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Associations Between Nurse Manager Engagement and Nursing Quality Indicators

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University
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Abstract

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Justin Travis Morris

M.S., Western Governors University, 2016

B.S., Western Governors University, 2014

Doctoral Study Submitted in Fulfillment

of the Requirements for the Degree of

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Abstract

Individuals serving in the nurse manager role are critical stakeholders supporting frontline nurses delivering quality care within acute care settings. Despite evidence supporting nurse managers' contributions to improved quality outcomes for patients by proxy, there is scant evidence supporting direct relationships between the role and outcomes. This study intended to provide quantitative evidence of relationships between nurse managers' engagement, nurse managers' tenure, and patient outcomes. The leadership complexity theory classified the nurse manager as a meso-level leader, requiring support from the macro- and microlevels of the organization. Acting as a liaison, meso-level leaders' function in the space between executive leadership and the frontline. A quantitative correlational analysis was conducted to test two hypotheses answering questions exploring relationships between the variables. Secondary datasets were analyzed and scatterplots indicated linear relationships between all variables. Pearson's correlations and multiple regression models were conducted and identified mild to moderate relationships between nurse manager engagement ($N = 31$), nurse manager tenure, and patient outcomes. Based on p-values at the 0.05 alpha level, there was a significant relationship between nurse manager engagement and catheter associated urinary tract infections. This study provides support for increased investment of individuals serving in the nurse manager role, improving the outcomes of patients on their units. These outcomes may positively impact social change by improving the health of the communities served.

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Dedication

I would like to dedicate this study to my parents, David and Susie Morris. Thank you for your love and encouragement, and for providing me with a solid foundation to reach my full potential.

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I would like to thank my committee chair, Dr. Gaynel Olsen, for her guidance and support during this process. I would also like to thank Dr. Fawzi Awad, my committee member, and Dr. Lloyd Ford, University Research Reviewer, for their contributions to my success.

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Section 1: Foundation of the Study and Literature Review

Introduction

The nurse manager has been identified as a critical stakeholder in initiatives to improve the quality of patient outcomes in healthcare (Chisengantambu et al., 2018; Conley, 2017; Lúanaigh & Hughes, 2016; Nelson, 2017). Despite meso-level health care managers' influence on the outcomes delivered by their teams, there is minimal evidence of the direct relationship between nurse managers and patient outcomes data (Chavez & Yoder, 2015; Warshawsky & Havens, 2014). Experts also cite the importance of experience as a variable in meso-level managers' efficacy in healthcare environments (Gunawan et al., 2017; Van Dyk et al., 2016). Connections between nurse manager tenure and nurse manager engagement and their relationships with nursing quality indicators were explored in this study.

Nursing quality indicators are patient outcomes that are widely accepted as measures of the quality of nursing care provided (American Nurses Association [ANA], 2019). Reported patient outcomes quantify the quality of nursing care provided and include preventable falls, hospital-acquired pressure injuries (HAPI; Stage II or greater), catheter-associated urinary tract infections (CAUTI), and central-line-associated bloodstream infections (CLABSI). These patient outcomes are directly impacted by nursing practice and identified nationally as indicators of quality of care (ANA, 2019).

The findings of this study may contribute to positive social change by improving the health of the community served. An evidence-based understanding of the relationship between meso-level healthcare management and patient outcomes may lead to the

development of informed initiatives to improve quality of care, development opportunities, and support for meso-level leaders. A focus on continually improving patient outcomes across healthcare systems supports healthier patients in communities (Lúanaigh & Hughes, 2016).

Problem Statement

As organizations aim to improve the quality of care delivered, it is essential to develop a more comprehensive understanding of the importance of nurse manager engagement and experience as they directly relate to patient outcomes. Current literature supports the nurse manager as a stakeholder in advancing improved patient outcomes through motivating, leading, and advocating for frontline staff. In the acute care inpatient clinical practice environment, the term *frontline staff* refers to registered nurses who provide direct patient care (Chisengantambu et al., 2018; Conley, 2017; Lúanaigh & Hughes, 2016; Nelson, 2017). Experts support the need for further exploration of the nurse manager role and how individuals serving in the role influence patient outcomes, quality of care, and staff engagement (Brewer et al., 2016; Chavez & Yoder, 2015).

Experience has been identified as a contributing factor supporting the nurse manager's ability to demonstrate higher levels of confidence, self-efficacy, and competence in the role (Gunawan et al., 2017; Van Dyk et al., 2016). An evidence-based understanding of the impact of nurse managers and the benefits of retaining individuals in the role may guide healthcare administrators in decision making that determines organizational support for meso-level leaders. Press Ganey (2016) defined engagement as a composite of an "employee's pride in the organization, intent to stay, willingness to

recommend to friends and family for care, and overall satisfaction toward the workplace" (n.d.). For this research study, the term *meso-level management* refers to healthcare leadership roles, including nurse manager, that function as a conduit between frontline staff and executive leadership (Arena & Uhl-Bien, 2016; Chisengantambu et al., 2018). Understanding the relationship between nurse managers' engagement, nurse managers' tenure in the nurse manager role, and nursing quality indicators may provide insight for increased support and professional development for meso-level leaders in healthcare.

Purpose of the Study

The purpose of this quantitative study was to investigate the relationships between nurse manager engagement scores, nurse manager tenure, and outcomes for patients served. Nurse manager engagement refers to the Press-Ganey composite score quantifying employees' pride in their respective organizations. Building on the identified link between frontline nursing staff engagement, performance, and patient outcomes, this study explored potential relationships between nurse managers' engagement and the quality of nursing care provided by the teams that nurse managers lead. As the complexity of the nurse manager role changes, research supports the influence of the nurse manager on the workforce but has not identified a direct link between nurse manager engagement and nursing quality indicators (Cummings et al., 2018; Omery et al., 2019).

Direct relationships between the nurse manager engagement score and nursing quality indicators in an acute inpatient hospital setting were examined. These indicators are used to standardize measurement and reporting of patient outcomes nationally to

ensure consistency. A standardized reporting process with consistent metrics supports benchmarking strategies at the local, state, and national levels. The reported outcomes include, but are not limited to, preventable falls, HAPI, CAUTI, and CLABSI on inpatient acute care units. The National Databases of Nursing Quality Indicators® (NDNQI; ANA, 2019), established in 1998, use healthcare organizations' data to connect nursing care and patient outcomes. Lackey and Tesh (2016) highlighted the importance of the use of nursing quality indicators as a standardized method of evaluating processes and outcome measures related to patient care.

In addition to exploring the research gap involving the relationship of nurse managers' engagement scores and nursing quality indicators, addressed in this study are the relationships between nurse managers' number of years in their current role and the same nursing quality indicators. Research suggests that length of time in the role contributes to more effective leadership practice, supporting the need to explore impacts of tenure on patient outcomes (Gunawan et al., 2017; Van Dyk et al., 2016).

Research Questions and Hypotheses

RQ1 Quantitative: What are the relationships between nurse manager engagement scores and occurrences of HAPI (Stage II or greater), preventable falls, CAUTI, and CLABSI on acute care inpatient nursing units using the Press Ganey employee engagement survey and reported NDNQI data?

H_0: There are no relationships between nurse manager engagement scores and occurrences of HAPI (Stage II or greater) rates,

preventable falls, CAUTI, and CLABSI rates on acute care inpatient nursing units.

H_1: There are relationships between nurse manager engagement scores and occurrences of HAPI (Stage II or greater), preventable falls, CAUTI, and CLABSI rates on acute care inpatient nursing units.

RQ2 Quantitative: What are the relationships between nurse manager years of experience and occurrences of HAPI (Stage II or greater), preventable falls, CAUTI, and CLABSI on acute care inpatient nursing units using hospital data and reported NDNQI data?

H_0: There are no relationships between nurse manager years of experience and occurrences of HAPI (Stage II or greater), preventable falls, CAUTI, and CLABSI rates on acute care inpatient nursing units.

H_1: There are relationships between nurse manager years of experience and occurrences of HAPI (Stage II or greater), preventable falls, CAUTI, and CLABSI rates on acute care inpatient nursing units.

Theoretical Foundation for the Study

The foundation for this study was complexity leadership theory, which proposes that healthcare organizations function under administrative, adaptive, and enabling leadership processes (Arena & Uhl-Bein, 2016; Uhl-Bien & Arena, 2017; Uhl-Bien & Marion, 2009). Uhl-Bien and Marion (2009) introduced complexity leadership theory as a framework to support the critical role of midlevel or adaptive leadership in

accomplishing the goals of bureaucratic organizations. This theory involves an assumption that large bureaucratic organizations are organized on a micro- to macro-scale that consists of a microsystem, mesosystem, and macrosystem. Warshawsky et al. (2013) proposed that the work of the organization occurs at the microsystem level, while the macrosystem leaders create the vision and the mesosystem leadership acts as a liaison between the other two levels. The complexity leadership model indicates that nurse managers are meso-level leaders charged with creating an environment of empowerment. *Environment of empowerment* is defined as the balance between macrosystem leadership and the unpredictable frontline microsystem (Warshawsky et al., 2013). Complexity leadership theory supports this research. The work of the microsystem (frontline nursing staff) is supported by the meso-level (nurse manager) while the quality of that work may be impacted by the engagement, experience, and/or resilience of the individual leader (Gunawan et al., 2017; Hudgins, 2016; Van Dyk et al., 2016).

The complexity leadership theory directly assigns the mid- or meso-level leader a critical role in the success of a healthcare organization. According to the theory, the nurse manager's domain is the space between the frontline teams carrying out work of the organization and the executive level leaders setting the vision (Uhl-Bien & Arena, 2017). While the nurse manager is at the meso-level in the theory, the indicators of quality nursing care are attributed directly to the microlevel care team members they lead. These same outcome variables are used to quantify the safety and success of a healthcare organization, the macrolevel. Variables chosen for this study determined if the engagement and tenure of nurse managers are associated with quality outcomes that

include: CAUTI, CLABSI, HAPI, and falls. These quality variables are directly used to indicate the quality of care by frontline teams and generally recognized on a macrolevel for overall quality of the healthcare organization, serving as a quantitative measure of success. This researcher determined there are relationships between the same quality variables and nurse manager engagement and tenure, supporting further exploration into the relationships between nurse managers, and patient outcomes. Therefore, the goal aligns with the goals of the complexity leadership theory.

Nature of the Study

A quantitative, correlational study was conducted using secondary data. The outcome of this correlation study identified relationships between nurse manager engagement scores, nurse manager tenure, and patient outcomes that are accepted as indicators of nursing quality. Nursing quality is determined by standards set by the NDNQI and includes preventable falls, HAPI (Stage II or greater), CAUTI, and CLABSI. Associations that were identified by this study and their significance may support a connection between nurse manager engagement, nurse manager tenure, and improved patient outcomes.

Literature Search Strategy

Literature relating to nurse manager engagement, nurse manager experience, and patient outcomes is described here. Keywords used in the search were *nurse manager, retention, patient outcomes, NDNQI, quality indicators, engagement, experience, tenure,* and *nurse leader* in the databases Worldcat.org, Medline, and Embase, as well as in Walden University and Medical University of South Carolina multidatabase searches.

Articles reviewed met the following inclusion criteria: published in peer-reviewed journal, published between 2016 and 2020, written in English.

The link between nurse manager tenure, nurse manager engagement, and nursing outcomes was investigated in this study. Literature reviewed supported the impact of nurse managers' contributions to the performance of the teams they lead, but identified no direct correlation between the manager and improved quality and safety in nursing care. Despite the scant evidence in current literature addressing direct associations between individuals serving in the nurse manager role and the outcomes of patients cared for on their respective units, there is evidence in the current conversation that support the nurse manager's impact on outcomes by proxy (Cummings et al., 2018; Phillips et al., 2018; Titzer et al., 2017). To address the lack of evidence in current literature, I expanded my search to explore the impact of nurse managers on the performance of their teams. The expanded search utilized the same databases and additional articles met the same inclusion criteria. Additional search terms included *shared governance*, *frontline*, and *bedside*.

The expanded search yielded articles that validated the indirect relationship between nurse managers and nurse-driven patient outcomes through the creation of healthy work environments and setting the tone of their units (Cummings et al, 2018). Nurse managers are cited as a variable in the performance of their teams, yet the success of the unit as measured and reported is attributed to the frontline and administration, not the meso-level leader (Press-Ganey, 2016; Press-Ganey, 2019). This trend in healthcare research and the lack of exploration of the role of nurse managers focused on the

outcomes of their work and the support provided for middle management in healthcare organizations led to the development of the complexity leadership theory that framed this study (Marion, 2013; Uhl-Bien & Marion, 2009; Uhl-Bein & Arena, 2017). Experts agree that the nurse manager role has evolved over time and exploration into the role and influence of individuals serving in the role is a necessary component to ensuring safe care and improved patient outcomes (Brewer et al., 2016; Duffield et al., 2019). Sim et al. (2018) argued the importance of expanding how quality outcomes are measured and quantified, and the need to include structures and processes in the evaluation.

The expanded literature review also revealed impacts of tenure and engagement on the performance of nurse managers. Tenure is identified as a variable in the evaluation of nurse manager performance indicating efficacy and confidence. With no agreed upon variable or set of variables identified to connect the nurse manager to patient outcomes, I chose tenure as a potential indicator of the nurse managers longevity in the role on the outcomes provided by their teams.

Literature Review Related to Key Variables and/or Concepts

Current literature supports nurse managers' impact on patient outcomes and nursing quality by proxy, but there is little evidence to support the nurse manager's direct impact on these measures. Due to the lack of literature related to nurse managers' engagement, key variables were selected that quantify the quality of care provided to patients that are usually attributed to other levels of the healthcare team. These quality indicators are directly associated with, or impacted by, the performance of frontline nursing care teams. These frontline nursing teams are generally credited with the

outcomes which further indicates the need for inquiry into the direct impact of their respective leader, the nurse manager. The reported indicators are also used to grade the performance of healthcare organizations, made available to the public, and utilized as metrics of success for regulatory bodies and accrediting organizations (Press Ganey, 2016; ANA, 2019). Although the nurse manager is supported as a key stakeholder, they have yet to be identified as an active participant directly driving outcomes and patient care.

Tasked with setting the vision for frontline nurses they lead, nurse managers influence their teams' engagement and performance (Brewer et al., 2016; Chavez & Yoder, 2015; Luanaigh & Hughes, 2016). Nelson (2017) posited that the nurse manager's success is "vital for the achievement of exceptional patient outcomes, as well as for maintaining staff satisfaction and engagement" (p. 408). Identifying this relationship between nurse manager leadership styles and outcomes achieved by their teams supports the need to identify potential relationships between nurse manager engagement and similar outcome metrics. Linking nurse manager engagement and patient outcomes through existing relationships between the study variables may directly support increased investment in the nurse manager role. Supported as a critical variable in the provision of quality and safe nursing care by the leadership complexity theory, the nurse manager role was selected for this study (Arena & Uhl-Bien, 2016; Uhl-Bien & Arena, 2017; Uhl-Bien & Marion, 2009). Nurse manager tenure was selected as a study variable supported by literature as an indicator of performance in the role (Gunawan et al. 2018; Van Dyk et al. 2016). CLASBI, CAUTI, HAPI, and falls are patient outcomes widely supported as

standardized indicators of the work of frontline nurses and the healthcare organizations as a whole, yet have not been attributed to the nurse manager meso-level leader in peer-reviewed literature (NDNQI; ANA, 2019).

NDNQI and Patient Outcomes

Despite the nursing profession's identified importance in the outcomes of patients, there is still disagreement among experts concerning how this impact should be measured (Omery et al., 2019; Sim et al., 2018). Sim et al. (2018) argued that efforts to measure nursing practice are not comprehensive and do not capture the scope of the profession's contribution. Nursing is the only discipline in healthcare founded on the concept of caring, which has been described as the "essence of nursing" (Anderson et al., 2015. p. 1). Anderson et al. (2015) indicated that improved patient outcomes rely on interventions, knowledge, and critical thinking skills of the nursing workforce. These actions and knowledge are supported and facilitated by the work of the nurse manager. Data sets, including NDNQI, focus on patient safety as a primary indicator of quality of nursing care. Experts agree that these measures should be expanded to include concepts of caring and patient experience (Cuevas et al., 2017; Sim et al., 2018).

Lackey and Tesh (2016) stress the importance of nurse-sensitive indicators as nursing shifts to a data-driven profession. Sim et al. (2018) explored expanding the metrics of nursing practice outcomes to include structure and process, linking the impact of the nurse manager to nursing care provided. Neglecting to consider structures and processes for the evaluation of nursing quality, Sim et al. (2018) argued that this devalues the comprehensive role nursing plays in the healthcare environment. Patient centeredness,

patient experience, work environment, organizational characteristics, communication, and collaboration are proposed variables to expand the measurement of nursing success (Sim et al., 2018; Titzer et al., 2017; Cummings et al., 2018). Nursing quality indicators are a necessary variable in exploring the impact of nurse managers in healthcare organizations and may provide a set of variables that can be used to assess the quality of nursing across the continuum. CLABSI, CAUTI, HAPI, and falls were selected for this study because they are reported and benchmarked by similar organizations across the country and are considered standardize care. Use of standardized nursing outcome measures contributes to the generalizability of this study.

Nurse Manager and Frontline Nurse Relationships

Consensus in healthcare research supports the work of nurses as an indicator of the quality of care provided by an organization (Phillips et al., 2018; Titzer et al., 2017; Ulrich et al., 2019a). This success is translated into metrics used to assess the quality of care provided by the nurses on the frontline and the organization as a whole (Cummings et al., 2018; Phillips et al., 2018). The evaluation of outcomes directly attributed to the nurse manager, not to the teams they represent and lead, requires exploration and identification of associations between the nurse manager and patient outcomes. Nurse manager influence on team performance is widely investigated through the lens of leadership style, relational skills, support provided, and are measured by the perception of their teams (Isobe et al., 2019; Ulrich et al., 2019a). Galura (2020) proposed that the nurse managers role is pivotal in creating the environment that supports the provision of quality care which is consistent with the evidence. In addition, they cited the nurse

managers experienced challenges when enforcing organizational initiatives that they believe to be unnecessary or will cause harm, leading to strained interpersonal relationships between them and their team (Galura, 2020). Although this validates the importance of the nurse manager by proxy, the link between the nurse manager and patient outcomes or nursing quality is not addressed. Research identifies correlations between the nurse manager and the success of the frontline, but makes no connection to the ultimate deliverable, quality patient outcomes. Isobe et al. (2020) suggested that creating and articulating clear visions for their teams is a variable that predicts the impact of nurse managers' skills and performance on the outcomes demonstrated by their teams. Ulrich et al. (2019b) explored frontline nurses' perspectives on the perception of nurse manager efficacy based on frontline engagement and satisfaction with the work environment. Richie and Waite (2019) expanded on the measure of nurse manager efficacy through team outcomes to explore the nurse manager and their impact on the innovation of frontline nurses. Indicators of the efficacy of nurse managers beyond the perception of their teams provided through standardized surveys has not provided a strong enough business case for healthcare organizations to invest in the role or nurse manager and the individuals serving in the role. This research aimed to identify associations between identified metrics of success to link the nurse manager to the patient outcomes on the units they lead.

Nurse Manager Engagement

Nurse manager engagement is a prevalent variable in research regarding the role of nurse manager. Although nurse manager engagement is prevalent in research, studies

addressing the engagement are scarce. Press Ganey (2016) defined engagement as an employee's overall satisfaction, commitment, and pride in their organization. Conley (2017) explored previously identified challenges of nurse manager engagement with a population (N = 47) that included nurse managers from acute care settings, using the Utrecht Work Engagement Scale to quantify engagement. The Utrecht Work Engagement Scale focused on "vigor, dedication, and absorption" as indicators for engagement instead of focusing on items specifically related to the leaders' role (Conley, 2017, p 455). Press Ganey measures engagement through questions indicating the employee's overall satisfaction, commitment, and pride in their organization (Press Ganey, 2017). The challenges related to engagement that were presented in Conley's work included increased administrative workloads, poor communication, and lack of mentorship (2017). Conley concluded that evaluation of nurse manager engagement using validated tools can provide nurse executives with validation to better support the nurse manager role.

Duffield et al. (2019) also explored nurse managers' engagement through a national survey (N = 2,758) of registered nurses in Australia. Participants rated their engagement using the Advanced Practice Role Delineation (APRD) tool, focusing more on clinical aspects versus management. Citing the complexity of the environments managed, Duffield et al. (2019) described an increase in "clinical-management hybrid" roles that led to higher stress levels for nurse managers. Experts agree on the need for research to guide solutions for reducing administrative workloads and enable nurse managers with opportunities for continued clinical engagement (Conley, 2017; Duffield et al., 2019; Wise & Duffield, 2019). Conley (2017) recommended research to better

understand the relationship between nurse manager engagement and patient outcomes, further supporting the variables used in this study.

Nurse Manager Tenure

Nurse manager tenure supports a comprehensive approach to the evaluation of nursing care (Phillips et al., 2017; Sim et al., 2018). Gunawan et al. (2018) and Van Dyk et al. (2016) explored nurse managers' confidence and competence, associating tenure as one of the contributing factors. Both studies linked experience or tenure to the nurse managers' performance, reinforcing the importance of longevity in the nurse manager role and how it impacts nurse quality outcomes. Gunawan (2018) proposed that the nurse manager's competence improved with years of experience. The study described variables identified in literature to measure the nurse managers' competence and grouped them into three themes: organizational factors, individual traits, and role factors (Gunawan, 2018). Van Dyk et al. (2016) expanded on nurse manager tenure's definition to include the length of time holding formal leadership roles. Experience in the role, or tenure, is attributed to higher competency levels than their less experienced counterparts (Gunawan, 2018; Van Dyk at al., 2016). The importance of developing future nurse managers and retaining experienced mid-level leaders was supported in the literature (Phillips et al., 2017; Titzer et al., 2017). Phillips et al. (2017) cited nurse manager tenure as a variable driving patient safety, patient satisfaction, and clinical outcomes. The proposed link between tenure and nursing outcomes was investigated in this study.

Tenure of nurse managers not only improves their confidence and competence, but also directly impacts the performance of the front line (Brewer et al., 2016;

Cummings et al., 2018; Ulrich et al., 2019b). Described as a hybrid role, focused on clinical and administrative responsibilities, the nurse manager role spans peer and leader responsibilities (Duffield et al., 2019). Cummings et al. (2018) cited the positive impacts of relational leadership styles and the weakness of tasked focused styles of leadership associated with novice nurse managers. Brewer et al. (2016) argued that transformational leadership, a relational leadership style, had no direct impact on frontline nurses' engagement. However, transformational leadership has been attributed to slow turnover and aide in retention of frontline nurses (Brewer et al., 2016). These studies further support the importance of identifying variables that directly attribute improvements in healthcare outcomes, specifically nursing, to the tenure of individuals serving in leadership roles.

Nurse Manager Role

Individuals in the nurse manager role, also referred to in the literature as mid- or meso-level management, serve as advocates for frontline nursing staff and are responsible for setting the vision for a unit. The nurse manager functions to remove barriers and address challenges to the delivery of quality nursing care through transformational leadership. A key stakeholder in supporting the mission, vision, and values of an organization through the leadership, guidance, and support they provide for the micro- and macro-levels of the bureaucratic healthcare organization, the unit level nurse leader must in turn be afforded support by both levels to be successful.

The nurse manager role can be defined as a nurse leader with direct responsibility for a team of nursing care providers within a care setting. Researchers have cited

challenges with studying nurse managers' role due to various and varying responsibilities mentioned in many studies (Conley, 2017; Gunawan et. al, 2016). Variables influencing the nurse manager role or quantifying outcomes related to the role varies from clinical to administrative focuses. There is a lack of consistency in the definition of the role across studies due to the global healthcare landscape. Due to the complexity and variability in the role, it was important to identify defined variables to associate the complex role with direct patient care outcomes.

Titzer et al., 2017 explored succession planning and leader development related to the nurse manager role. Titzer et al., 2017 explained that many nurse managers have been selected for their roles based on excellent performance as clinicians and have minimal formal training available. While minimal formal training and succession planning was discussed in literature, experts agree that it is necessary for nurse managers to have clinical experience and engagement to support positive patient safety outcomes (Duffield et al., 2019; Titzer et al., 2017). Duffield et al, 2019 found that patient outcomes where front-line managers were clinically involved at least 70% of the time were more effective and supported the need for less administrative tasks. These studies indicate the need for healthcare administrators to support the nurse manager role in finding balance between clinical and administrative responsibilities.

Omery et al. (2019), explored the nurse managers' span of control and suggested that nursing has the greatest potential influence on patient outcomes within healthcare organizations. Supporting the role of nurse managers, Omery et al. (2019) recommended a deeper understanding of span of control on an organizational level. The literature

review supported the nurse manager role as a critical element in the provision of safe, high-quality care. Luanaigh and Hughes (2016) posited that the nurse executive's role is to advocate for nursing at the executive level. Additionally, it was found that the nurse executive's role was critical to the delivery of quality health care (Luanaigh & Hughes, 2016). This work supports the need for further studies to explore the nurse manager role's impact on the quality of care delivered. Experts have recommended further research to investigate leadership as a predictor of patient outcomes and to guide solutions that reduce administrative workloads in order to enable nurse managers to continue to be clinically engaged with the aim of achieving improved quality and outcomes (Brewer et al., 2016; Duffield et al., 2019).

Chisengantambu et al. (2018) took a qualitative approach to explore the lived experience of nurse managers (N = 15) related to the support that they provide their teams and the support provided to them by their respective organizations. The data were analyzed to identify themes, resulting in the development of the "sandwich support model" to positively impact nurse manager decision-making. The authors recommended that nurse managers be supported through coaching, mentoring, and supervision. Their recommendations also included studies to explore methods of providing adequate support for nurse managers as well as creating supportive environments (Chisengantambu et al., 2018).

Assumptions

One assumption made for this study was that validation of the impact of nurse managers on the nursing outcomes of patients in acute care settings will lead to increased

support and professional development opportunities for individuals in the role. Another assumption was that nurse managers who receive greater levels of administrative or macrolevel leadership support perform at a higher level than their peers and lead more successful inpatient units. These assumptions were necessary to support the potential positive social change generated by this study.

Scope and Delimitations

The purpose of this study was to investigate relationships between nurse manager engagement scores, experience in the nurse manager role, and the outcomes of patients served. The population included nurse managers of all inpatient units at the study site. Nurse managers of perioperative, psychiatric, emergency, and labor and delivery departments, as well as outpatient ambulatory clinics, were excluded for standardization of metrics used to quantify patient outcomes. Units that met inclusion criteria could be excluded based on the tenure of the nurse manager at the time of secondary data set evaluation. The NDNQI data analyzed were collected during calendar years 2018 and 2019. Nurse manager engagement data were collected during calendar years 2018 and 2019. Engagement score values reflect data from the previous calendar year.

Significance, Summary, and Conclusions

Results of previous studies identified that higher levels of nurse manager engagement positively impacted the quality of care provided by frontline nurses (Chavez & Yoder, 2015; Nelson, 2017). Experts have stated the need for further investigation of the link between meso-level leadership and the quality of nursing care provided, and patient outcomes (Brewer et al., 2016; Conley, 2017; Luanaigh & Hughes, 2016). The

focus of this study was identifying relationships between nurse manager engagement and patient outcomes such as preventable falls, HAPI (Stage II or greater), CAUTI, and CLABSI. Findings of this study contribute to the conversation regarding the effects of nurse manager engagement on the quality of nursing care delivered on acute care inpatient units. Falls, HAPI, CAUTI, and CLABSI were chosen because the data are standardized, nationally reported, and enable benchmarking against similar organizations and nursing units. I will utilize these variables as independent variables that directly quantify the nursing care provided. This information may be used to support efforts of healthcare administrators or macrolevel leaders in acute care settings as organizations create strategies to continually improve patient care outcomes, quality of care, and employee engagement.

The findings of this study may contribute to positive social change through improving the health of the community served. Improved quality of care may be driven by a more thorough understanding of the relationship between meso-level healthcare management and patient outcomes. The results of this research may provide evidence-based knowledge for improving structures to support healthcare leaders in making decisions that directly impact the patients and communities they serve. Initiatives that focus on continually improving patient outcomes across healthcare systems support healthier patients in their respective communities (Lúanaigh & Hughes, 2016).

Section 2: Research Design and Data Collection

Introduction

The purpose of this quantitative study was to investigate the relationships between nurse manager engagement scores, nurse manager tenure, and outcomes of patients served. The research design and rationale, variables, and definitions are described in this section, which also includes a description of the methodology applied.

Research Design and Rationale

Secondary data from Press Ganey based on responses from nurse managers accountable for inpatient units at an academic medical center in the Southeastern United States was analyzed. Press Ganey is a third-party vendor that manages data for health care organizations (Press Ganey, 2019). The data were collected in 2018 and 2019 as part of an annual employee engagement survey. Press Ganey data provided nurse manager engagement scores from inpatient nursing units across the organization. An additional secondary dataset provided by human resources provided values for nurse manager tenure.

Secondary data from the NDNQI was analyzed to provide values for patient outcomes. NDNQI data are developed in a rigorous, evidence-based, tested process from identification to implementation. Each endorsed indicator evaluates the structure, process, and/or outcomes of nursing care (ANA, 2019). The study site reports data on preventable falls, HAPI (Stage II or greater), CAUTI, and CLABSI. The data for these indicators was analyzed to determine whether relationships exist between nurse manager engagement

and outcomes on the areas managed. Secondary data from Press Ganey and NDNQI were provided by the study site's quality department.

Methodology

Population

The target population for this study included acute care inpatient nurse managers and patients admitted to their respective units. A target population of 30 inpatient nurse managers was studied. Secondary data used for this study reported incidents of hospital-acquired conditions reported to NDNQI.

Sampling and Sampling Procedures

The variables for this study included nurse managers who met the following criteria: nurse manager of an inpatient unit at the study site and employment in the role for at least 12 months as of January 1, 2018. The study sample excluded nurse managers from perioperative, psychiatric, emergency, and labor and delivery departments, as well as ambulatory clinics, due to different outcome reporting metrics. There were 30 inpatient nurse managers who met the inclusion requirements.

The second variable that was included in this study was patients admitted to the included units who met criteria for a hospital-acquired condition as defined by NDNQI, including preventable falls, HAPI, CAUTI, and CLABSI. Data that were obtained from the quality department at the study site did not include patient information or identifiers. The number of occurrences was identified when the included acute care inpatient units were determined.

A G*Power analysis for a bivariate normal model correlation was conducted using G*Power version 3.1.9.7. The input parameters were effect size 0.06, power 0.80, alpha 0.05, and 0.0 expected correlation. Output parameters indicated a minimum sample size of 19, which made this study sample size adequate. Rowe and Mackridge (2018) suggested a Pearson correlation to determine the presence and strength of relationships between interval data. All data analyzed for this study were interval data.

The study data were collected by three methods. For NDNQI data, the sample included all patients admitted between January 1, 2018 and December 31, 2018 (2018 dataset) and January 1, 2019 and December 31, 2019 (2019 dataset) who met criteria for a hospital-acquired condition as defined by NDNQI. Patient outcomes data are analyzed by the study site's quality department and reported quarterly to NDNQI. The data analyzed included patient conditions that met criteria for one of the variables (CAUTI, CLABSI, falls, and HAPI). NDNQI data are reported on a unit level and can be attributed to specific nurse managers. I requested data from the quality department at the study site and did not require special permission.

Nurse manager engagement data were requested from the data analyst for hospital administration. Press Ganey sent surveys to each nurse manager through electronic mail in February 2018 and February 2019. Data for nurse manager tenure included nurse managers at the organization who had been in their role for 12 months or greater as of January 1, 2018. Nurse managers serving in their current role for less than 12 months were excluded from this study, along with NDNQI data from their respective unit(s). All

data were requested from the study site's human resources department and did not require special permission.

Instrumentation and Operationalization of Constructs

I analyzed three secondary datasets to identify potential relationships between nurse manager tenure, nurse manager engagement, and nursing quality indicators. Data were collected by Press Ganey from the study site. SPSS was used to perform a Pearson's multivariate correlation analysis utilizing the variables described. In addition, multiple regressions were conducted to quantify the strength of identified relationships.

The nurse manager engagement variable was measured via an electronic survey administered in February 2018 and February 2019. The secondary dataset analyzed contained a numeric value for engagement that was an aggregate score based on survey responses. The nurse manager tenure in role variable was measured in number of 12-month periods employed in the current role. This dataset was provided by human resources and provided a numerical value for nurse tenure in years.

The nursing quality indicators variables included preventable falls, HAPI, CAUTI, and CLABSI on inpatient acute care units at the study site. Preventable falls are defined as events that occur when patients are lowered to the ground with or without assistance and do not have all safety mechanisms in place. Falls are measured and reported per incident. HAPI (Stage II or greater) are defined as pressure injuries obtained post admission that are classified as partial thickness and are measured by occurrence. CAUTI are defined as urinary tract infections resulting from indwelling catheters during

inpatient treatment and are measured by occurrence. CLABSI are defined as bloodstream infections that occur while a patient has a central line and measured by occurrence.

Summary

Described in this section were the research design and rationale, including variables and definitions. Variables included nurse manager engagement, nurse manager tenure, and NDNQI data. A description of the methodology and analysis plan was also provided that defined population, sample, and instrumentation.

Section 3: Presentation of the Results and Findings

Introduction

The purpose of this quantitative study was to investigate the relationships between nurse manager engagement, nurse manager tenure, and the outcomes of the patients served. Two research questions were stated: What are the relationships between nurse manager engagement scores and occurrences of HAPI (Stage II or greater), preventable falls, CAUTI, and CLABSI on acute care inpatient nursing units using the Press Ganey employee engagement survey and reported NDNQI data? and What are the relationships between nurse manager years of experience and occurrences of HAPI (Stage II or greater), preventable falls, CAUTI, and CLABSI on acute care inpatient nursing units using hospital data and reported NDNQI data? The secondary datasets and analysis are described in this section, and summary of the statistical analysis is presented.

Data Collection of Secondary Data Set

The study data were collected by three methods. For NDNQI data, the sample included all patients admitted between January 1, 2018 and December 31, 2018 (2018 dataset) and January 1, 2019 and December 31, 2019 (2019 dataset) who met criteria for a hospital-acquired condition as defined by NDNQI. Patient outcomes data were analyzed by the study site's quality department and reported quarterly to NDNQI. Data analyzed included patient conditions that met criteria for one of the variables (CAUTI, CLABSI, falls, and HAPI). NDNQI data are reported on a unit level and can be attributed to specific nurse managers by unit number.

Press Ganey sent surveys to each employee through electronic mail in February 2018 and February 2019. The values used to quantify nurse managers' engagement were calculated by the average of the responses from their direct reporting team for the following survey items: "The person I report to supports free exchanges of opinions and ideas"; "The person I report to is responsive when I raise an issue"; "The person I report to uses the performance process to coach me on my professional development"; and "The person I report to encourages teamwork."

Data for nurse manager tenure included nurse managers at the organization who had been in their role for 12 months or greater as of January 1, 2018 and January 1, 2019. Units were excluded from the study based on their respective nurse managers' tenure. All data analyzed in this study were requested from the study site and did not require special permission.

Nurse manager engagement score data could not be obtained from the organization due to the confidentiality of Press Ganey survey reporting. The values used to quantify nurse managers' engagement were calculated by the average of the responses from their teams for the following survey questions: "The person I report to supports free exchanges of opinions and ideas"; "The person I report to is responsive when I raise an issue"; "The person I report to uses the performance process to coach me on my professional development"; and "The person I report to encourages teamwork."

Reported NDNQI data were used for the outcome variables for this study. CAUTIs and CLABSIs are reported based on occurrence per 1,000 patient days. I used

actual occurrence values instead of calculated occurrences per 1,000 patient days. Actual occurrence values were used to prevent skewing data calculations and statistical analyses.

The secondary datasets analyzed contained data for 35 inpatient nursing units described by unit number. The unit-level data for the following variables included nurse manager tenure as of January 1, 2018 and January 1, 2019, nurse manager engagement score for 2018 and 2019, preventable falls per occurrence during 2018 and 2019, HAPI occurrences for 2018 and 2019, CAUTI per occurrence during 2018 and 2019, and CLABSI per occurrence during 2018 and 2019. Nurse managers with less than 12 months of tenure for 2018 or 2019 were excluded, and no values were entered in the SPSS dataset. During SPSS calculation, missing cases were excluded listwise to prevent inclusion of cases where tenure inclusion requirements were not met.

Nonprobability purposive sampling was used in this study, based on criteria for inclusion. The criteria for inclusion were based on the nurse manager's tenure in the unit. Data for nurse managers and their respective unit(s) were excluded from the study if the nurse managers had not been in their role for 12 months prior to January 2018. The sample was representative of the population of interest and included 35 inpatient nursing units at an acute care facility. After removing data based on exclusion criteria, calculations for 2018 included 31 units (88.6%), and calculations for 2019 included 30 units (85.7%).

Results

The secondary datasets analyzed contained data for 35 inpatient nursing units described by unit number. The unit-level data for the following variables included nurse

manager tenure as of January 1, 2018 and January 1, 2019, nurse manager engagement score for 2018 and 2019, preventable falls per occurrence during 2018 and 2019, HAPI occurrences for 2018 and 2019, CAUTI per occurrence during 2018 and 2019, and CLABSI per occurrence during 2018 and 2019. The following statistical assumptions were made to verify that Pearson's *r* was the appropriate statistical analysis. All of the variables were independent of each other. Both X and Y variables were quantitative and interval/ratio level data. Both X and Y variables are linearly related based on scatterplots. A scatterplot was constructed for each outcome and predictor variable; see Figures 1-4.

Figure 1

Nurse Manager Engagement and NDNQI 2018 Scatterplot

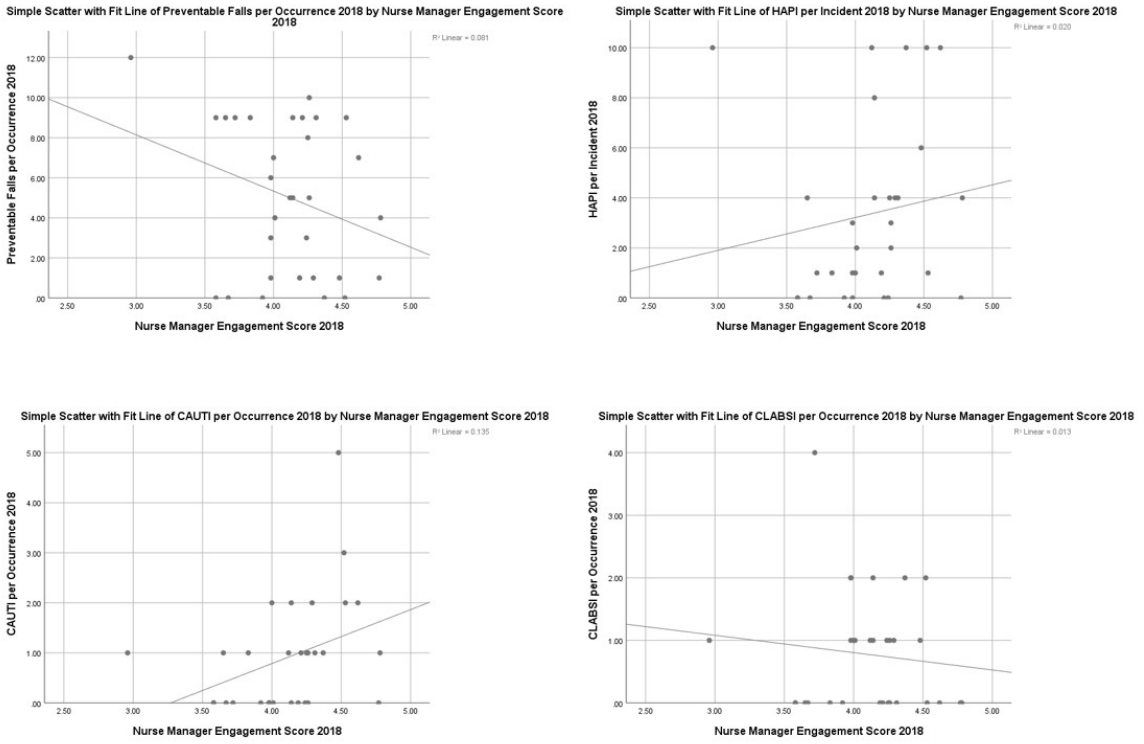


Figure 2

Nurse Manager Tenure and NDNQI 2018 Scatterplot

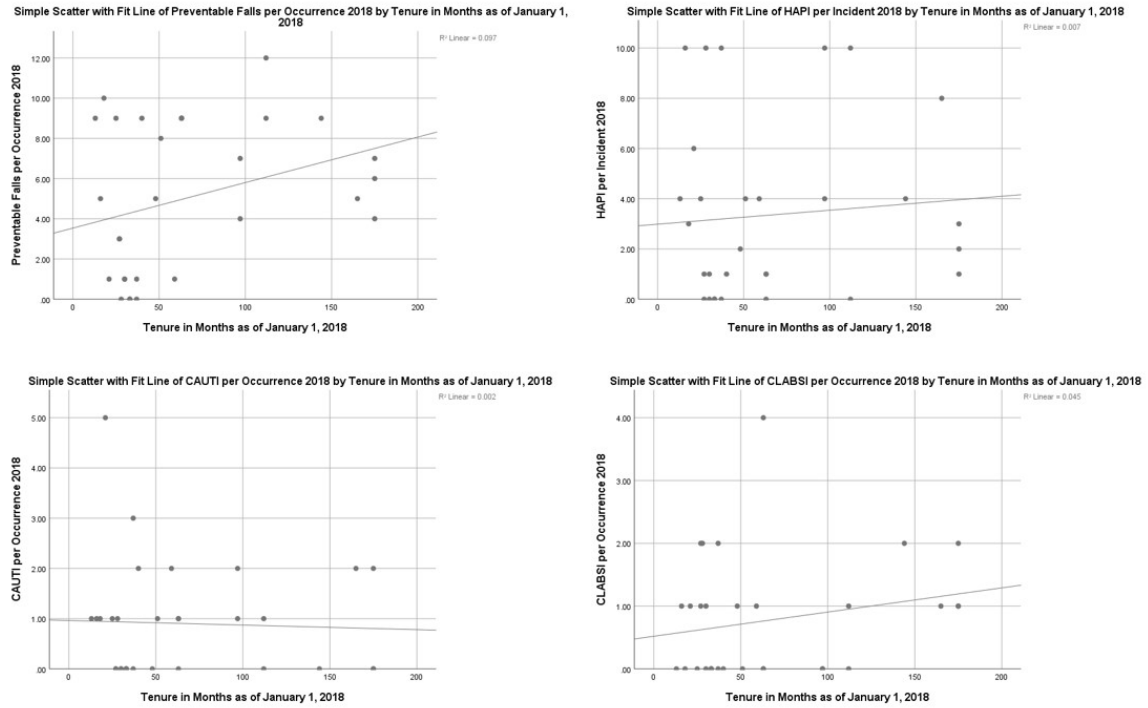


Figure 3

Nurse Manager Engagement and NDNQI 2019 Scatterplot

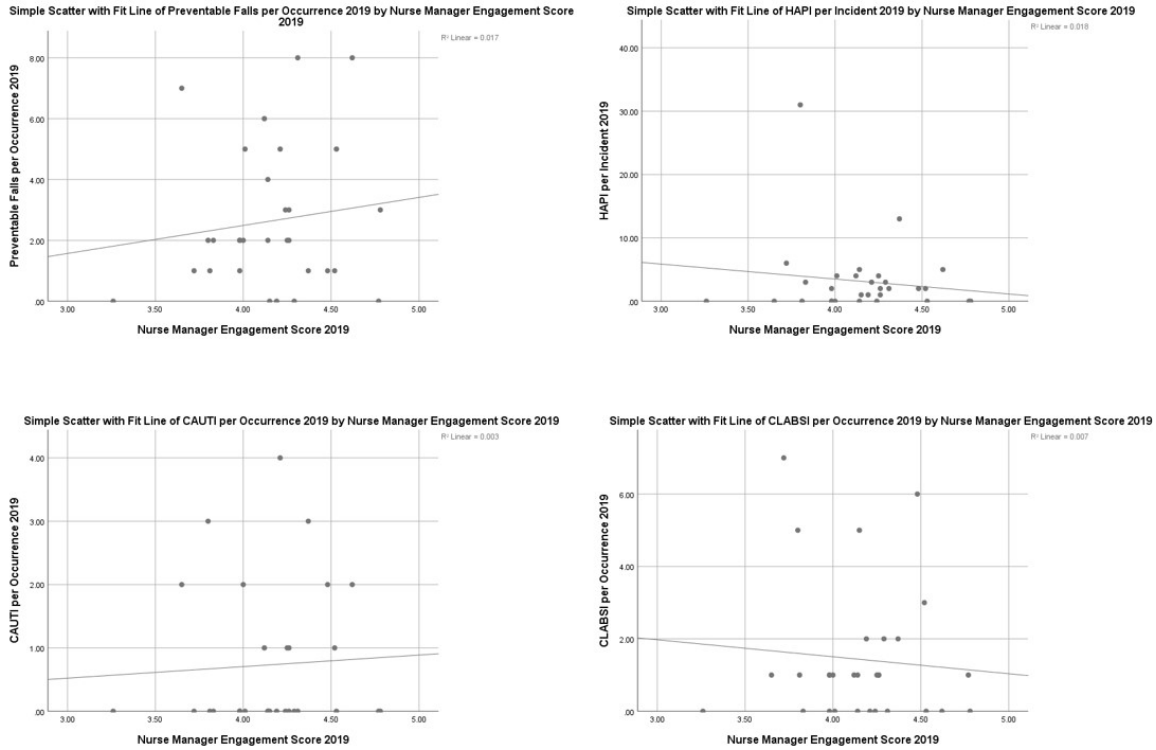
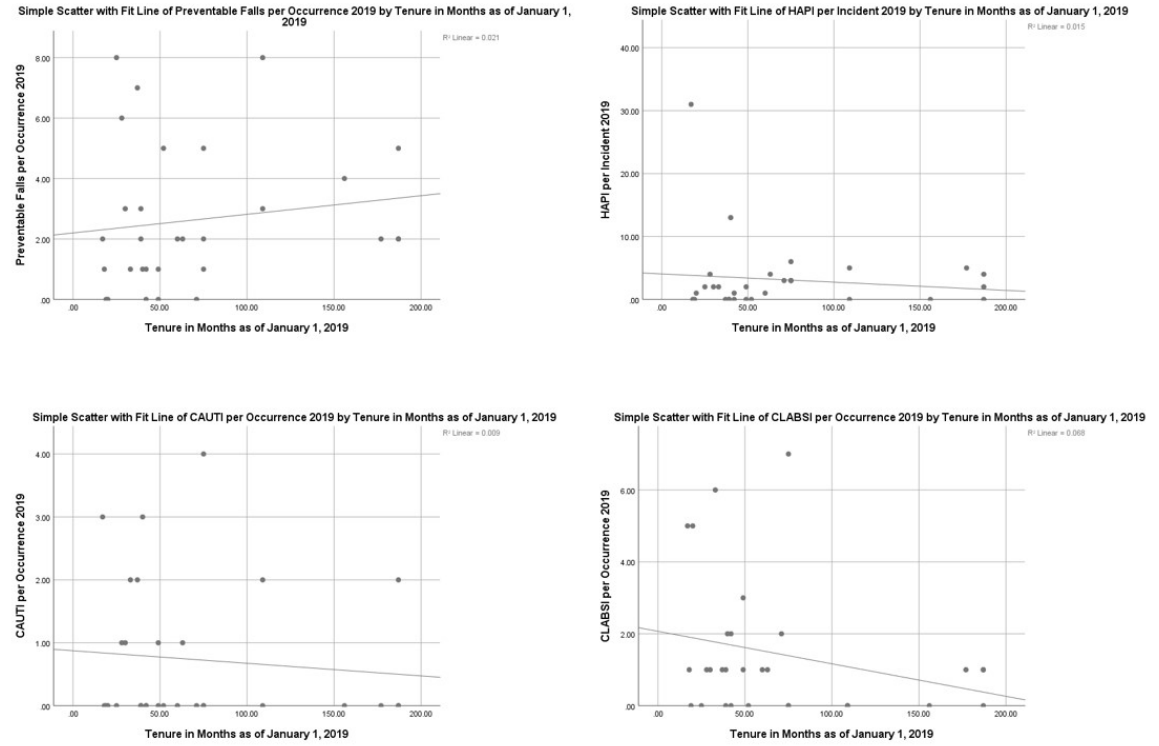


Figure 4

Nurse Manager Tenure and NDNQI 2019 Scatterplot



Pearson's correlations were performed for 2018 and 2019 datasets to assess whether preventable falls, HAPI, CAUTI, and CLABSI occurrences could be predicted by nurse manager engagement or nurse manager tenure in months based on secondary data provided by the organization. Data for preventable falls, HAPI, CAUTI, and CLABSI occurrences were obtained from the organization for 2018 and 2019. Nurse manager engagement score values were obtained from employee feedback on the organization's Press Ganey data for 2018 and 2019, which ranged from 0-5. Nurse manager tenure for 2018 in months for the included units ($N = 31$) ranged from 13

months to 175 months with an average of 66.03 months. Four units were excluded from 2018 data because the nurse manager had not been in the role for at least 12 months. Nurse manager tenure for 2019 in months for the included units ($N = 30$) ranged from 17 months to 187 months with an average of 70.33 months. Inpatient units were excluded ($N = 5$) from the 2019. The four units excluded in 2018 were included in 2019 data due to the nurse manager reaching 12 or more months in the role as of January 1, 2019. Nurse manager tenure in months was calculated based on data provided by the organization. In addition, multiple regression models were conducted for each research question. The model summary provided the R^2 value for each regression which indicated the percent in variation of the independent variable that could be attributed to the dependent variables.

RQ1 Quantitative: What are the relationships between nurse manager engagement scores and occurrences of HAPI (Stage II or greater), preventable falls, CAUTI, and CLABSI on acute care inpatient nursing units using the Press Ganey employee engagement survey and reported NDNQI data?

Pearson's correlations were performed to assess whether preventable falls, HAPI, CAUTI, and CLABSI occurrences could be predicted by nurse manager engagement. Scores were based on secondary datasets provided by the organization for 2018 and 2019. Data on preventable falls, HAPI, CAUTI, and CLABSI occurrences were obtained from the study site for 2018 and 2019. Nurse manager engagement score values were obtained from the Press Ganey data from 2018 and 2019 provided by the organization and ranged from 0-5.

A Pearson's correlation between nurse manager engagement and NDNQI for 2018 (Table 1) was conducted ($N = 31$). This test was performed to identify potential relationships between nurse manager engagement score for 2018 ($M = 4.11$. $SD = .39$) and preventable falls per occurrence ($M = 5.03$, $SD = 3.81$, $r = -.285$, $p = .120$), HAPI occurrences ($M = 3.35$, $SD = 3.55$, $r = .143$, $p = .444$), CAUTI per occurrence ($M = .90$, $SD = 1.14$, $r = .367$, $p = .042$), and CLABSI per occurrence ($M = .77$, $SD = .95$, $r = -.112$, $p = .548$) for the same year. A regression model was run ($R^2 = .106$) that indicated 10.6 percent of the variation patient outcomes can be attributed to engagement of the nurse manager. The correlations between nurse manager engagement score and CAUTI per occurrence, and nurse manager engagement score and HAPI incidents, identified positive relationships at the alpha level of 0.05. The correlation between nurse manager engagement and CAUTI was moderately positive with a correlation coefficient of .367. There were weak negative relationships identified between nurse manager engagement and preventable falls, and nurse manager engagement and CLABSI occurrences, with an alpha level of 0.05; see Table 1. The correlation coefficient identifies that relationships are present, and the p value indicates statistical significance at the 0.05 alpha level. There was statistical significance inferred between nurse manager engagement and CAUTI per occurrence for 2018.

Table 1

2018 Nurse Manager Engagement and NDNQI

		Nurse manager engagement score 2018	Preventable falls per occurrence 2018	HAPI per occurrence 2018	CAUTI per occurrence 2018	CLABSI per occurrence 2018
Nurse manager engagement score 2018	Pearson correlation	1	-.285	.143	.367*	-.112
	Sig. (2-tailed)		.120	.444	.042	.548
	N	31	31	31	31	31
Preventable falls per occurrence 2018	Pearson correlation	-.285	1	.066	-.022	-.044
	Sig. (2-tailed)	.120		.726	.905	.815
	N	31	31	31	31	31
HAPI per occurrence 2018	Pearson correlation	.143	.066	1	.529**	.221
	Sig. (2-tailed)	.444	.726		.002	.233
	N	31	31	31	31	31
CAUTI per occurrence 2018	Pearson correlation	.367*	-.022	.529**	1	-.021
	Sig. (2-tailed)	.042	.905	.002		.912
	N	31	31	31	31	31
CLABSI per occurrence 2018	Pearson correlation	-.112	-.044	.221	-.021	1
	Sig. (2-tailed)	.548	.815	.233	.912	
	N	31	31	31	31	31

*Correlation is significant at the 0.05 level (2-tailed). **Correlation is significant at the 0.01 level (2-tailed).

A Pearson correlation was conducted on nurse manager engagement and NDNQI data for 2019 (Table 2) to identify potential relationships between nurse manager engagement 2019 (*N = 30, M* = 4.15, *SD* = .33) and preventable falls per occurrence (*M* = 2.63, *SD* = 2.36, *r* = -.130, *p* = .492), HAPI per occurrence (*M* = 3.13, *SD* = 5.93, *r* = -.133, *p* = .484), CAUTI per occurrence (*M* = .73, *SD* = 1.14, *r* =.053, *p* = .779), and CLABSI per occurrence (*M* = 1.43, *SD* = 1.91, *r* = -.082, *p* = .666) for the same year. There were weak positive relationships between nurse manager engagement and preventable falls, and CAUTI occurrences at the alpha level of 0.05. The relationships between nurse manager engagement and HAPI occurrences, and nurse manager engagement and CLABSI occurrences are both weak and negative at the 0.05 alpha level, see Table 2. The p values infer that the identified relationships are not statistically significant. A regression model was run (R^2 = -.107) that indicated 10.7 percent of the variation patient outcomes can be attributed to engagement of the nurse manager.

Table 2

2019 Nurse Manager Engagement and NDNQI

		Nurse manager engagement score 2019	Preventable falls per occurrence 2019	HAPI per occurrence 2019	CAUTI per occurrence 2019	CLABSI per occurrence 2019
Nurse manager engagement score 2019	Pearson correlation	1	.130	-.133	.053	-.082
	Sig. (2-tailed)		.492	.484	.779	.666
Preventable falls per occurrence 2019	Pearson correlation	.130	1	-.028	.244	-.432*
	Sig. (2-tailed)	.492		.881	.193	.017
HAPI per occurrence 2019	Pearson correlation	-.133	-.028	1	.514**	.419*
	Sig. (2-tailed)	.484	.881		.004	.021
CAUTI per occurrence 2019	Pearson correlation	.053	.244	.514**	1	.182
	Sig. (2-tailed)	.779	.193	.004		.337
CLABSI per occurrence 2019	Pearson correlation	-.082	-.432*	.419*	.182	1
	Sig. (2-tailed)	.666	.017	.021	.337	

Note. Listwise $N = 30$.

*Correlation is significant at the 0.05 level (2-tailed). **Correlation is significant at the 0.01 level (2-tailed).

RQ2 Quantitative: What are the relationships between nurse manager years of experience and occurrences of HAPI (Stage II or greater), preventable falls, CAUTI, and CLABSI on acute care inpatient nursing units using hospital data and reported NDNQI data?

Multiple Regressions and Pearson correlations were performed to assess whether preventable falls, HAPI, CAUTI, and CLABSI occurrences could be predicted by nurse manager tenure in months based on the organization's secondary datasets for 2018 and 2019. Preventable falls, HAPI, CAUTI, and CLABSI occurrences were obtained from the organization's quality department. Nurse manager tenure (2018) was calculated in months for the included units ($N = 31$) and ranged from 13 months to 175 months with an average of 66.03 months. Nurse manager tenure (2019) was calculated in months for the included units ($N = 30$) and ranged from 17 months to 187 months with an average of 70.33 months.

Nurse manager tenure and NDNQI (2018) was analyzed to identify potential relationships between nurse manager tenure in months as of January 1, 2018 ($M = 66.03$. $SD = 52.39$) and preventable falls per occurrence ($M = 5.03$, $SD = 3.81$, $r = .311$, $p = .088$), HAPI per occurrence ($M = 3.35$, $SD = 3.55$, r = .082, $p = .661$), CAUTI per occurrence ($M = .90$, $SD = 1.14$, $r = -.042$, $p = .823$), and CLABSI per occurrence ($M = .77$, $SD = .95$, $r = .211$, $p = .254$) for the same year. There was a moderate positive correlation between nurse manager tenure and preventable falls, and weak positive relationships between nurse manager tenure and CLABSI, and HAPI occurrences at the alpha level of 0.05. The correlation between nurse manager tenure and CAUTI

occurrences identified a weak negative relationship, see Table 3. The p values infer that the identified relationships are not statistically significant. A regression model was run (R^2 = .019) that indicated 1.9 percent of the variation patient outcomes can be attributed to engagement of the nurse manager.

Table 3

2018 Nurse Manager Tenure and NDNQI

		Tenure in months as of January 1, 2018	Preventable falls per occurrence 2018	HAPI per occurrence 2018	CAUTI per occurrence 2018	CLABSI per occurrence 2018
Tenure in months as of January 1, 2018	Pearson correlation	1	.311	.082	-.042	.211
	Sig. (2-tailed)		.088	.661	.823	.254
	N	31	31	31	31	31
Preventable falls per occurrence 2018	Pearson correlation	.311	1	.066	-.022	-.044
	Sig. (2-tailed)	.088		.726	.905	.815
	N	31	31	31	31	31
HAPI per occurrence 2018	Pearson correlation	.082	.066	1	.529**	.221
	Sig. (2-tailed)	.661	.726		.002	.233
	N	31	31	31	31	31
CAUTI per occurrence 2018	Pearson correlation	-.042	-.022	.529**	1	-.021
	Sig. (2-tailed)	.823	.905	.002		.912
	N	31	31	31	31	31
CLABSI per occurrence 2018	Pearson correlation	.211	-.044	.221	-.021	1
	Sig. (2-tailed)	.254	.815	.233	.912	
	N	31	31	31	31	31

**. Correlation is significant at the 0.01 level (2-tailed).

The second Pearson's correlation was conducted ($N = 30$) to identify potential relationships between nurse manager tenure in months as of January 1, 2019 ($M = 70.33$, $SD = 54.85$) and preventable falls per occurrence ($M = 2.63$, $SD = 2.36$, $r = .143$, $p = .449$), HAPI per occurrence ($M = 3.13$, $SD = 5.93$, $r = -.121$, $p = .525$), CAUTI per occurrence ($M = .73$, $SD = 1.14$, $r = -.096$, $p = .614$), and CLABSI per occurrence ($M = 1.43$, $SD = 1.91$, $r = -.260$, $p = .165$) for the same year. The correlation between nurse manager tenure and HAPI, CAUTI, and CLABSI occurrences identified there are weak negative relationships at the alpha level of 0.05. A weak positive relationship was noted between nurse manager tenure and preventable falls at the same alpha level, see Table 4. The p values inferred that the identified relationships were not statistically significant. A regression model was run ($R^2 = .075$) that indicated 7.5 percent of the variation patient outcomes can be attributed to engagement of the nurse manager.

Table 4

2019 Nurse Manager Tenure and NDNQI

		Tenure in months as of January 1, 2019	Preventable falls per occurrence 2019	HAPI per incident 2019	CAUTI per occurrence 2019	CLABSI per occurrence 2019
Tenure in months as of January 1, 2019	Pearson correlation	1	.143	-.121	-.096	-.260
	Sig. (2-tailed)		.449	.525	.614	.165
Preventable falls per occurrence 2019	Pearson correlation	.143	1	-.028	.244	-.432*
	Sig. (2-tailed)	.449		.881	.193	.017
HAPI per occurrence 2019	Pearson correlation	-.121	-.028	1	.514**	.419*
	Sig. (2-tailed)	.525	.881		.004	.021
CAUTI per occurrence 2019	Pearson correlation	-.096	.244	.514**	1	.182
	Sig. (2-tailed)	.614	.193	.004		.337
CLABSI per occurrence 2019	Pearson correlation	-.260	-.432*	.419*	.182	1
	Sig. (2-tailed)	.165	.017	.021	.337	

Note. Listwise $N = 30$.

*Correlation is significant at the 0.05 level (2-tailed). **Correlation is significant at the 0.01 level (2-tailed).

Summary

The purpose of this quantitative study was to investigate the relationships between nurse manager engagement, nurse manager tenure, and the outcomes of the patients served. Two research questions were stated and analyzed in section three. Scatterplots indicated linear relationships between all variables. The Pearson correlation identified relationships present between the predictor and outcome variables, and the p values for all variables inferred if there was evidence against the null hypothesis. Based on p values

at the 0.05 alpha level, I am able to reject the null hypothesis that no relationships exist between the predictor and outcome variables.

Section 4: Application to Professional Practice and Implications for Social Change

Introduction

The purpose of this quantitative study was to investigate the relationships between nurse manager engagement scores, nurse manager tenure, and the outcomes of the patients served. The relationships between all predictor and outcome variables were linear and supported by scatterplots in Figures 1-4. The appropriate statistical analysis for correlating linear relationships is a Pearson correlation. Correlations were conducted to identify the strength of existing relationships. Nurse manager engagement data for 2018 and 2019 identified weak to moderate relationships between NDNQI outcomes at the 0.05 alpha level. Nurse manager tenure data for 2018 and 2019 identified weak to moderate relationships of NDNQI outcomes at the 0.05 alpha level. All findings supported a relationship, although weak, between the nurse manager and patient outcomes.

Interpretation of the Findings

Nurse manager engagement is a common variable in research into the nurse manager role and was identified and supported in this study as a predictor for patient outcomes (Conley, 2017). The outcomes support further exploration into nurse manager engagement as a tactic to support improved patient outcomes. While experts recommend increased organizational support for individuals serving as nurse managers, the absence of data in peer-reviewed literature to support nurse managers' direct impacts on patient outcomes presents a challenge (Conley, 2017; Duffield et al., 2019; Wise & Duffield, 2019). The complexity of the acute care landscape creates challenges for organizations in

identifying, prioritizing, and supporting initiatives that promote increased engagement for nurse managers. Without this support, nurse managers are at risk for increased stress, role confusion, administrative task overload, and burnout (Conley, 2017; Duffield et al., 2019; Wise & Duffield, 2019).

Nurse manager tenure has been linked to improved efficacy and performance (Van Dyk et al., 2016). This study's outcomes support a direct link between nurse manager tenure and patient outcomes; although this link is weak to moderate, a relationship exists.

Leadership complexity theory indicates that healthcare organizations are built on macro-, meso-, and microlevel teams. The macrolevel is responsible for setting the vision, while the microlevel is where the work happens. This structure leaves the meso-level leader to function as a conduit between the leaders setting the vision and the teams carrying out the work. Better support for the meso-level leader (nurse manager) may improve nurse manager engagement and tenure.

Limitations to the Study

The datasets were provided by a large academic medical center in the Southeastern United States. The committee members provided oversight of the research process during the study, ensuring internal validity. External validity or generalizability of this study was supported by Press Ganey engagement data and NDNQI data, which are benchmarked against academic medical centers of similar sizes. No reliability issues were identified during this study.

Recommendations

Research to further support the direct link between nurse manager engagement, nurse manager tenure, and patient outcomes is needed by organizations with similar benchmarks, as are studies by various sizes of organizations to increase support for the nurse manager role. Additional variables that draw a direct correlation between the nurse manager and patient outcomes are needed to strengthen evidence of nurse managers' direct impact on patient outcomes.

Implications for Professional Practice and Social Change

The outcomes of this study identified relationships between nurse managers and patient outcomes. Macrolevel leaders might use these outcomes to better support meso-level leaders' engagements in healthcare, resulting in improved patient outcomes and healthier communities. Limited available resources for healthcare systems have resulted in macrolevel leadership prioritizing healthcare initiatives based on evidence. The evidence of relationships between the nurse manager's role and patient outcomes resulting from this study supports the nurse manager's direct impact on patient outcomes.

The potential findings of this study may contribute to positive social change through improving the health of the community served. Improved quality of care may be driven by a more thorough understanding of the relationship between meso-level healthcare management and patient outcomes. The results of this research may provide evidence-based knowledge for improving structures to support healthcare leaders in making decisions that directly impact the patients and communities they serve. Initiatives

that focus on continually improving patient outcomes across healthcare systems support healthier patients in their respective communities (Lúanaigh & Hughes, 2016).

Conclusion

Often validated through the outcomes produced by their teams, meso-level leaders in healthcare are direct contributors to their organizations' success. Meso-level leaders require support from macrolevel leadership and microlevel teams for effectiveness and longevity in the role. This study may provide support for increased investment of individuals serving in the meso-level role and ultimately improve patients' outcomes on their units and their respective communities.

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