will ask you to describe your perceptions of how well your organization supports learning. The entire survey should take approximately 10-15 minutes to complete. If necessary, you can complete the survey in separate sittings. Just remember to save your responses and submit only when the survey is complete.

If you are willing to share your input, please click the link below to be directed to an on-line survey.

http://www.surveygizmo.com/s3/2300634/LLCS

Before providing your answers, you will be required to review information that enables you to confirm your informed consent to participate.

If you have any questions about this research, please don’t hesitate to contact me at c Carter.s@huskey.neu.edu.

With sincere thanks,

Shannon S. Carter

Shannon S. Carter, MA, CAE
Appendix F
IRB Approval

Notification of IRB Action

Date: September 23, 2015  IRB #: CPS15-09-10
Principal Investigator(s): Kelly Conn
Shannon Spear Carter
Department: Doctor of Education
College of Professional Studies
Address: 20 Belvidere
Northeastern University
Title of Project: The Relationship Between Transformational Leadership and Organizational Learning Culture in Magnet and non-Magnet Hospitals
Participating Sites: CCBI permission in file
Informed Consent: One (1) unsigned consent

As per CFR 45 46.117(c)(2) signed consent is being waived as the research presents no more than minimal risk of harm to subjects and involves no procedures for which written consent is normally required.

DHHS Review Category: Expedited #6, #7
Monitoring Interval: 12 months
Approval Expiration Date: SEPTEMBER 22, 2016
Investigator’s Responsibilities:

1. Informed consent form bearing the IRB approval stamp must be used when recruiting participants into the study.
2. The investigator must notify IRB immediately of unexpected adverse reactions, or new information that may alter our perception of the benefit-risk ratio.
3. Study procedures and files are subject to audit any time.
4. Any modifications of the protocol or the informed consent as the study progresses must be reviewed and approved by this committee prior to being instituted.
5. Continuing Review Approval for the proposal should be requested at least one month prior to the expiration date above.
6. This approval applies to the protection of human subjects only. It does not apply to any other university approvals that may be necessary.

C. Randall Colvin, Ph.D., Chair
Northeastern University Institutional Review Board
Nan C. Regina, Director
Human Subject Research Protection
Appendix G

Statement of Rights

Northeastern University, College of Professional Studies, Graduate School of Education

Name of Investigator(s):

Principal Investigator: Dr. Kelly Conn  
Student Researcher: Shannon Carter

Title of Project:

The Relationship Between Transformational Leadership and Organizational Learning Culture in Magnet and Non-Magnet Hospitals

Request to Participate in Research:

We would like to invite you to participate in a web-based online survey. The survey is part of a research study whose purpose is to explore the relationship between nurse leadership behaviors and organizational culture in perioperative nursing units. This survey should take about 10-15 minutes to complete. You may start and finish the survey in separate sittings if you so desire.

We are asking you to participate in this study because you are a perioperative staff nurse.

The decision to participate in this research project is voluntary. You do not have to participate and you can refuse to answer any question. Even if you begin the web-based online survey, you can stop at any time.

The possible risks or discomforts of the study are minimal. However, you may feel a little uncomfortable answering professional survey questions.

You will not be paid for your participation in this study. However, your responses may help us learn more about perioperative nursing work environments and the effects of Magnet status on leadership and learning cultures in perioperative nursing.

Your part in this study will be handled in a confidential manner. Any reports or publications based on this research will use only group data and will not identify you or any individual as being affiliated with this project.

If you have any questions regarding electronic privacy, please feel free to contact Mark Nardone,
NU’s Director of Information Security via phone at 617-373-7901, or via email at privacy@neu.edu.

If you have any questions about this study, please feel free to contact Shannon Carter, the person mainly responsible for the research, at carter.s@huskey.neu.edu. You can also contact Dr. Kelly Conn, the Principal Investigator, at k.conn@neu.edu.

If you have any questions regarding your rights as a research participant, please contact Nan C. Regina, Director, Human Subject Research Protection, 960 Renaissance Park, Northeastern University, Boston, MA 02115. Tel: 617.373.4588, Email: n.regina@neu.edu. You may call anonymously if you wish.

Thank you for your time.

Shannon Spear Carter

By clicking the button below, you are indicating you consent to participate in this study.

[ ] I agree to the Informed Consent Statement
Appendix H
CCI Database Access Approval Letter

September 14, 2015

Northeastern University
Human Subject Research Protection
950 Renaissance Park
Boston, MA 02115

To whom it may concern:

The Competency & Credentialing Institute (CCI) allows access to its certified nurse database for the purposes of identifying potential subjects for research studies, evidence based practice projects or other scholarly endeavors. Per policy, approval is granted by the Director of Credentialing and Education. This letter confirms that Shannon Spear Carter has obtained approval under this policy to access the database for the purposes of her research study, entitled “The Relationship between Transformational Leadership and Organizational Learning Culture in Magnet and Non-Magnet Hospitals.”

CCI policy requires any requests for access to the database include a summary of the study, significance of the study to perioperative nursing, the proposed methods and instruments to be utilized, the data management and analysis methods, the limitations of the study and any ethical considerations. These items were all included in her request.

Since Ms. Carter is the Chief Executive Officer (CEO) of the organization, I took the additional measure of forwarding her application to the Board of Directors for their review and approval. This extra step was taken to avoid the perception that Ms. Carter had any undue influence in the approval process. The Board of Directors approved this request at their meeting on August 1, 2015. Their decision was recorded in the meeting minutes and kept in accordance with the organization’s document retention policy.

If you have any questions about this process, please contact me at jstobinski@cc-institute.org.

Sincerely,

[Signature]

James X. Stobinski, PhD, RN, CNOR
Director of Credentialing and Education